

NorthAnnaRAIsPEm Resource

From: Patel, Chandu
Sent: Tuesday, February 08, 2011 3:50 PM
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Subject: RAI Letter 55 (RAI 5232), Section 13.6, North Anna 3 COLA
Attachments: RAI 5232 Final.doc

By letter dated November 26, 2007, Dominion Virginia Power (Dominion) submitted a Combined License Application for North Anna, Unit 3, pursuant to Title 10 of the *Code of Regulations*, Part 52. The U.S. Nuclear Regulatory Commission (NRC) staff is performing a detailed review of this COLA.

The NRC staff has identified that additional information is needed to continue portions of the review and a Request for Additional Information (RAI), is enclosed. To support the review schedule, Dominion is requested to respond within 45 days of the date of this request. If the RAI response involves changes to the application documentation, Dominion is requested to include the associated revised documentation with the response.

Sincerely,
Chandu Patel
Lead project Manager for NA3 COLA

Hearing Identifier: NorthAnna3_eRAI
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2/8/2011
North Anna, Unit 3
Dominion
Docket No. 52-017
SRP Section: 13.06 - Physical Security
Application Section: NUREG-0800

QUESTIONS for Reactor Security Rulemaking and Licensing Branch (NSIR/DSP/RSRLB)

Request for Additional Information No. 5232

13.06-9

(U) Part 2, Section 13.6, Security (Pages 13-78 to 13-79): Provide design and performance requirements for physical protection systems that are outside the scope of the referenced US-APWR DC. Indicate reference to MHI Technical Report, UAP-SGI-8002, US-APWR - High Assurance Assessment Evaluation Report, and the specific sections of the MHI technical report that describes the design and performance requirements for physical protection systems (PA security access point, sally port and vehicle barrier systems location and configurations, road layout to reduce force of vehicle impact) that will be relied on to provide a high assurance of adequate protection.

(U) Regulatory Basis: Subpart C of Title 10 CFR (10 CFR) 52, § 52.79(a)(35)(i) and (ii) requires that information submitted for COL include how the applicant will meet the requirements of 10 CFR 73 and descriptions of implementation of the physical security plan. Title 10 CFR 73.55(b)(3)(i) requires applicant to ensure that the capabilities to detect, assess, interdict, and neutralize the DBT and maintain at all time such capabilities. The design of physical protection systems beyond the scope of the DC is required as a COL information item, No. COL 13.6(2). Title 10 CFR 52.80(a) requires the application to contain information for **ITA** and criteria necessary and sufficient to provide reasonable assurance that the facility has been constructed and will operate in conformity with the combined license, the provisions of the Act, and the Commission's rules and regulations. The descriptions of design and performance requirements establish the design basis for licensing, detailed of design, and criteria for verification by inspections, tests, and/or analyses. The descriptions for the designs and performance requirements for physical protection systems may conform to guidelines of Regulatory Guide 1.206 to meet the requirement of 10 CFR 52.80(a).

(U) Note: The information addressing specific details related to security features or providing security functions will be safeguards information (SGI) and should be marked and protected in accordance with 10 CFR 73.21. The applicant should portion mark text in the response to request for additional information 0(RAI) as appropriate to identify SGI (or Official-Use-Only Security-Related Information) that reveals the specific details of physical protection.

13.06-10

(U) Part 2, Section 13.6, 1, Physical Security - Combined License (Page 13-78): Indicate that security plans are submitted as Part **8** of the **COL** application.

(U) Regulatory Basis: Subpart C of Title 10 CFR (10 CFR) 52, § 52.79(a)(35)(i) and (ii) requires that information submitted for COL include how the applicant will meet the requirements of 10 CFR 73.

Title 10 CFR 52.6, Completeness and accuracy of information, requires information provided "shall be complete and accurate in all material respects."

The indication that Part 8 of the COL application contains security plans would clarify that security plans are not in a separate licensing document, but is part of the COL application.

13.06-11

(U) Part 2, Section 13.6.1, Physical Security- Combined License, Section 13.6.2.1, Barriers, Isolation Zones, and Controlled Access Point (Page 13-79): Indicate reference to MHI Technical Report UAP-SGI-08002, US-APWR - High Assurance Assessment Evaluation Report, for meeting COL Information Items 13.6(2) and 13.6(5).

(U) Regulatory Basis: Subpart C of Title 10 CFR (10 CFR) 52, § 52.79(a)(35)(i) and (ii) requires that information submitted for COL include how the applicant will meet the requirements of 10 CFR 73. Title 10 CFR 52.80(a) required the application to contain information for ITA and criteria necessary and sufficient to provide reasonable assurance that the facility has been constructed and will operate in conformity with the combined license, the provisions of the Act, and the Commission's rules and regulations. Applicant may conform to guidance of RG 1.206 in providing required descriptions of detailed design and performance requirements addressing COL Information Items No. 13.6(2) and No. 13.6(5).

(U) COL Information Item No. 13.6(2) states that "[t]he COL applicant is to develop and provide as part of its physical security plan site specific physical security features and capabilities, such as (i) the physical barrier surrounding the protected area boundary; (ii) the isolation zone in areas adjacent to the protected area boundary, (iii) security lighting, or use of low-light technology, for the isolation zone and protected area; (iv) the vehicle barrier system, (v) controlled access points to control entry of personnel, vehicles and materials into the protected area, (vi) the intrusion detection system, and (vii) the closed circuit television camera and video assessment systems to provide monitoring and assessment of the protected area perimeter." COL Information item No. 13.6(5) states that "[t]he COL applicant's physical security plan is to make provisions for radio or microwave transmitted two-way voice communication to communicate with the local law enforcement agencies." The design, performance requirements, and design basis for physical protection systems between the vital barriers and the PA and OCA are described in MHI Technical Report UAP-SGI-08002. Reference 13.06-201, security plans submitted under Part 8 of the COLA, contains limited descriptions for design and performance requirements for meeting regulatory requirements of 10 CFR 52.80(a).

13.06-12

(U) Part 2, Section 13.6.2.4, Security Lighting, Section 13.6.2.5, Security Communications Systems, and Section 13.6.2.6, Security Power (Pages 13-80 to 13-81): Indicate reference to MHI Technical Report UAP-SGI-08002, US-APWR - High Assurance Assessment Evaluation Report, that contains descriptions of design and performance requirements for security lighting.

(U) Regulatory Basis: Subpart C of Title 10 CFR (10 CFR) 52, § 52.79(a)(35)(i) and (ii) requires that information submitted for COL include how the applicant will meet the requirements of 10 CFR 73. Security systems design, performance requirements, and design basis for physical protection systems between the vital barriers and the PA and OCA, are described in MHI Technical Report

UAP-SGI-08002. The descriptions of design and performance requirements establish the design and basis for licensing and detailed design, which will be verified through ITA. The applicant may incorporate by reference the MHI technical report to establish the applicant's COL design and licensing basis and site specific requirements for meeting 10 CFR 52.80(a) requirements that the application contain information for ITA and criteria necessary and sufficient to provide reasonable assurance that the facility has been constructed and will operate in conformity with the combined license, the provisions of the Act, and the Commission's rules and regulations. The reference 13.06-201, security plans submitted under Part 8 of the COLA, contains limited descriptions for design meeting regulatory requirements of 10 CFR 52.80(a).

13.06-13

(U) Part 8, Physical Security Plan, Section 1.0, Introduction (Page 1): Since Dominion has submitted a combined corporate plan to include operating reactor sites, indicate reference to regulatory requirements set forth in 10 CFR 52.79(a)(35)i, 52.79(a)(36)(i) and (ii) (North Anna Unit 3) in addition to "10 CFR 50.34(c) and (d)," for the COL application.

(U) Regulatory Basis: Title 10 CFR 52.6, Completeness and accuracy of information, requires information provided "shall be complete and accurate in all material respects." Subpart C of 10 CFR 52 establishes the regulatory requirements for North Anna Unit 3 combined license application. Since this is a corporate security plan, the security plans must meet requirements of 10 CFR 50 and 52 and the reference to the requirements of 10 CFR 50 alone, as stated is not entirely accurate.

13.06-14

(U) Part 8, Physical Security Plan (PSP), Section 1.1, Facility Physical Layout (page 2): It is not acceptable to only reference the NAPS UFSAR, Early Site Permit (ESP), and Part 2, FSAR, Chapter 2 in this section. Provide clarification on whether Part 2, FSAR, Chapter 2, Site Characteristics, (i.e., Sections 2.1, Geography and Demography, 2.1.1, Site Location and Descriptions, 2.1.2, Exclusion Area Authority and Control, and 2.2, Nearby Industrial, Transportation, and Military Facilities), the ESP and the NAPS UFSAR is applicable in providing additional details of the descriptions and Figures 7, 9, 10, and maps of and drawings in relation to surrounding towns in PSP Section 1.1 for the meeting regulatory requirement of 10 CFR 73, Appendix C, Section II (B)(3)(b), Physical Layout. In addition, provide explanation as to why the detailed information (paragraph 2, from Revision 1) of this section was removed.

(U) Regulatory Basis: Title 10 CFR 73, Appendix C, Section II (B)(3)(b), Physical Layout, requires the safeguards contingency plan to "include a site map depicting the physical structures located on the site, including onsite independent spent fuel storage installations (if applicable), and a description of the structures depicted on the map. Plans must also include a descriptions and map of the site in relation to nearby towns, transportation routes (e.g., rail, water, and roads), pipelines, airports, hazardous material facilities, and pertinent environmental features that may have an effect upon coordination of response activities. Descriptions and maps must indicate main and alternate entry routes for law enforcement or other offsite response and support agencies and the location for marshaling and coordinating response activities.

13.06-15

(U) Part 8, Physical Security Plan, Section 4, Establishment of Security Organization (Page 4): 1)

Clarify and indicate that the contract services, the security organization contractor, plans to meet and implement all remaining requirements of 10 CFR 73 applicable to a power reactor licensee, in addition to the requirements "10 CFR 73.55(b)(1)(i) through (iv) and (b)(4)(i)" indicated in Section 4.

(U) Regulatory Basis: Title 10 CFR 52.6, Completeness and accuracy of information, requires information provided "shall be complete and accurate in all material respects."

The performance and prescriptive requirements for physical protection of power reactors are described in various sections of 10 CFR 73, in addition to requirements stated in 10 CFR 73.55. Clarification is needed to ensure that Dominion contracted service plans to meet and implement all applicable requirements of 10 CFR 73 and not only 10 CFR 73.55.

13.06-16

(U) Part 8, Physical Security Plan, Section 4.1, Security Organization Management (Page 4): Delete "Update" in "Updated Final Safety Analysis Report" and delete "U" from "UFSAR."

(U) Regulatory Basis: Title 10 CFR 52.6, Completeness and accuracy of information, requires information provided "shall be complete and accurate in all material respects."

The facility management organization is outlined in the Updated Final Safety Analysis Report, as titled in the COL application, Part 2. For the purpose of the COL application, FSAR is the appropriate and accurate reference to Part 2 of the application. Update to FSAR is performed after licensing and would be identified as "UFSAR".

13.06-17

(U) Part 8, Physical Security Plan, Section 11, Physical Barriers (Pages 8-15): Indicate reference to MHI Technical Report UAP-SGI-08002, Revision 1, US-APWR High Assurance Assessment Evaluation Report that addresses detailed descriptions of design and performance requirements of physical barriers - or - clarify what parts of the COL application addresses or incorporates the MHI Technical Report UAP-SGI-08002 that describes the details for the design of physical barriers described in Section 11.

(U) Regulatory Basis: Subpart C of Title 10 CFR (10 CFR) 52, § 52.79(a)(35)(i) and (ii) requires that information submitted for COL include how the applicant will meet the requirements of 10 CFR 73 and descriptions of implementation of the physical security plan. Title 10 CFR 73.55(b)(3)(i) requires applicant to provide capabilities to detect, assess, interdict, and neutralize the DBT and maintain at all time such capabilities. The design of physical protection systems beyond the scope of the DC is required as COL Information Item 13.6.1. Title 10 CFR 52.6, Completeness and accuracy of information, requires information provided "shall be complete and accurate in all material respects."

Title 10 CFR 52.80(a) required the application to contain information for ITA and criteria necessary and sufficient to provide reasonable assurance that the facility has been constructed and will operate in conformity with the combined license, the provisions of

the Act, and the Commission's rules and regulations. MHI Technical Report UAP-SGI-08002 R1, U.S. APWR - High Assurance Assessment Evaluation Report, addresses the detailed descriptions of design and performance requirements that are intended to conform to guidance of RG 1.206 for a **COL** application. The applicant did not incorporate by reference the portions of the MHI Technical Report UAP-SGI-08002, which contain the design of physical protection systems within the scope of the **COL** applicant.

13.06-18

- (U) Part 8, Physical Security Plan, Section 11.3, Protected Area Barriers (Page 13): Provide descriptions of the types of "interior security features" (i.e., engineered systems) for performing PA packages and material searches described in the Section 14.4.2 and personnel search described in Section 14.4.4. Specifically address whether descriptions for the maintenance of search equipment in Section 20.2, Search Equipment, are the types of interior security features that will be incorporated by design to meet requirements for search of packages, material, and persons.
- (U) Regulatory Basis: Subpart B of Title 10 CFR (10 CFR) 52, § 52.79(a)(35)(i) and (ii) requires that information submitted for COL include how the applicant will meet the requirements of 10 CFR 73 and descriptions of implementation of the physical security plan. Title 10 CFR 73.55(b)(3)(i) requires applicant to ensure that the capabilities to detect, assess, interdict, and neutralize the DBT. The description of interior security features must include, in general, the types of engineered systems or technologies that will be provided for search of packages, material, and personnel. Section 14.4.2, and 14.4.4 states that special purpose detector or equipment capable of detecting firearms, explosives, incendiary devices or other items used to commit radiological sabotage are provided to conduct searches, along with the option of conducting physical search.
- (U) Note: The information addressing specific details related to security features or providing security functions will be safeguards information (SGI) and should be marked and protected in accordance with 10 CFR 73.21. The applicant should portion mark text in the response to request for additional information (RAI) as appropriate to identify SGI (or Official-Use-Only Security-Related Information) that reveals the specific details of physical protection.

13.06-19

- (U) Part 8, Physical Security Plan, Sections 14.4 and 14.5, Vital Area Access Control (Page 24):

1) Clarify "or other types of active alarm system".

(U) Title 10 CFR 73.55(e)(9)(ii) The licensee shall protect all vital area access portals and vital area emergency exits with intrusion detection equipment and locking devices that allow rapid egress during an emergency and satisfy the vital area entry control requirements of this section.

(U) Title 10 CFR 52.6, Completeness and accuracy of information, requires information provided "shall be complete and accurate in all material respects."

(U) Note: The information addressing specific details related to security features or providing security functions will be safeguards information (SGI) and should be marked and protected in accordance with 10 CFR 73.21. The applicant should portion mark text in the response to request for additional information (RAI) as appropriate to identify SGI

(or Official-Use-Only Security-Related Information) that reveals the specific details of physical protection.

13.06-20

(U) Does the addition of the equipment found in the table in Appendix D to the North Anna 3 Supplement to the US-APWR Physical Security Element Review require any additional vital areas to what is shown in Appendix E to the US-APWR Physical Security Element Review rev 3 of the standard plant design? If so, revise the figures in Appendix E to the North Anna 3 Supplement to the US-APWR Physical Security Element Review to clearly identify these areas, also describe and document in section 5 of the North Anna 3 Supplement to the US-APWR High Assurance Evaluation Assessment, locking devices and intrusion detection equipment for vital area portal access and penetrations, consistent with the description provided in Section 5.2.2 of the US-APWR High Assurance Evaluation Assessment rev 2.

(U) Regulatory Basis: Subpart C of Title 10 CFR (10 CFR) 52, § 52.79(a)(35)(i) and (ii) requires that information submitted for COL include how the applicant will meet the requirements of 10 CFR 73 and descriptions of implementation of the physical security plan. Title 10 CFR 73.55(b)(3)(i) requires applicant to ensure that the capabilities to detect, assess, interdict, and neutralize the DBT and maintain at all time such capabilities. Title 10 CFR 73.55(b)(9)(ii) and (iii) requires openings in VA barriers to be alarmed for detection of unauthorized access.

The MHI Technical Report UAP-SGI-08002 technical contains descriptions design and performance requirements of physical protection systems that are described in Part 2, FSAR Chapter 13.6 and may be incorporated by reference.

(U) Note: The information addressing specific details related to security features or providing security functions will be safeguards information (SGI) and should be marked and protected in accordance with 10 CFR 73.21. The applicant should portion mark text in the response to request for additional information (RAI) as appropriate to identify SGI (or Official-Use-Only Security-Related Information) that reveals the specific details of physical protection.

13.06-21

(U) Part 8, Physical Security Plan, Section 14.5, Vital Area Access Control (Pages 26-27) and Physical Security Element Review: Physical Security Element Review 1) Clarify whether or not North Anna Unit 3 added vital areas. If so, state that in the addendum to the physical security element review.

2) If North Anna Unit 3 did add vital areas, what changes to the DCD (reactor design) was made to properly protect and monitor the vital areas.

(U) Regulatory Basis: Subpart C of Title 10 CFR (10 CFR) 52, § 52.79(a)(35)(i) and (ii) requires that information submitted for COL include how the applicant will meet the requirements of 10 CFR 73 and descriptions of implementation of the physical security plan. Title 10 CFR 73.55(b)(3)(i) requires applicant to ensure that the capabilities to detect, assess, interdict, and neutralize the DBT and maintain at all time such capabilities. Title 10 CFR 52.6, Completeness and accuracy of information, requires information provided "shall be complete and accurate in all material respects."

(U) Regulatory Basis: Subpart C of Title 10 CFR (10 CFR) 52, § 52.79(a)(35)(i) and (ii) requires that information submitted for COL include how the applicant will meet the requirements of 10 CFR 73 and descriptions of implementation of the physical security plan. Title 10 CFR 73.55(b)(3)(i) requires applicant to ensure that the capabilities to detect, assess, interdict, and neutralize the DBT and maintain at all times such capabilities. Title 10 CFR 52.6, Completeness and accuracy of information, requires information provided "shall be complete and accurate in all material respects." The DCD, referenced technical report, MHI Technical Report UAP-SGI-08001 identifies vital areas in Appendix E. Appendix E figures appear to identify additional vital areas that are not described in Section 14.5. The vital areas described in the PSP and those described and shown on figures of the DCD referenced MHI Technical Report UAP-SGI-08001 must be consistent.

13.06-22

(U) Part 8, Physical Security Plan, Section 18. Response Requirements (Page 35) and Safeguards Contingency Plan, Section 8, Protective Strategy:

1) It is difficult to determine the site specifics for the proposed North Anna Unit 3 from the operating corporate sites language (e.g. North Anna Units 1 and 2, Millstone, etc.). In order to complete this review for North Anna Unit 3, separate the corporate sites' language from the proposed language meant to be used for North Anna Unit 3. Make these changes in all appropriate sections of the PSP, T&QP and SCP.

2) Clarify whether the number of "additional armed security officers (ASO) on site that are available at all times to respond" is dedicated to North Anna Unit 3 - or - whether they are available for all reactors, operating North Anna Units 1 and 2 and North Anna Unit 3. If the indicated ASOs are available for protection of all reactor units, address the following: (a) indicate the distribution of ASOs between the new and operating units under full power operations, refueling outage, and under heightened threat environment of imminent attack; (b) describe how the responses of ASOs were considered based on distributions of ASOs between operating and new unit; (c) describe how the ASOs will be deployed and how engineered systems relied on to implement response to deny adversaries access to the VA; (d) discuss whether the ASOs response include pursuit of adversaries; and (e) describe measures considered to address friendly fire in implementing pursuit portion of the strategy. If the number of ASOs are dedicated to Unit 3 only, (f) provide supplemental information to MHI Technical Report UAP-SGI-08002, R2 on how they are applied or supplement the numbers of responders and responses to postulated bounding adversaries scenarios described in MHI Technical Report; and (g) what engineered physical protection systems or features (e.g., fighting positions and strategic placements) are relied and technical basis that provides tactical advantages for the ASO.

(U) Regulatory Basis: Subpart C of Title 10 CFR (10 CFR) 52, § 52.79(a)(35)(i) and (ii) requires that information submitted for COL include how the applicant will meet the requirements of 10 CFR 73 and descriptions of implementation of the physical security plan.

Title 10 CFR 73.55(b)(3)(i) requires applicant to ensure that the capabilities to detect, assess, interdict, and neutralize the DBT and maintain at all times such capabilities. Title 10 CFR 73.55(b)(ii) requires defense-in-depth through integration of engineered and administrative controls for effective physical protection.

(U) Title 10 CFR 52.6, Completeness and accuracy of information, requires information provided "shall be complete and accurate in all material respects."

13.06-23

(U) Part 8 Physical Security Plan, Section 14.5, Vital Access Controls, (Pages 24-27),

(U) Address how North Anna Unit #3, spent fuel pool, is protected as a vital area.

(U)Regulatory Basis: 10 CFR 73.55(e)(9)(v). At a minimum, the following shall be considered vital areas: (A) The reactor control room; (B) The spent fuel pool; (C) The central alarm station;

13.06-24

(U) Part 8 Physical Security Plan, Figure 23. It is shown on Figure 23 the locations of the BREs for North Anna Units 1 and 2. Provide justification for not having the locations of the BREs for North Anna Unit 3.

(U) Title 10 CFR 52.6, Completeness and accuracy of information, requires information provided "shall be complete and accurate in all material respects."

(U) Title 10 CFR (10 CFR) 52, § 52.79(a)(35)(i) and (ii) requires that information submitted for combined license (COL) include how the applicant will meet the requirements of 10 CFR 73 and descriptions of implementation of the physical security plan.

13.06-25

(U) Part 8 Physical Security Plan, Section 11.2.1, Protection Against... (Page 9, 1st paragraph, 4th sentence) and Section 8 last paragraph,(pages C-25 thru C-26). Explain why these statements were made in these sections, specifically the last 10 words of the 1st paragraph, 4th sentence of Section 11.2.1, and the last sentence of page C-25.

(U) Title 10 CFR 52.6, Completeness and accuracy of information, requires information provided "shall be complete and accurate in all material respects."

(U) Title 10 CFR 52, § 52.79(a)(35)(i) and (ii) requires that information submitted for combined license (COL) include how the applicant will meet the requirements of 10 CFR 73 and descriptions of implementation of the physical security plan.

13.06-26

(U) Part 8 Physical Security Plan, Section 15.5.1, Owner Controlled Area (OCA) Surveillance and Response

(U) It is difficult to determine the site specifics for the proposed North Anna Unit 3 from the operating corporate sites language (e.g. North Anna Units 1 and 2, Millstone, etc.). In order to complete this

review for the proposed North Anna Unit 3, separate the corporate sites' language from the proposed language meant to be used for North Anna Unit 3. Make these changes in all appropriate sections of the PSP, T&QP and SCP.

- (U) Title 10 CFR 73.55(b)(3)(i) requires applicant to ensure that the capabilities to detect, assess, interdict, and neutralize the DBT and maintain at all time such capabilities. Title 10 CFR 73.55(b)(ii) requires defense-in-depth through integration of engineered and administrative controls for effective physical protection.
- (U) Title 10 CFR 52.6, Completeness and accuracy of information, requires information provided "shall be complete and accurate in all material respects."

13.06-27

- (U) Part 8 Physical Security Plan, Section 11.3, Protected Area Barriers,(Page 13, last paragraph). The bracketed section of NEI 03-12 Revision 6 speaks on this language only if it applies to the site. If so, provide the description the bracketed text asks for.
- (U) Title 10 CFR 52.6, Completeness and accuracy of information, requires information provided "shall be complete and accurate in all material respects."
- (U) Title 10 CFR (10 CFR) 52, § 52.79(a)(35)(i) and (ii) requires that information submitted for combined license (COL) include how the applicant will meet the requirements of 10 CFR 73 and descriptions of implementation of the physical security plan.

13.06-28

- (U)** Part 2 - FSAR, Table 1.8-1R, Significant Site-Specific Interfaces with the Standard US-APWR Design, Interface No. 9 and No. 10 (Page 1-65): North Anna 3 is requested to provide reference to Mitsubishi Heavy Industries (MHI) Technical Report UAP-SGI-08002 R2, U.S. APWR - High Assurance Assessment Evaluation Report that contains descriptions of design and performance requirements for physical protection systems that are a part of the combined license (COL) design and licensing basis for meeting 10 CFR 52.79(a)(35), 52.80(a) and 10 CFR 73.
- (U)Regulatory Basis: Subpart C of Title 10 CFR (10 CFR) 52, § 52.79(a)(35)(i) and (ii) requires that information submitted for COL include how the applicant will meet the requirements of 10 CFR 73 and descriptions of implementation of the physical security plan. Title 10 CFR 73.55(b)(3)(i) requires applicant to provide capabilities to detect, assess, interdict, and neutralize the design basis threat (DBT) and maintain at all time such capabilities. The design of physical protection systems beyond the scope of the design certification (DC) is required as COL Information Item 13.6.1. Title 10 CFR 52.80(a) requires the application to contain information for inspections, tests, and analyses (ITA) and criteria necessary and sufficient to provide reasonable assurance that the facility has been constructed and will operate in conformity with the combined license, the provisions of the Act, and the Commission's rules and regulations. The COL applicant must address interfaces and COL information items for the design of physical protection systems outside the scope of the US-APWR DC.
- (U) Interface No. 9 states that "[s]ite security/surveillance systems, such as surveillance cameras, video displays, security detection sensors, communications, access control, etc. Interface is with the

standard portion of the site communications system," are identified in the design control document (DCD) as items outside the scope of the standard design. The applicant may conform to guidance of Regulatory Guide (RG) 1.206 for meeting and providing appropriate descriptions for design. The applicant did not reference MHI Technical Report UAP-SGI-08002 which contains descriptions of design and licensing bases for physical protection systems for the COL application. Part 8 of the COL application did not provide sufficient descriptions for the detail of design for physical protection systems conforming to guidance of RG 1.206 for a COL application.

- (U) Interface No.10 states that "Landscaping features, roadways, walkways, security fences and barricades, and traffic control barriers, etc., that are not part of the standard US-APWR building designs," and "A site arrangement plan is provided in Figure 1.2-1R which shows site-specific features and improvements, as well as the standard US-APWR buildings and features." Figure 1.2-1R, North Anna 3 Site Plan (Sheets 1 and 2) and Figures appearing in MHI Technical Report UAP-SGI-08002 R2 did not provide details, locations, or design for physical protection systems (fences, delays, and barriers) in sufficient design detail that conforms with guidance of RG 1.206 for a COL application.

13.06-29

- (U) Part 2, Section 13.5.1.2, Preparation of Procedure, Plant Security Procedures (page 13.5-6) and Section 13.6, Security (1st paragraph, Page 13.6-1): Describe the management controls for ensuring "information concerning specific design features and administrative provisions of the security plan" will be protected to limit access to only individuals with "a need-to-know basis." Specifically, describe the requirements for management and administrative controls (e.g., policies, processes, and procedures) that will be established for protection of safeguards information in accordance with requirements of 10 CFR 73.21 during constructions and operations of North Anna Unit 3.

- (U) Regulatory Basis: Subpart C of Title 10 CFR (10 CFR) 52, § 52.79(a)(35)(i) and (ii) requires that information submitted for COL include how the applicant will meet the requirements of 10 CFR 73. Security systems and procedures that are considered safeguards information are required to be protected in accordance with requirements of 10 CFR 73.21. Security plans submitted under Part 8 of the COLA did not describe how program will be established to meet requirements of 10 CFR 73.21.

As an applicant, North Anna has established an acceptable management and administrative controls for meeting 10 CFR 73.21 for preparing COL application. However, the COL application did not include plans to apply similar or appropriate management controls required for construction (e.g., information on security systems, features, and hardware design, construction, and installation) and operations phases of North Anna Unit 3.

13.06-30

- (U) Part 8, Physical Security Plan, Section 11.2, Vehicle Barriers (Page 9): Indicate references to documents (e.g., MHI UAP-SGI-08002 or others) containing the analyzed results, analysis assumptions, and methods or approaches used, and technical basis for determining adequate stand off distance(s) for the vehicle bomb threats described in Sections 11.2.1 and 11.2.2.

- (U) Regulatory Basis: Subpart B of Title 10 CFR (10 CFR) 52, § 52.79(a)(35)(i) and (ii) requires that information submitted for COL include how the applicant will meet the requirements of 10 CFR 73

and descriptions of implementation of the physical security plan. Title 10 CFR 73.55(b)(3)(i) requires applicant to ensure that the capabilities to detect, assess, interdict, and neutralize the DBT.

- (U) Title 10 CFR 52.6, Completeness and accuracy of information, requires information provided "shall be complete and accurate in all material respects."

The applicant states that "[a] site-specific analysis has been conducted and physical barriers are [will be] used where appropriate in the OCA, PA, and VAs to perform any or more of the following functions. (7) protect the personnel, systems, and equipment needed to prevent . . . sabotage against a vehicle bomb..." Section 11.2 does not describe the minimum required stand off distance(s) for the design of the VBS or provide the supporting licensing basis for adequate minimum stand off distance(s) that protecting against the DBT vehicle bomb(s). The reference to technical report and specific blast analysis that contains the technical basis and a summary of results supporting the applicant statements of adequate protection against vehicle bombs may be addressed in Part 2, FSAR Chapter 13.6 and/or incorporated by reference.

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- (U) Part 8, Physical Security Plan, Section 11.3, Protected Area Barriers (Page 11): Provide descriptions of design requirements of the physical protection systems that will provide continuity of the detection of penetrations above the Vehicle Access Facility, Guard House, and Administration Building and the associated building penetrations (including doors, HVAC, and windows) of those buildings that serve as portions of the PA barrier. Include in the response; clarify whether fencing, as described is a design requirement on the roof of the ACB.

- (U) Regulatory Basis: Subpart B of Title 10 CFR (10 CFR) 52, § 52.79(a)(35)(i) and (ii) requires that information submitted for COL include how the applicant will meet the requirements of 10 CFR 73 and descriptions of implementation of the physical security plan. Title 10 CFR 73.55(b)(3)(i) requires applicant to ensure that the capabilities to detect, assess, interdict, and neutralize the DBT.

The design of the above buildings serves as part of the PA barrier must include capabilities for detection. The design of the buildings did not describe capabilities of detecting attempted penetrations of the portion of the structure that will serve the PA barrier.

- (U) Note: The information addressing specific details related to security features or providing security functions will be safeguards information (SGI) and should be marked and protected in accordance with 10 CFR 73.21. The applicant should portion mark text in the response to request for additional information (RAI) as appropriate to identify SGI (or Official-Use-Only Security-Related Information) that reveals the specific details of physical protection.

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- (U) Supplement to US-APWR High Assurance Evaluation Assessment Rev 0, dated April 2010, Figure 1, and Evaluation of CAS/SAS Design for No Single Act, page 2, item number 2: What is the basis for the distances cited to the Figure 1 drawing, Rev 0, and the conclusions on CAS/SAS distances?

- (U) Regulatory Basis: Title 10 CFR 73.55(i)(4)(i) Both alarm stations required by paragraph (i)(2) of this section must be designed and equipped to ensure that a single act, in accordance with the design basis threat of radiological sabotage defined in 73.1(a)(1), cannot disable both alarm stations.

(U) Supplement to USAPWR High Assurance Evaluation Assessment. The North Anna 3 application departs from the USAPWR HAE, but the application does not contain supplemental information required for the review. The staff requests that Dominion provide, on the docket, information addressing the following:

a. **(U)** Describe defense-in-depth for security response (internal and/or external) by addressing uncertainties and additional pathways not currently considered in pathways and scenarios postulated and analyzed. Specifically, evaluate and describe the defense-in-depth protection that include pathways (and scenarios) which bounds explosive breaching of structural walls or other penetrations and ascending/descending available internal or external vertical pathways (e.g., ventilation ducts, utility/maintenance tunnels, and elevator shafts, etc.), that are other than normally access pathways (i.e., doorways and stairs), to provide assurance that the internal and external security responses planned will provide the defense-in-depth protection that reasonably bounds all credible pathways within the DBT adversarial characteristics and capabilities.

b. **(U)** Analyze fully and document the defense-in-depth protection for the reliability and availability of opportunities for security responders to interdict and neutralize adversaries to deny access at the nuclear island and structures along all credible pathways between PA and plant structures. Specifically address the pathways using a structure [intentionally not stated] between the PA and nuclear island that provides cover and concealment and a direct access to the exterior wall of a vital area containing safety functions and controls. Indicate how opportunities to interdict or neutralize adversaries will be integrated with physical protection systems into the current configuration for pre-deployed security responders indicated and described in Appendix A of UAP-SGI-08002 that will provide a physical protection system designed to achieve a high assurance of protection against the DBT.

c. **(U)** Describe the engineered systems required and credited for detection, assessments, and proposed defensive positions (e.g., BRE or BBRE) to enable and provide opportunities for protected security responders to interdict and neutralize adversaries at the perimeter of the nuclear island and structures. Describe the reliability and availability of overlapping fields of fire to provide adequate coverage the pathways and the perimeter of the nuclear island and structures for interdiction and neutralization of adversarial tasks (e.g., interrupt adversarial tasks explosive breach walls or penetrations, ascending of walls, etc.) or neutralization of adversaries that demonstrate a defense-in-depth in protection.

d. **(U)** Describe the deployment of all armed responders and armed security officers described in Section 18, "Response Requirements," of the PSP (Page 35), Part 8 of the COL application. Provide information supporting the planned deployment of responders for a high assurance of protection in the representations of protection for the North Anna Unit 3 found in Appendix A of UAP-SGI-08002. Describe the integration of engineered physical protection systems provided to protect responders, including delays of adversaries by design, for opportunities to interdict and neutralize adversaries. Describe

clearly the technical bases for how the numbers of responders indicated in Section 18 provides adequate protection and defense-in-depth.

e. **(U)** Describe how task times (initiation of alarm, assessment of threat, and communications to sector or zone of intrusion, task time required to acquire target) and the available windows of opportunities to engage adversaries to demonstrate that the planned configuration of BRE/BBRE currently described in Appendix A provides the reliability and availability of security responders needed to interdict or neutralize adversaries between the PA and structures (i.e., prior to cover and concealment or lost of lines of sight). Describe the assumptions of reliability and availability of security responders to interdict or neutralize adversaries, based on assumptions of maximum distance of fire (indicated in UAP-SGI-08002), analyzed response task times, and expected results from standard training and qualification and maintaining proficiency in use of weapons (i.e., Training and Qualification Plan – Part 8 of the COLA), assumed adversarial travel time, and the resulting windows of opportunities (time and lines of sight) for security responders from the BRE/BBRE configuration indicated in Appendix A of UAP-SGI-08002.

(U) Regulatory Basis: Subpart C of Title 10 CFR (10 CFR) 52, § 52.79(a)(35)(i), (ii), and (iv) requires that information submitted for combined license (COL) include how the applicant will meet the requirements of 10 CFR 73 and descriptions of implementation of the physical security plan and safeguards contingency plan. Title 10 CFR 73.55(2) requires protection against the DBT of radiological sabotage as stated in § 73.1. Title 10 CFR 73.55(b)(3)(i) requires applicant to ensure that the capabilities to detect, assess, interdict, and neutralize the DBT and maintain at all time such capabilities. Title 10 CFR 73.55(3)(ii) and 73.55(b)(4) require applicant to provide defense-in-depth, and to analyze and identify site specific conditions, including target sets, that may affect the specific measures needed to implement the requirements of 10 CFR 73 and account for conditions in the design of the physical protection program. Title 10 CFR 52.80(a) requires the application to contain information for ITA and criteria necessary and sufficient to provide reasonable assurance that the facility has been constructed and will operate in conformity with the combined license, the provisions of the Act, and the Commission's rules and regulations.