Eugene S. Grecheck
Vice President
Nuclear Development

Dominion Energy, Inc. • Dominion Generation
Innsbrook Technical Center
5000 Dominion Boulevard, Glen Allen, VA 23060
Phone: 804-273-2442, Fax: 804-273-3903
E-mail: Eugene.Grecheck@dom.com

Dominion®

March 7, 2011

U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D. C. 20555

Serial No. NA3-11-008R
Docket No. 52-017
COL/DWL

DOMINION VIRGINIA POWER
NORTH ANNA UNIT 3 COMBINED LICENSE APPLICATION
SRP 09.05.01: RESPONSE TO RAI LETTER 58

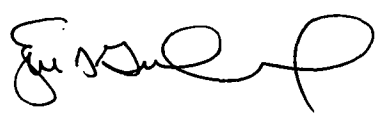
On February 9, 2011, the NRC requested additional information to support the review of certain portions of the North Anna Unit 3 Combined License Application (COLA). The responses to the following RAI Questions are provided in Enclosures 1 through 8:

- RAI 5342, Question 09.05.01-19 Fire Pump Separation Details
- RAI 5342, Question 09.05.01-20 Fire Water Supply Filtering
- RAI 5342, Question 09.05.01-21 Standard AWWA C906 for Fire Main
- RAI 5342, Question 09.05.01-22 Maintenance of Fire Protection Program Related Records
- RAI 5342, Question 09.05.01-23 Reporting of Fire Events and Deficiencies
- RAI 5342, Question 09.05.01-24 Applicable Editions of RG 1.189 and NFPA Codes and Standards
- RAI 5342, Question 09.05.01-25 Discussion of Modification Procedures
- RAI 5342, Question 09.05.01-26 Access to Keys for Locked Doors

This information will be incorporated into a future submission of the North Anna Unit 3 COLA, as described in the enclosures.

Please contact Regina Borsh at (804) 273-2247 (regina.borsh@dom.com) if you have questions.

Very truly yours,



Eugene S. Grecheck

D089
NRO

Enclosures:

1. Response to RAI Letter Number 58, RAI 5342 Question 09.05.01-19
2. Response to RAI Letter Number 58, RAI 5342 Question 09.05.01-20
3. Response to RAI Letter Number 58, RAI 5342 Question 09.05.01-21
4. Response to RAI Letter Number 58, RAI 5342 Question 09.05.01-22
5. Response to RAI Letter Number 58, RAI 5342 Question 09.05.01-23
6. Response to RAI Letter Number 58, RAI 5342 Question 09.05.01-24
7. Response to RAI Letter Number 58, RAI 5342 Question 09.05.01-25
8. Response to RAI Letter Number 58, RAI 5342 Question 09.05.01-26

Commitments made by this letter:

1. Incorporate proposed changes in a future COLA submission.

COMMONWEALTH OF VIRGINIA

COUNTY OF HENRICO

The foregoing document was acknowledged before me, in and for the County and Commonwealth aforesaid, today by Eugene S. Grecheck, who is Vice President-Nuclear Development of Virginia Electric and Power Company (Dominion Virginia Power). He has affirmed before me that he is duly authorized to execute and file the foregoing document on behalf of the Company, and that the statements in the document are true to the best of his knowledge and belief.

Acknowledged before me this 7th day of March, 2011
My registration number is 7173057 and my
Commission expires: August 31, 2012

Wanda K. Marshall
Notary Public

WANDA K. MARSHALL
Notary Public
Commonwealth of Virginia
7173057
My Commission Expires Aug 31, 2012

cc: U. S. Nuclear Regulatory Commission, Region II
C. P. Patel, NRC
T. S. Dozier, NRC
J. T. Reece, NRC

ENCLOSURE 1

Response to NRC RAI Letter 58

RAI 5342 Question 09.05.01-19

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

North Anna Unit 3

Dominion

Docket No. 52-017

RAI NO.: 5342 (RAI Letter 58)

SRP SECTION: 09.05.01 – FIRE PROTECTION PROGRAM

QUESTIONS for Fire Protection Team (SFPT)

DATE OF RAI ISSUE: 02/09/2011

NRC RAI.: 09.05.01-19

Describe how the redundant fire pumps and suctions are separated within the Station Water Intake/Fire Pump House. The description should include the spatial separation, detection, and suppression features in the building, and fire-rated barriers between the redundant supplies, if any, to ensure that one supply remains free from fire damage.

Dominion Response

North Anna Unit 3 (NA3) has two fire pumps. One fire pump is electric motor-driven and the other is diesel-driven. These two fire pumps are located in the station water intake/fire pump house and each takes suction from a separate bay. The diesel-driven fire pump is separated from the electric-motor driven fire pump and other pumps within the station water intake/fire pump house by a 3-hour fire rated barrier in accordance with NFPA 804, 2006 ed., Paragraph 8.1.2.3(4) to ensure that one fire water supply is free from fire damage. The electric motor-driven fire pump is also separated from other pumps by a 3-hour fire rated barrier. The fire pumps meet the requirements in NFPA 20, 2003 ed., as identified in FSAR Section 9.5.1.2.2. In addition, the station water intake/fire pump house is supplied with an automatic fire protection sprinkler system in accordance with NFPA 804, Paragraphs 10.22 and 10.28.

S-COLA FSAR Figure 9.5.1-202, Fire Pumping Station Flow Schematic, shows a 3-hour fire rated barrier separating the diesel-driven fire pump from the electric motor-driven fire pump. This schematic identifies the 3-hour fire rated barriers surrounding the

diesel-driven fire pump and the electric motor driven fire pump. This figure also shows the connection for the station water intake/fire pump house sprinkler system. Either fire pump can supply the sprinkler system.

Fire Hazards Analysis, FSAR Section 9A.3.155, Miscellaneous Plant Support Structures, summarizes the fire protection requirements for various structures including the station water intake/fire pump house. The fire detection and suppression features for this structure meet the applicable NFPA codes and standards, building code requirements, and nuclear plant property insurer's requirements.

Proposed COLA Revision

None

ENCLOSURE 2

Response to NRC RAI Letter 58

RAI 5342 Question 09.05.01-20

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

North Anna Unit 3

Dominion

Docket No. 52-017

RAI NO.: 5342 (RAI Letter 58)

SRP SECTION: 09.05.01 – FIRE PROTECTION PROGRAM

QUESTIONS for Fire Protection Team (SFPT)

DATE OF RAI ISSUE: 02/09/2011

NRC RAI.: 09.05.01-20

The applicant states that filtering (of fire water supply) is not required because of the small amount of total suspended solids in the lake water. Did the applicant arrive at this conclusion based on water sampling or past performance?

Dominion Response

The conclusion that filtering the fire water supply is not required is based on the sampling that was performed in support of the Environmental Report. The North Anna 3 Combined License Application, Part 3: Applicant's Environmental Report – Combined License Stage, Revision 3, June 2010, contains the water quality data for Lake Anna in Table 2.3-1. This sampling identifies the maximum value sampled over a 12-month period for Total Suspended Solids (TSS) level for Lake Anna as 4.8 ppm (mg/L).

The fire water supply system for NA3 complies with the guidance provided in NFPA 20, 24 and 25. These NFPA codes identify requirements for screens at the intake structure and for a strainer on the inlet suction of the fire pump to prevent debris of excessive size from entering the fire water supply system piping.

Proposed COLA Revision

None.

ENCLOSURE 3

Response to NRC RAI Letter 58

RAI 5342 Question 09.05.01-21

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

North Anna Unit 3

Dominion

Docket No. 52-017

RAI NO.: 5342 (RAI Letter 58)

SRP SECTION: 09.05.01 – FIRE PROTECTION PROGRAM

QUESTIONS for Fire Protection Team (SFPT)

DATE OF RAI ISSUE: 02/09/2011

QUESTION NO.: 09.05.01-21

The NFPA 24 standard (2002 Edition) referenced in the US-APWR DCD does not identify the AWWA C906 standard for installation of high-density polyethylene piping. The applicant should commit to NFPA 24, 2010 Edition, and/or AWWA C906 and provide references to these standards appropriate.

Dominion Response

The US-APWR DCD does not specify or address high-density polyethylene pipe material and leaves the pipe material selection to the COL applicant as part of the site-specific design of the fire main system. S-COLA FSAR Section 9.5.1.2.3 identifies the underground fire main material as high-density polyethylene. A commitment to meet the requirements of AWWA C906 (2007 Edition) for high-density polyethylene pipe will be added to FSAR Section 9.5.10 and FSAR Section 9.5.1.2.3 will be revised to include a reference to this standard.

Proposed COLA Revision

FSAR Sections 9.5.1.2.3 and 9.5.10 will be revised as indicated on the attached markup.

Markup of North Anna COLA

The attached markup represents Dominion's good faith effort to show how the COLA will be revised in a future COLA submittal in response to the subject RAI. However, the same COLA content may be impacted by revisions to the DCD, responses to other COLA RAIs, other COLA changes, plant design changes, editorial or typographical corrections, etc. As a result, the final COLA content that appears in a future submittal may be somewhat different than as presented herein.

tests are performed to maintain and verify firewater supply system capabilty.

Fire department connections on all major buildings allow a fire department pumper truck to pump water into the FPS as an additional fire protection water supply source.

9.5.1.2.3 **Fire Water Supply Piping, Yard Piping, and Yard Hydrants**

NAPS COL 9.5(2) Replace the seventh paragraph in DCD Subsection 9.5.1.2.3 with the following.

The yard main loop is shown in Figures 9.5.1-201 and 9.5.1-204. The underground yard piping is 12-inch diameter high-density polyethylene piping that meets the requirements of AWWA C906 (Reference 9.5.1-215) and is very resistant to corrosion and biofouling. A minimum of 6-inch diameter piping supplies each hydrant and is provided with an isolation valve for hydrant servicing. Building feeds have a minimum 8-inch diameter.

9.5.1.2.4 **Manual Suppression Means**

STD* COL 9.5(2) Replace the second and third sentences of third paragraph in DCD Subsection 9.5.1.2.4 with the following.

That standpipe can be isolated from the normal fire protection water source after a SSE and the standpipe can be aligned to the ESWS for water supply of at least two hose streams of 75 gpm each. To support two hours operation of these hose streams, the ESWS is designed to supply at least 18,000 gallons for this need.

9.5.1.3 **Safety Evaluation**

STD* COL 9.5(1) Replace the eight paragraph in DCD Subsection 9.5.1.3 with the following

The Final FHA and safe-shutdown evaluation based on the final plant cable routing, fire barrier ratings, fire loading, ignition sources, purchased equipment and equipment arrangement will be performed. The final FHA and safe-shutdown evaluation will include a review against the assumptions and requirements stated in the initial FHA and safe-shutdown evaluation. The final FHA and safe-shutdown evaluation

9.5.1-210 NFPA 701, *Standard Methods of Fire Tests for Flame Propagation of Textiles and Films*, 2010 Edition, National Fire Protection Association, Quincy, MA.

9.5.1-211 NFPA 1404, *Standard for Fire Service Respiratory Protection Training*, 2006 Edition, National Fire Protection Association, Quincy, MA.

9.5.1-212 NFPA 1451, *Standard for a Fire Service Vehicle Operations Training Program*, 2007 Edition, National Fire Protection Association, Quincy, MA.

9.5.1-213 NFPA 1500, *Standard on Fire Department Operation Safety and Health Program*, 2007 Edition, National Fire Protection Association, Quincy, MA.

9.5.1-214 NFPA 1962, *Standard for the Inspection, Care, and Use of Fire Hose, Couplings, and Nozzles and the Service Testing of Fire Hose*, 2008 Edition, National Fire Protection Association, Quincy, MA.

9.5.1-215 AWWA C906, *Polyethylene (PE) Pressure Pipe and Fittings, 4 In. (100 mm) Through 63 In. (1,600 mm), for Water Distribution and Transmission*, January 2007, American Water Works Association.

ENCLOSURE 4

Response to NRC RAI Letter 58

RAI 5342 Question 09.05.01-22

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

North Anna Unit 3

Dominion

Docket No. 52-017

RAI NO.: 5342 (RAI Letter 58)

SRP SECTION: 09.05.01 – FIRE PROTECTION PROGRAM

QUESTIONS for Fire Protection Team (SFPT)

DATE OF RAI ISSUE: 02/09/2011

QUESTION NO.: 09.05.01-22

Please include a discussion regarding the maintenance of records related to the fire protection program in the referenced subsection 9.5.1.6. (Table 9.5.1-1R, Position Number 1.8.1.5)

Dominion Response

Dominion has committed to the maintenance of fire protection program records consistent with RG 1.189, Revision 1. The intent of Regulatory Position 1.8.1.5 in RG 1.189 is that records of fire protection program-related changes in the facility, and changes in procedures, tests, and experiments that do not require prior NRC approval should be maintained. These records include written evaluations that provide the bases for the determinations that the changes do not adversely affect safe-shutdown capability.

To comply with 10CFR50.48(a)(3), the fire protection plan and its revisions shall be retained until the license is terminated, and each superseded revision of the procedures shall be retained for three years from the date it was superseded. FSAR Section 9.5.1.6.4 will be revised to specifically address the records retention requirements in 10CFR50.48 (a)(3).

Proposed COLA Revision

FSAR Section 9.5.1.6.4 will be revised as indicated on the attached markup.

Markup of North Anna COLA

The attached markup represents Dominion's good faith effort to show how the COLA will be revised in a future COLA submittal in response to the subject RAI. However, the same COLA content may be impacted by revisions to the DCD, responses to other COLA RAIs, other COLA changes, plant design changes, editorial or typographical corrections, etc. As a result, the final COLA content that appears in a future submittal may be somewhat different than as presented herein.

Self-contained breathing apparatus are approved by the National Institute for Occupational Health and Safety and Mine Safety and Health Administration with minimum service duration of 30 minutes and operate in the positive pressure mode only. At least 10 masks are readily available for fire brigade personnel. Also, a 1-hour supply of breathing air in extra bottles is located at the plant for each self-contained breathing apparatus. In addition, an onsite 6-hour supply of reserve air is provided for fire brigade personnel and is arranged to permit quick and complete replenishment of exhausted air supply bottles as they are returned.

All fire brigade equipment undergoes inspection and maintenance at least annually. Operation and maintenance manuals and maintenance reports for the fire brigade equipment are retained on file and available to the fire brigade. Thermal protective clothing and protective equipment are used and maintained in accordance with manufacturer's instructions and subject to a maintenance and inspection program.

Fire brigade members using self-contained breathing apparatus operate in teams of two or more who are in communication with each other through visual, audible, physical, safety guide rope, electronic, or other means to coordinate their activities and are in close proximity to each other to provide assistance in case of an emergency.

In addition to the appropriate protective clothing, fire brigade equipment provided includes fire hoses, the appropriate fire hose nozzles for electric plant usage, portable fire extinguishers, wheeled fire extinguishers, portable exhaust fans, portable emergency communication equipment, portable lighting, and fire fighting foam carts suitable for responding to fires involving hydrocarbon lube oil.

9.5.1.6.4 **Administrative Controls**

Administrative controls for the Fire Protection Program are implemented through plant administrative procedures. These procedures are available for review and inspection prior to implementation of the program.

These controls establish procedures to:

- Identify actions to be taken by an individual discovering a fire, such as notification to the Control Room, attempting to extinguish the fire, and actuation of local fire suppression systems;

- Define actions to be taken by the Control Room operator, such as sounding fire alarms, and notifying the Shift Supervisor of the type, size and location of the fire;
- Identify actions to be taken by the fire brigade after notification of a fire, including location to assemble, directions given by the fire brigade leader, the responsibilities of brigade members such as selection of fire fighting and protective equipment and use of preplanned strategies for fighting fires in specific areas;
- Identify actions to be taken by the Security force upon notification of a fire;
- Define the strategies established for fighting fires in safety-related areas and areas presenting a hazard to safety-related equipment, including the designation of the:
  - Fire hazards in each plant zone covered by a fire fighting procedure;
  - Fire extinguishers best suited for controlling fires with the combustible loadings of the zone and the nearest location of these extinguishers;
  - Most favorable direction from which to attack a fire in each area in view of the ventilation direction, access hallways, stairs, and doors that are most likely to be free of fire, and the best station of elevation for fighting the fire. All access and egress routes that involve locked doors are specifically identified in the procedure with the appropriate precautions and methods for access specified;
  - Plant systems that should be managed to reduce the damage potential during a local fire and the location of local and remote controls for such management (e.g., any hydraulic or electrical system in the zone covered by the specific fire fighting procedure that could increase the hazards in the area because of overpressurization or electrical hazards);
  - Vital heat-sensitive system components that need to be kept cool while fighting a local fire. Particularly hazardous combustibles that need cooling are designated;
  - Potential radiological and toxic hazards in fire zones;

- Ventilation system operation that ensures desired plant air distribution when the ventilation flow is modified for fire containment or smoke clearing operations;
- Operations requiring Control Room and Operating Supervisor coordination or authorization; and
- Instructions for plant operators and general plant personnel during a fire.

- Organize the fire brigade and assign special duties according to job title so that all fire fighting functions are covered by any complete shift personnel complement. These duties include command and control of the brigade, transporting fire suppression and support equipment to the fire scenes, applying the extinguishing agent to the fire, communication with the Control Room, and coordination with outside fire departments.
- Implement compensatory measures such as fire watches, temporary fire barriers, and backup suppression capability as required.
- Report fire events and fire protection deficiencies that meet the criteria of 10 CFR 50.72 and 10 CFR 50.73 to the NRC in accordance with the requirements of these regulations.
- Maintain records of Fire Protection Program related changes in the facility, changes in procedures, and tests and experiments that will not require prior NRC approval. These records will include the written evaluations that provide the bases for the determinations that the changes do not adversely affect safe-shutdown capability. The fire protection plan and its revisions will be retained until the license is terminated. Each superseded revision of the procedures will be retained for three years from the date it was superseded.

9.5.1.6.5 Control of Combustible Materials, Hazardous Materials and Ignition Sources

The control of combustible materials is defined by administrative procedures. These procedures impose the following controls:

- Prohibit the storage of combustible materials (including unused ion exchange resins) in areas that contain or expose safety-related equipment or establish designated storage areas with appropriate fire protection;

ENCLOSURE 5

Response to NRC RAI Letter 58

RAI 5342 Question 09.05.01-23

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

North Anna Unit 3

Dominion

Docket No. 52-017

RAI NO.: 5342 (RAI Letter 58)

SRP SECTION: 09.05.01 – FIRE PROTECTION PROGRAM

QUESTIONS for Fire Protection Team (SFPT)

DATE OF RAI ISSUE: 02/09/2011

QUESTION NO.: 09.05.01-23

Please include a discussion regarding the reporting of events and conditions related to fire protection in the referenced subsection 9.5.1.6. (Table 9.5.1-1R, Position Number 1.8.5)

Dominion Response

North Anna Unit 3 FSAR Table 9.5.1-1R, Fire Protection Program Conformance with RG 1.189, states that Unit 3 will conform to the requirements of Regulatory Position 1.8.5 in RG 1.189. Regulatory Position 1.8.5 states that the requirements of 10CFR50.72 and 10CFR50.73 apply to reporting certain events and conditions related to fire protection at nuclear power plants. FSAR Section 9.5.1.6.4 will be revised to specifically address the reporting requirements in 10CFR50.72 and 10CFR50.73.

Proposed COLA Revision

FSAR Section 9.5.1.6.4 will be revised as indicated on the attached markup.

Markup of North Anna COLA

The attached markup represents Dominion's good faith effort to show how the COLA will be revised in a future COLA submittal in response to the subject RAI. However, the same COLA content may be impacted by revisions to the DCD, responses to other COLA RAIs, other COLA changes, plant design changes, editorial or typographical corrections, etc. As a result, the final COLA content that appears in a future submittal may be somewhat different than as presented herein.

Self-contained breathing apparatus are approved by the National Institute for Occupational Health and Safety and Mine Safety and Health Administration with minimum service duration of 30 minutes and operate in the positive pressure mode only. At least 10 masks are readily available for fire brigade personnel. Also, a 1-hour supply of breathing air in extra bottles is located at the plant for each self-contained breathing apparatus. In addition, an onsite 6-hour supply of reserve air is provided for fire brigade personnel and is arranged to permit quick and complete replenishment of exhausted air supply bottles as they are returned.

All fire brigade equipment undergoes inspection and maintenance at least annually. Operation and maintenance manuals and maintenance reports for the fire brigade equipment are retained on file and available to the fire brigade. Thermal protective clothing and protective equipment are used and maintained in accordance with manufacturer's instructions and subject to a maintenance and inspection program.

Fire brigade members using self-contained breathing apparatus operate in teams of two or more who are in communication with each other through visual, audible, physical, safety guide rope, electronic, or other means to coordinate their activities and are in close proximity to each other to provide assistance in case of an emergency.

In addition to the appropriate protective clothing, fire brigade equipment provided includes fire hoses, the appropriate fire hose nozzles for electric plant usage, portable fire extinguishers, wheeled fire extinguishers, portable exhaust fans, portable emergency communication equipment, portable lighting, and fire fighting foam carts suitable for responding to fires involving hydrocarbon lube oil.

9.5.1.6.4 **Administrative Controls**

Administrative controls for the Fire Protection Program are implemented through plant administrative procedures. These procedures are available for review and inspection prior to implementation of the program.

These controls establish procedures to:

- Identify actions to be taken by an individual discovering a fire, such as notification to the Control Room, attempting to extinguish the fire, and actuation of local fire suppression systems;

- Define actions to be taken by the Control Room operator, such as sounding fire alarms, and notifying the Shift Supervisor of the type, size and location of the fire;
- Identify actions to be taken by the fire brigade after notification of a fire, including location to assemble, directions given by the fire brigade leader, the responsibilities of brigade members such as selection of fire fighting and protective equipment and use of preplanned strategies for fighting fires in specific areas;
- Identify actions to be taken by the Security force upon notification of a fire;
- Define the strategies established for fighting fires in safety-related areas and areas presenting a hazard to safety-related equipment, including the designation of the:
  - Fire hazards in each plant zone covered by a fire fighting procedure;
  - Fire extinguishers best suited for controlling fires with the combustible loadings of the zone and the nearest location of these extinguishers;
  - Most favorable direction from which to attack a fire in each area in view of the ventilation direction, access hallways, stairs, and doors that are most likely to be free of fire, and the best station of elevation for fighting the fire. All access and egress routes that involve locked doors are specifically identified in the procedure with the appropriate precautions and methods for access specified;
  - Plant systems that should be managed to reduce the damage potential during a local fire and the location of local and remote controls for such management (e.g., any hydraulic or electrical system in the zone covered by the specific fire fighting procedure that could increase the hazards in the area because of overpressurization or electrical hazards);
  - Vital heat-sensitive system components that need to be kept cool while fighting a local fire. Particularly hazardous combustibles that need cooling are designated;
  - Potential radiological and toxic hazards in fire zones;

- Ventilation system operation that ensures desired plant air distribution when the ventilation flow is modified for fire containment or smoke clearing operations;
- Operations requiring Control Room and Operating Supervisor coordination or authorization; and
- Instructions for plant operators and general plant personnel during a fire.

- Organize the fire brigade and assign special duties according to job title so that all fire fighting functions are covered by any complete shift personnel complement. These duties include command and control of the brigade, transporting fire suppression and support equipment to the fire scenes, applying the extinguishing agent to the fire, communication with the Control Room, and coordination with outside fire departments.
- Implement compensatory measures such as fire watches, temporary fire barriers, and backup suppression capability as required.
- Report fire events and fire protection deficiencies that meet the criteria of 10 CFR 50.72 and 10 CFR 50.73 to the NRC in accordance with the requirements of these regulations.
- Maintain records of Fire Protection Program related changes in the facility, changes in procedures, and tests and experiments that will not require prior NRC approval. These records will include the written evaluations that provide the bases for the determinations that the changes do not adversely affect safe-shutdown capability. The fire protection plan and its revisions will be retained until the license is terminated. Each superseded revision of the procedures will be retained for three years from the date it was superseded.

9.5.1.6.5 Control of Combustible Materials, Hazardous Materials and Ignition Sources

The control of combustible materials is defined by administrative procedures. These procedures impose the following controls:

- Prohibit the storage of combustible materials (including unused ion exchange resins) in areas that contain or expose safety-related equipment or establish designated storage areas with appropriate fire protection;

ENCLOSURE 6

Response to NRC RAI Letter 58

RAI 5342 Question 09.05.01-24

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

North Anna Unit 3

Dominion

Docket No. 52-017

RAI NO.: 5342 (RAI Letter 58)

SRP SECTION: 09.05.01 – FIRE PROTECTION PROGRAM

QUESTIONS for Fire Protection Team (SFPT)

DATE OF RAI ISSUE: 02/09/2011

QUESTION NO.: 09.05.01-24

Please edit the Section to indicate RG 1.189, Revision 2 as the latest revision. The applicant should also clarify that all referenced NFPA codes and standards are those that are in effect 180 days prior to the submittal of the COL application. (Table 9.5.1-1R, Position Number 1.8.6)

Dominion Response

The fire protection system description presented in North Anna Unit 3 FSAR Section 9.5.1 is the combination of the US-APWR DCD, Chapter 9, standard plant design (incorporated by reference) and the design of the plant-specific aspects of the system, as required by DCD COL item 9.5(2). The DCD specifies Regulatory Guide (RG) 1.189, Revision 1 as the applicable guidance document for the fire protection system (refer to DCD Reference 9.5.1-12). S-COLA FSAR Table 9.5.1-1R, Fire Protection Program Conformance with RG 1.189, Position Number 1.8.6, states that in order to retain consistency with the DCD, the fire protection equipment design and program requirements are in accordance with RG 1.189, Rev. 1. Commitments to two different revisions of the same RG for a single system would introduce the potential for confusion and errors in the North Anna Unit 3 licensing basis and the system design and operation, as well as with the implementation of the Fire Protection Program. This same basis is used in the determination that NFPA 804, 2006 edition is the appropriate edition for Unit 3. Additionally, RG 1.189 Revision 1 was the revision in effect 180 days prior to the initial North Anna Unit 3 COLA submittal.

For all other fire protection system codes and standards, Dominion is in conformance with the definition of "Code of Record" in RG 1.189, Revision 1, which states: "...The

Code of Record for the new fire protection system should be the edition that is in effect when the system is designed or when a commitment to add the system is made to the staff." The NFPA codes and standards identified in the North Anna Unit 3 FSAR comply with this definition. Except for NFPA 804 discussed above, the applicable editions of the NFPA codes and standards that were added to the S-COLA with the submission of Revision 3 of the FSAR in June 2010 are based on the editions that were current at that time.

Proposed COLA Revision

None.

ENCLOSURE 7

Response to NRC RAI Letter 58

RAI 5342 Question 09.05.01-25

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

North Anna Unit 3

Dominion

Docket No. 52-017

RAI NO.: 5342 (RAI Letter 58)

SRP SECTION: 09.05.01 – FIRE PROTECTION PROGRAM

QUESTIONS for Fire Protection Team (SFPT)

DATE OF RAI ISSUE: 02/09/2011

QUESTION NO.: 09.05.01-25

Please include a discussion regarding the modification procedures related to the fire protection program in the referenced subsection 9.5.1.6. (Table 9.5.1-1R, Position Number 2.1.2)

Dominion Response

The North Anna Unit 3 design control program will contain provisions to review proposed plant modifications for potential impact on the fire safety of the facility. If the potential for impact is identified, reviews are performed by the Fire Protection Engineering staff. These reviews consider the impact of the modification on fire protection programs and design features, including fire loads in affected plant areas, and the Fire Hazards Analysis. North Anna Unit 3 FSAR Section 9.5.1.6 will be revised to clarify this aspect of conformance with RG 1.189, Regulatory Position 2.1.2.

Proposed COLA Revision

FSAR Section 9.5.1.6 will be revised as indicated on the attached markup.

Markup of North Anna COLA

The attached markup represents Dominion's good faith effort to show how the COLA will be revised in a future COLA submittal in response to the subject RAI. However, the same COLA content may be impacted by revisions to the DCD, responses to other COLA RAIs, other COLA changes, plant design changes, editorial or typographical corrections, etc. As a result, the final COLA content that appears in a future submittal may be somewhat different than as presented herein.

performed and documented using a methodology similar to that described in NEI 00-01, "Guide for Post-Fire Safe-Shutdown Circuit Analysis," using as-built data. The final FHA will be performed in accordance with Table 13.4-201.

9.5.1.5 Instrumentation Requirements

NAPS COL 9.5(2) Replace the third paragraph in DCD Subsection 9.5.1.5 with the following:

The diesel-driven fire pump fuel storage tank is monitored for level.

NAPS COL 9.5(1) Add the following new subsections after DCD Subsection 9.5.1.5.

9.5.1.6 Fire Protection Program

The Unit 3 Fire Protection Program is established to ensure that a fire will not prevent safe shutdown of the plant and will not endanger the health and safety of the public. Fire protection at the plant uses a defense-in-depth concept that includes fire prevention, detection, control and extinguishing systems and equipment, administrative controls, procedures, trained personnel and the shutdown capability. The vice president North Anna 3 has overall responsibility for the fire protection program. During construction, a site construction FPP is in place that addresses the requirements of Chapter 11, NFPA 804. The ultimate responsibility for this initial FPP is assigned to the vice president North Anna 3 per Section 13.1.1.2. The elements of the Fire Protection Program necessary to support receipt and storage of fuel onsite for buildings storing new fuel and adjacent fire areas that could affect the fuel storage area are fully operational prior to receipt of new fuel. Other required elements of the Fire Protection Program described in this section are fully operational prior to initial fuel loading per Section 13.4.

The fire protection program includes fire prevention element reviews of proposed plant modifications which potentially have an impact on plant fire safety. A fire protection engineer (assisted by others as necessary) reviews these proposed plant modifications to ensure the following: fixed fire loads are not adversely increased beyond that accounted for in the fire hazards analysis, suitable fire protection features are available in the affected area, and the fire hazards analysis is updated accordingly.

ENCLOSURE 8

Response to NRC RAI Letter 58

RAI 5342 Question 09.05.01-26

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

North Anna Unit 3

Dominion

Docket No. 52-017

RAI NO.: 5342 (RAI Letter 58)

SRP SECTION: 09.05.01 – FIRE PROTECTION PROGRAM

QUESTIONS for Fire Protection Team (SFPT)

DATE OF RAI ISSUE: 02/09/2011

QUESTION NO.: 09.05.01-26

Please include a discussion regarding the availability of access keys for fire brigade leader in the referenced subsections 9.5.1.6.2.1 and 13.1.2.1.5. (Table 9.5.1-1R, Position Number 3.5.1)

Dominion Response

North Anna Unit 3 FSAR Table 9.5.1-1R, Fire Protection Program Conformance with RG 1.189, Position Number 3.5.1, states that Dominion will conform with the RG position regarding access keys. The referenced FSAR Sections 9.5.1.6.2.1 and 13.1.2.1.5, identified in the Remarks column of Table 9.5.1-1R, discuss the various aspects of the regulatory position, however, they do not currently address the subject of access keys. Therefore, FSAR Section 13.1.2.1.5 will be revised to clarify that the fire brigade leader has ready access to keys for any locked door.

Proposed COLA Revision

FSAR Section 13.1.2.1.5 will be revised as indicated on the attached markup.

Markup of North Anna COLA

The attached markup represents Dominion's good faith effort to show how the COLA will be revised in a future COLA submittal in response to the subject RAI. However, the same COLA content may be impacted by revisions to the DCD, responses to other COLA RAIs, other COLA changes, plant design changes, editorial or typographical corrections, etc. As a result, the final COLA content that appears in a future submittal may be somewhat different than as presented herein.

The minimum composition of an operating shift crew depends on the operational mode, as shown in Table 13.1-202. Reporting relationships for these positions are shown in Figure 13.1-203.

13.1.2.1.5 **Fire Brigade**

The plant is designed, and the fire brigade organized, to be self-sufficient with respect to fire fighting activities. The fire brigade is organized to deal with fires and related emergencies that could occur. It consists of a fire brigade leader and a sufficient number of team members to be consistent with the equipment that must be put in service during a fire emergency. The fire brigade leader has ready access to keys to any locked doors. A sufficient number of trained and physically qualified fire brigade members are available on site during each shift. The fire brigade consists of at least five members on each shift. Members of the fire brigade are knowledgeable of building layout and system design. The assigned fire brigade members for any shift do not include the operations shift manager nor any other members of the minimum shift operating crew necessary for safe shutdown of the unit, nor do they include any other personnel required for other essential functions during a fire emergency. Fire brigade members for a shift are designated in accordance with established procedures at the beginning of the shift. The fire brigade for Unit 3 does not include personnel assigned to Units 1 and 2.

The brigade leader and at least two brigade members have sufficient training in, or knowledge of, plant systems to understand the effects of fire and fire suppressants on safe-shutdown capability. The brigade leader has training or experience necessary to assess the potential safety consequences of a fire and advise control room personnel, as evidenced by possession of an operator's license or equivalent knowledge of plant systems. The qualification of fire brigade members includes an annual physical examination to determine their ability to perform strenuous firefighting activities.

13.1.3 Qualification of Nuclear Plant Personnel

NAPS COL 13.1(5)
NAPS COL 13.1(7)

Replace DCD section 13.1.3 with the following:

13.1.3.1 **Minimum Qualification Requirements**

Personnel of the technical support organization meet or exceed the applicable minimum qualifications of ANSI/ANS-3.1-1993 (Reference 13.1-201), as endorsed by Regulatory Guide 1.8. Exceptions