



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

April 21, 2020

Mr. Daniel G. Stoddard  
Senior Vice President  
and Chief Nuclear Officer  
Innsbrook Technical Center  
5000 Dominion Blvd  
Glen Allen, VA 29060

SUBJECT: PUBLIC MEETING SUMMARY OF PRE-SUBMITTAL MEETING FOR NORTH ANNA POWER STATION, UNITS 1 AND 2, SUBSEQUENT LICENSE RENEWAL APPLICATION

Dear Mr. Stoddard:

By letter dated November 9, 2017 (Agencywide Documents Access and Management System (ADAMS) Accession Nos. ML17318A087), Virginia Electric and Power Company (Dominion, or the applicant), submitted a letter of intent to submit a subsequent license renewal application (SLRA) for North Anna Power Station, Units 1 and 2 (North Anna).

On April 9, 2020, the U.S. Nuclear Regulatory Commission (NRC, or the staff) held a public meeting with Dominion to discuss the expected content of the upcoming submittal of the SLRA for North Anna Power Station, Units 1 and 2. The slides for the staff presentation are available at ADAMS Accession No. ML20099F299. The slides for the applicant's presentation are available at ADAMS Accession No. ML20099F241.

The NRC staff began with a brief overview of the subsequent license renewal (SLR) process. It consists of two tracks, environmental and safety. This meeting focused on the safety aspects. (An environmental pre-submittal meeting was held on October 22, 2019. The meeting summary may be found at ADAMS Accession No. ML19297F844). A tentative review schedule was shared. Assuming an application date of September 30, 2020, the final licensing decision is expected to be made in March 2022, which is 18 months after submittal.

Dominion then began their presentation with a description of the North Anna Power Station and its similarities to its sister station, Surry Power Station (Surry). (The SLRA for Surry is under review. The Safety Evaluation Report has been issued (ADAMS Accession No. ML20052F520) and a licensing decision is expected in June 2020.) The applicant noted that the same team that has been working on the Surry application is developing the North Anna application. Many of the Aging Management Programs (AMPs) will be the same, since both plants use the fleet AMPs. North Anna will have a higher level of aging management review line item consistency with the Generic Aging Lessons-Learned Report (GALL-SLR, Vol. 1 and 2, ADAMS Accession Nos. ML17187A031 and ML17187A204).

The applicant went into further detail on the aging management programs. North Anna is expected to have 48 AMPs. This includes seven that were not part of their initial license

renewal. Five AMPs are expected to have exceptions. As for enhancements, 12 are expected to be consistent with GALL and have no enhancements; 13 are expected to have approximately four or less enhancements; and 11 are expected to have greater than four enhancements. Dominion will be sharing the breakdown of which AMPs are in which category with the agency. The applicant suggested that those three groupings of AMPs should have different levels of staff reviews (in terms of hours spent, inclusion in audits, length of audit breakout sessions, requests for additional information, etc.) due to the differing levels of complexity and similarity with Surry. The NRC stated that they are open to the idea but will independently determine the appropriate level of review for each AMP based on the content of the submitted application.

Building upon a discussion from a prior industry-wide public meeting (SLR Lessons Learned, held on April 7, 2020. The meeting summary is available at ADAMS Accession No. ML20107F699.), the applicant listed nine AMPs in which they plan to include the revisions to the GALL-SLR that are currently under development by the staff. The applicant indicated that they would like additional feedback on the three interim staff guidance (ISG) documents that are italicized on the slide. For those three, it appears that staff and industry have not yet aligned on an approach. Dominion underscored that it will be important to them that the staff keeps to its expected schedule for issuing the related ISG documents for use and comment.

Several technical issues were then discussed in detail, the first of which was the flow tolerance evaluation for reactor coolant system cast austenitic stainless steel. As a conservative measure, the licensee will be performing the flow tolerance evaluation using two different methods, one each for a delta ferrite for check chemistry less than and greater than 25 percent. The North Anna Unit 1 crossover leg ferrite content for ladle and check chemistry conditions is 24.57 percent and 28.29 percent, respectively. The flaw tolerance evaluation for the piping will include an evaluation for the check-chemistry-based ferrite content (greater than 25%) in accordance with Appendix C of the 2019 Edition of American Society of Mechanical Engineers Code, Section XI.

For the reactor internals AMP, the licensee is planning to submit a supplement after the initial application. The supplement will include information from the planned refueling outage in the fall as well as insights from a pre-publication copy of MRP-227, Revision 2, which they expect to see in the first quarter of calendar year 2021. It is not anticipated that the original submittal will be substantially changed on the basis of the expected new information and insights.

The reactor vessel support steel configuration is substantially similar between North Anna and Surry. However, the loads on the supports for North Anna will be calculated based on the original break open time. The applicant noted that most of the supporting documents for the review are virtually identical to those submitted for Surry, with only slight differences. Given the similarities, the licensee inquired whether the review for North Anna would require an onsite audit in this area, as was the case for Surry. The NRC indicated that they would have to see the content of the actual application before making that determination.

An Equivalent Margins Analysis for Reactor Vessel Integrity will be completed by the Pressurized Water Reactors Owners' Group (PWROG) and submitted to the NRC for review in May 2020. A plant-specific report will be submitted for North Anna. In response to a staff question, the applicant clarified that this will be a different report than the one submitted for Surry because the two reactor vessels have different fabricators.

The environmentally assisted fatigue will be addressed differently for components/vessels and piping. The components and vessels will use the methodology from NUREG/CR-6909 (ADAMS

Accession No. ML16319A004). Unlike Surry, the cumulative usage factor values for North Anna's piping were determined by different reviewers at different times. For all of the technical topics described above, please see the licensee's slides for more information, including details.

The presentation then went on to discuss other plant-specific time-limited aging analyses (TLAAs). The applicant noted that three PWROG reports will generically address TLAAs; however, one of the three reports does not yet have an approved safety evaluation from the staff. Finalization of that PWROG report has been affected by the Coronavirus; nevertheless, it is expected by May. The next slide listed documents that are to be docketed with the SLRA. The applicant considers three of these to be the heart of the review: WCAP-18363-NP, Rev. 1, "North Anna Units 1 and 2 Heatup and Cooldown Limit Curves for Normal Operation," March 2020; WCAP-18353-NP, Rev 0, "Reactor Internals Fluence Evaluation for a Westinghouse 3-Loop Plant with Two Units," October 2018; and WCAP-18364-NP, Rev. 1, "North Anna Units 1 and 2 Time-Limited Aging Analysis on Reactor Integrity for Subsequent License Renewal (SLR)," March 2020." The following slide listed previously docketed documents that will be referenced in the application.

The applicant then provided closing remarks. During those remarks, the applicant noted that their application is ahead of schedule and that the staff, for planning purposes, can expect to receive the application approximately 30 days earlier than the sample schedule provided in the NRC staff slides. It is expected in the third quarter of 2020.

The NRC staff then inquired if there were any topics from the SLR lessons learned public meeting of April 7 (two days prior to this meeting) that the applicant would like to discuss in relation to North Anna. The applicant indicated that they would like to have further discussions related to the potential streamlining of the Operating Experience audits.

In general, throughout this meeting, the NRC and the applicant expressed willingness to embrace potential process improvements. Which improvements will be enacted and exactly how they will be enacted will depend on additional staff consideration, the outcome of discussions through the lessons-learned public meetings and other related public meetings, and the content of the application once received.

If you have any questions regarding this issue, please feel free to contact me by phone at 301-415-1056, or by email at [Lauren.Gibson@nrc.gov](mailto:Lauren.Gibson@nrc.gov).

Sincerely,

*/RA/*

Lauren K. Gibson, Project Manager  
License Renewal Projects Branch  
Division of New and Renewed Licenses  
Office of Nuclear Reactor Regulation

Docket Nos. 50-338 and 50-339

Enclosures: List of Attendees

SUBJECT: PUBLIC MEETING SUMMARY OF PRE-SUBMITTAL MEETING FOR NORTH ANNA POWER STATION, UNITS 1 AND 2, SUBSEQUENT LICENSE RENEWAL APPLICATION DATED APRIL 21, 2020

E-MAIL:

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RidsNrrDnrl Resource

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 AWu, NRR/DNRL  
 LGibson, NRR/DNRL  
 EOesterle, NRR/DNRL  
 RElliott, NMSS/REFS  
 HGonzalez, NRR/DNRL  
 MMitchell, NRR/DNRL  
 SBloom, NRR/DNRL  
 ABradford, NRR/DNRL  
 BCaldwell, NRR/DNRL  
 EMiller, NRR/DORL  
 MMarkley, NRR/DORL  
 DRoth, OGC  
 SBurnell, HQ/OPA  
 DMcIntyre, HQ/OPA

DAdams, OCA  
 RHannah, RII/OPA  
 JLedford, RII/OPA  
 JPelchat, RII/ORA  
 ELea, RII/ORA  
 CRead, RII/DRP  
 BCollins, RII/DRS  
 SBailey, RII/DRS  
 SDowney, RII/DRS  
 PCooper, RII/DRS  
 JQuichocho, OEDO  
 MMcCoppin, OEDO  
 KGamin, OGC

**ADAMS Accession Number: ML20104A039**

**\*via email concurrence**

OFFICE	NRR/DNRL/NLRP/PM	NRR/DNRL/NLRP/LA	NRR/DNRL/NLRP/PM
NAME	LKGibson*	SGreen*	AWu*
DATE	4/13/2020	4/13/2020	4/14/2020
OFFICE	NRR/DNRL/NLRP/BC	NRR/DNRL/NLRP/PM	
NAME	EOesterle*	LKGibson*	
DATE	4/10/2020	4/21/2020	

**OFFICIAL RECORD COPY**

## List of Attendees

All attendees participated remotely. Those with an asterisk (\*) presented.

### **NRC Attendees:**

Brian Allik  
Steven Bloom  
David Dijamco  
Carolyn Fairbanks  
Bob Fitzpatrick  
James Gavula  
Lauren Gibson\*  
Hipo Gonzalez  
Allen Hiser  
Caroline Hsu  
Naeem Iqbal  
Steve Jones  
Scott Krepel  
Bryce Lehman  
John Lehning  
Juan Lopez  
Robert Lukes  
Tania Martinez Navedo  
James Medoff  
Seung Min  
Carol Moyer  
Duc Nguyen  
Eric Oesterle\*  
Andrew Prinaris  
David Rudland  
Mo Sadollah

Christopher Sydnor  
George Thomas  
John Tsao  
Lynnea Wilkins  
Brandon Wise  
Kent Wood  
Angela Wu  
George Wang  
On Yee  
Mark Yoo

### **Dominion Attendees:**

Paul Aitken\*  
Eric Blocher\*  
John Disosway  
Craig Heah\*  
Jim Johnson  
Keith Miller  
Paul Phelps\*  
Charles Tomes\*

### **Public Attendees:**

Joe Terrell (Duke Energy)  
Emma Wong (Electric Power Research  
Institute, (EPRI))  
Additional unidentified attendees

Enclosure