ArevaEPRDCPEm Resource

From: WELLS Russell D (AREVA NP INC) [Russell.Wells@areva.com]
Sent: Wednesday, October 28, 2009 6:43 PM
To: Tesfaye, Getachew
Cc: Pederson Ronda M (AREVA NP INC); BENNETT Kathy A (OFR) (AREVA NP INC); DELANO Karen V (AREVA NP INC)
Subject: Response to U.S. EPR Design Certification Application RAI No. 246, FSAR Ch 13, Supplement 1
Attachments: RAI 246 Supplement 1 Response US EPR DC.pdf

Getachew,

AREVA NP Inc. (AREVA NP) provided a schedule for RAI No. 246 on July 31, 2009. The attached file, "RAI 246 Supplement 1 Response US EPR DC.pdf," provides technically correct and complete responses to the remaining 92 questions, as committed.

Appended to this file are affected pages of the U.S. EPR Final Safety Analysis Report in redline-strikeout format which support the responses to RAI 246, Supplement 1, Questions 13.06-28, 13.06-29, 13.06-30, and 13.06-78.

The following table indicates the respective pages in the response document, "RAI 246 Supplement 1 Response US EPR DC.pdf," that contain AREVA NP's response to the subject questions.

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RAI 246 — 13.06-79	63	63
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RAI 246 — 13.06-82	68	68
RAI 246 — 13.06-83	69	73
RAI 246 — 13.06-84	74	74
RAI 246 — 13.06-85	75	75
RAI 246 — 13.06-86	76	77
RAI 246 — 13.06-87	78	78
RAI 246 — 13.06-88	79	79
RAI 246 — 13.06-89	80	80
RAI 246 — 13.06-90	81	81
RAI 246 — 13.06-91	82	83
RAI 246 — 13.06-92	84	84
RAI 246 — 13.06-93	85	86
RAI 246 — 13.06-94	87	87
RAI 246 — 13.06-95	88	88
RAI 246 — 13.06-96	89	89
RAI 246 — 13.06-97	90	90
RAI 246 — 13.06-98	91	91
RAI 246 — 13.06-99	92	92
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RAI 246 — 13.06-101	94	94
RAI 246 — 13.06-102	95	95
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RAI 246 — 13.06-107	100	100
RAI 246 — 13.06-108	101	101
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This concludes the formal AREVA NP response to RAI 246, and there are no questions from this RAI for which AREVA NP has not provided responses.

Sincerely,

(Russ Wells on behalf of)
Ronda Pederson
ronda.pederson@areva.com
Licensing Manager, U.S. EPR Design Certification
New Plants Deployment
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From: Pederson Ronda M (AREVA NP INC)
Sent: Friday, July 31, 2009 6:04 PM
To: 'Tesfaye, Getachew'
Cc: BENNETT Kathy A (OFR) (AREVA NP INC); DELANO Karen V (AREVA NP INC); DUNCAN Leslie E (AREVA NP INC)
Subject: Response to U.S. EPR Design Certification Application RAI No. 246, FSAR Ch. 13

Getachew,

Attached please find AREVA NP Inc.'s response to the subject request for additional information (RAI). The attached file, "RAI 246 Response US EPR DC.pdf," provides a schedule since technically correct and complete responses to the 92 questions are not provided.

The following table indicates the respective pages in the response document, "RAI 246 Response US EPR DC.pdf," that contain AREVA NP's response to the subject questions.

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RAI 246 — 13.06-35	9	9
RAI 246 — 13.06-36	10	10
RAI 246 — 13.06-37	11	11
RAI 246 — 13.06-38	12	12
RAI 246 — 13.06-39	13	13
RAI 246 — 13.06-40	14	14
RAI 246 — 13.06-41	15	15
RAI 246 — 13.06-42	16	16
RAI 246 — 13.06-43	17	17
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RAI 246 — 13.06-48	22	22
RAI 246 — 13.06-49	23	23
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RAI 246 — 13.06-61	35	35
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RAI 246 — 13.06-64	38	38
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RAI 246 — 13.06-66	40	40
RAI 246 — 13.06-67	41	41
RAI 246 — 13.06-68	42	42
RAI 246 — 13.06-69	43	43
RAI 246 — 13.06-70	44	44
RAI 246 — 13.06-71	45	45
RAI 246 — 13.06-72	46	46
RAI 246 — 13.06-73	47	47
RAI 246 — 13.06-74	48	48
RAI 246 — 13.06-75	49	49
RAI 246 — 13.06-76	50	50
RAI 246 — 13.06-77	51	51
RAI 246 — 13.06-78	52	52

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RAI 246 — 13.06-80	54	54
RAI 246 — 13.06-81	55	55
RAI 246 — 13.06-82	56	56
RAI 246 — 13.06-83	57	58
RAI 246 — 13.06-84	59	59
RAI 246 — 13.06-85	60	60
RAI 246 — 13.06-86	61	62
RAI 246 — 13.06-87	63	63
RAI 246 — 13.06-88	64	64
RAI 246 — 13.06-89	65	65
RAI 246 — 13.06-90	66	66
RAI 246 — 13.06-91	67	67
RAI 246 — 13.06-92	68	68
RAI 246 — 13.06-93	69	69
RAI 246 — 13.06-94	70	70
RAI 246 — 13.06-95	71	71
RAI 246 — 13.06-96	72	72
RAI 246 — 13.06-97	73	73
RAI 246 — 13.06-98	74	74
RAI 246 — 13.06-99	75	75
RAI 246 — 13.06-100	76	76
RAI 246 — 13.06-101	77	77
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RAI 246 — 13.06-104	80	80
RAI 246 — 13.06-105	81	81
RAI 246 — 13.06-106	82	82
RAI 246 — 13.06-107	83	83
RAI 246 — 13.06-108	84	84
RAI 246 — 13.06-109	85	85
RAI 246 — 13.06-110	86	86
RAI 246 — 13.06-111	87	87
RAI 246 — 13.06-112	88	88
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RAI 246 — 13.06-117	93	93
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A complete answer is not provided for the 92 questions. The schedule for technically correct and complete responses to these questions is provided below.

Question #	**Response Date**
RAI 246 — 13.06-28	October 28, 2009

RAI 246 — 13.06-29	October 28, 2009
RAI 246 — 13.06-30	October 28, 2009
RAI 246 — 13.06-31	October 28, 2009
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RAI 246 — 13.06-33	October 28, 2009
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RAI 246 — 13.06-35	October 28, 2009
RAI 246 — 13.06-36	October 28, 2009
RAI 246 — 13.06-37	October 28, 2009
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RAI 246 — 13.06-39	October 28, 2009
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RAI 246 — 13.06-41	October 28, 2009
RAI 246 — 13.06-42	October 28, 2009
RAI 246 — 13.06-43	October 28, 2009
RAI 246 — 13.06-44	October 28, 2009
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RAI 246 — 13.06-46	October 28, 2009
RAI 246 — 13.06-47	October 28, 2009
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RAI 246 — 13.06-51	October 28, 2009
RAI 246 — 13.06-52	October 28, 2009
RAI 246 — 13.06-53	October 28, 2009
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RAI 246 — 13.06-73	October 28, 2009
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RAI 246 — 13.06-76	October 28, 2009
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RAI 246 — 13.06-93	October 28, 2009
RAI 246 — 13.06-94	October 28, 2009
RAI 246 — 13.06-95	October 28, 2009
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RAI 246 — 13.06-106	October 28, 2009
RAI 246 — 13.06-107	October 28, 2009
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RAI 246 — 13.06-109	October 28, 2009
RAI 246 — 13.06-110	October 28, 2009
RAI 246 — 13.06-111	October 28, 2009
RAI 246 — 13.06-112	October 28, 2009
RAI 246 — 13.06-113	October 28, 2009
RAI 246 — 13.06-114	October 28, 2009
RAI 246 — 13.06-115	October 28, 2009
RAI 246 — 13.06-116	October 28, 2009
RAI 246 — 13.06-117	October 28, 2009
RAI 246 — 13.06-118	October 28, 2009
RAI 246 — 13.06-119	October 28, 2009

Sincerely,

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From: Tesfaye, Getachew [mailto:Getachew.Tesfaye@nrc.gov]
Sent: Friday, July 10, 2009 6:22 PM
To: ZZ-DL-A-USEPR-DL
Cc: Lee, Pete; Huyck, Doug; Miernicki, Michael; Colaccino, Joseph; ArevaEPRDCPEm Resource
Subject: U.S. EPR Design Certification Application RAI No. 246 (2890, 2935),FSAR Ch. 13

Attached please find the subject requests for additional information (RAI). A draft of the RAI was provided to you on June 15, 2009, and discussed with your staff on July 2, 2009. No changes were made to the Draft RAI Questions as a result of that discussion. The schedule we have established for review of your application assumes technically correct and complete responses within 30 days of receipt of RAIs. For any RAIs that cannot be answered within 30 days, it is expected that a date for receipt of this information will be provided to the staff within the 30 day period so that the staff can assess how this information will impact the published schedule.

Thanks,
Getachew Tesfaye
Sr. Project Manager
NRO/DNRL/NARP
(301) 415-3361

Hearing Identifier: AREVA_EPR_DC_RAIs
Email Number: 916

Mail Envelope Properties (1F1CC1BBDC66B842A46CAC03D6B1CD41022268F6)

Subject: Response to U.S. EPR Design Certification Application RAI No. 246, FSAR Ch 13, Supplement 1
Sent Date: 10/28/2009 6:42:49 PM
Received Date: 10/28/2009 6:43:46 PM
From: WELLS Russell D (AREVA NP INC)

Created By: Russell.Wells@areva.com

Recipients:
"Pederson Ronda M (AREVA NP INC)" <Ronda.Pederson@areva.com>
Tracking Status: None
"BENNETT Kathy A (OFR) (AREVA NP INC)" <Kathy.Bennett@areva.com>
Tracking Status: None
"DELANO Karen V (AREVA NP INC)" <Karen.Delano@areva.com>
Tracking Status: None
"Tesfaye, Getachew" <Getachew.Tesfaye@nrc.gov>
Tracking Status: None

Post Office: AUSLYNCMX02.adom.ad.corp

Files	**Size**	**Date & Time**
MESSAGE	13862	10/28/2009 6:43:46 PM
RAI 246 Supplement 1 Response US EPR DC.pdf	417670	

Options
Priority: Standard
Return Notification: No
Reply Requested: No
Sensitivity: Normal
Expiration Date:
Recipients Received:

Response to

Request for Additional Information No. 246, Supplement 1

7/10/2009

U.S. EPR Standard Design Certification
AREVA NP Inc.
Docket No. 52-020
SRP Section: 13.06 - Physical Security
Application Section: Tier 1 Chapter 3, Tier 2 Chapter 13.06, Technical Report ANP-10295 and ANP-10296, Response to Phase 1 RAI

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

Question 13.06-28:

(U) Tier 2, Chapter 13, Section 13.6, Security, Revision 1 – Interim (Paragraph 1, Page 13.6-1): Indicate reference to Technical Report ANP-10295, "U.S. EPR Security Features," that provides safeguards and security related information that describe security design bases and requirements for systems and components incorporated into the US-EPR standard design (i.e., as stated in AREVA response to RAI No. 92, Supplement 1, Question 13.06-02).

(U) Regulatory Basis: Subpart B of Title 10 CFR (10 CFR) 52, § 52.47, requires that information submitted for a design certification (DC) must include performance requirements and design information sufficiently detailed to permit the preparation of acceptance and inspection requirements by the NRC, and procurement specifications and construction and installation specifications by an applicant. Title 10 CFR 52.48 requires the applications filed will be reviewed for compliance with the standards set out in 10 CFR Part 73. Title 10 CFR 73.55(b) requires a licensee provides a high assurance of protection against the Design Basis Threat (DBT). AREVA response to RAI No. 92, Supplement 1, Question 13.06-02, states that "Technical Report ANP-10295, "U.S. EPR Security Features," (SGI) and Technical Report ANP-10296, "U.S. EPR Design Features that Enhance Security," provides additional security detail beyond that of the U.S. EPR FSAR Tier 2, Section 13.6. Reference to ANP-10295 in Section 13.6 is required to provide complete and accurate information of design and technical bases for certification.

Response to Question 13.06-28:

U.S. EPR FSAR Tier 2, Section 13.6 will be revised to add the following statement:

> "Technical Report ANP-10295, "U.S. EPR Security Features," provides safeguards and security related information that describe security design bases and requirements for systems and components incorporated into the U.S. EPR standard design."

U.S. EPR FSAR Tier 2, Section 13.8 and Tier 1, Table 1.6-1 will also be revised to add the security technical reports ANP-10295 and ANP-10296.

FSAR Impact:

U.S. EPR FSAR Tier 2, Sections 13.6 and 13.8 will be revised as described in the response and indicated on the enclosed markup. U.S. EPR FSAR Tier 2, Table 1.6-1 will be revised as described in the response and indicated on the enclosed markup.

Question 13.06-29:

(U) Tier 2, Chapter 13, Section 13.6, Security, Revision 1 – Interim (Paragraph 2, Page 13.6-1): Delete reference to NRC Orders issued to current operating nuclear power plants and restate as appropriate reference to Title 10 CFR 73 as regulatory requirements for physical security system design of US-EPR standard design.

(U) Regulatory Basis: NRC order dated April 29, 2003 supplementing the adversarial characteristics has been codified in revision to 10 CFR 73.1 and others NRC orders requiring enhancements to security after the events of September 11, 2001 have been captured in revision to power reactor requirements in Title 10 CFR 73. New reactor design vendors and COL applicants are not subject to NRC orders issued after events of September 11, 2001 and therefore not applicable as regulatory requirements.

Response to Question 13.06-29:

U.S. EPR FSAR Tier 2, Section 13.6 will be revised to delete the phrase “the portions of the NRC orders to the current operating plants that impact U.S. EPR design.”

FSAR Impact:

U.S. EPR FSAR Tier 2, Section 13.6 will be revised as described in the response and indicated on the enclosed markup.

Question 13.06-30:

(U) Tier 2, Chapter 13, Section 13.6.1, Protected Area and Vital Areas (Item No.6, Page 13-6-2): Indicate and describe requirements for the Secondary Alarm Station (SAS) to be equal and redundant in design and performance requirements for physical barrier and security functions of the Central Alarm Station (CAS).

(U) Regulatory Basis: Subpart B of Title 10 CFR (10 CFR) 52, § 52.47, requires that information submitted for a design certification (DC) must include performance requirements and design information sufficiently detailed to permit the preparation of acceptance and inspection requirements by the NRC, and procurement specifications and construction and installation specifications by an applicant. Title 10 CFR 52.48 requires the applications filed will be reviewed for compliance with the standards set out in 10 CFR Part 73. Title 10 CFR 73.55(b) requires a licensee provides a high assurance of protection against the Design Basis Threat (DBT). Title 10 CFR 73.55(i)(4)(iii) requires equal and redundant CAS and SAS.

Response to Question 13.06-30:

U.S. EPR FSAR Tier 2, Section 13.6.1, Item 6 will be revised to add the secondary alarm station.

U.S. EPR FSAR Tier 2, Section 13.6.1 will be revised to add Item 8, which states:

> "The secondary alarm station will be functionally equivalent to the central alarm station. The central alarm station and the secondary alarm station will be protected, designed, and equipped to equivalent standards."

FSAR Impact:

U.S. EPR FSAR Tier 2, Section 13.6 will be revised as described in the response and indicated on the enclosed markup.

Question 13.06-31:

(U) Tier 2, Chapter 13, Section 13.6.5, Security Communications System, Revision 1 – Interim (Page 13.6-3): Describe the design requirements for maintaining two-way communications capabilities, including withstanding of the DBT adversaries capabilities to disrupt communications. Discuss how reliability and availability of two-way communications between security's command and control and the deployed or fixed security responders will be maintained. Describe the communications capabilities required between security responders and how the security system design will ensure that they are also maintained during postulated adversarial attacks.

(U) Regulatory Basis: Same as previously stated (i.e., Subpart B of Title 10 CFR (10 CFR) 52, § 52.47, 10 CFR 52.48, 10 CFR Part 73, and 10 CFR 73.55(b)). Title 10 CFR 73.55(j)(3) requires that all on-duty security force personnel shall be capable of maintaining continuous communications with an individual in each alarm station. The US-EPR standard design includes security communications systems. AREVA assumes security response upon detection and assessment of adversaries. Reliable and available communications is required to initiate and implement effective response, deploy or re-deploy responders, and to obtain offsite assistance.

(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 information (RAI) as appropriate to identify SGI (or security-related information) that reveals the specific details of security features incorporated in the US-EPR design. The RAI responses supplementing the DC Tier 1 document must be publicly available.

Response to Question 13.06-31:

The level of detail requested is more appropriately addressed in the site-specific Security Assessment where safeguards information can be discussed, especially considering discussions of countermeasures to disruptive adversary capabilities. Security communications capabilities are addressed in the site-specific Security Assessment.

FSAR Impact:

The U.S. EPR FSAR will not be changed as a result of this question.

Question 13.06-32:

(U) Executive Summary (Page i of ANP-10295, Rev. 0): Indicate, in the summary of combined license (COL) applicant, the responsibility for the applicant to describe design and performance requirements for the following: perimeter intrusion detection at the protected area (PA), PA barriers for delay; PA isolation zones for assessment and interdiction; delay barriers between the PA and Vital Area (VA) boundaries to increase adversarial tasks times; PA personnel and vehicle access controls systems; and passive and active vehicle barrier system.

(U) Regulatory Basis: Same as previously stated (i.e., Subpart B of Title 10 CFR (10 CFR) 52, § 52.47, 10 CFR 52.48, 10 CFR Part 73, and 10 CFR 73.55(b)). Additional information is needed to clearly establish the scope of standard US-EPR design certification and what will be provided by a COL applicant. The design of a physical protection system for interior intrusion detection, alarm, and assessment are within the scope of the DC. The physical security systems providing security functions between the VA and the PA (and owner control area) boundaries are outside of the scope of the DC.

(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 information (RAI) as appropriate to identify SGI (or security-related information) that reveals the specific details of security features incorporated in the US-EPR design. The RAI responses supplementing the DC Tier 1 document must be publicly available.

Response to Question 13.06-32:

The change requested in the question has been included in the Executive Summary of ANP-10295, Revision 1.

FSAR Impact:

The U.S. EPR FSAR will not be changed as a result of this question.

Technical Report Impact:

ANP-10295 “Security Design Features Technical Report,” Revision 1 incorporates the changes as described in the response.

Question 13.06-33:

(U) Executive Summary (Page i of ANP-10295, Rev. 0): Clarify whether the COL applicant's responsibility for "surveillance camera placement" include the placement of internal and external cameras or only the external surveillance cameras. Describe the design and performance requirements for the interior intrusion detection, alarm, and assessment systems that are within the vital island and vital structures.

(U) Regulatory Basis: Same as previously stated (i.e., Subpart B of Title 10 CFR (10 CFR) 52, § 52.47, 10 CFR 52.48, 10 CFR Part 73, and 10 CFR 73.55(b)). Additional information is needed to clearly establish what is within the standard US-EPR design and what will be provided by a COL applicant. The design of physical protection system within the US-EPR vital island and structures, such as interior intrusion detection, alarm, and assessment systems, are within the scope of the DC.

(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 information (RAI) as appropriate to identify SGI (or security-related information) that reveals the specific details of security features incorporated in the US-EPR design. The RAI responses supplementing the DC Tier 1 document must be publicly available.

Response to Question 13.06-33:

The COL applicant is responsible for placement of internal and external surveillance equipment. The external surveillance is the responsibility of the COL applicant because the surveillance system must conform to the site-specific layout and terrain. ANP-10295, Section 8 has been revised to state that design and performance requirements are addressed in the site-specific Security Assessment.

FSAR Impact:

The U.S. EPR FSAR will not be changed as a result of this question.

Technical Report Impact:

ANP-10295 "Security Design Features Technical Report," Revision 1 incorporates the changes as described in the response.

Question 13.06-34:

(U) Section 1.0, Vital Equipment and Vital Area (Page 1-1, 2nd paragraph of ANP-10295, Rev. 0): Correct text to indicate "Secondary Alarm Station" in lieu of "Secondary Power Supply" for the nomenclature "SAS."

(U) Regulatory Basis: Same as previously stated (i.e., Subpart B of Title 10 CFR (10 CFR) 52, § 52.47, 10 CFR 52.48, 10 CFR Part 73, and 10 CFR 73.55(b)). Complete and accurate information is required of application for meeting regulatory requirements. Nomenclature indicated on Page viii of ANP-10295 identifies "SAS" as the secondary alarm station.

Response to Question 13.06-34:

ANP-10295, Section 1.0 was revised to correct the wording described in the question.

FSAR Impact:

The U.S. EPR FSAR will not be changed as a result of this question.

Technical Report Impact:

ANP-10295 "Security Design Features Technical Report," Revision 1 incorporates the changes as described in the response.

Question 13.06-35:

(U) Section 1.0, Vital Equipment and Vital Area (Pages 1-2 and 1-3) and Section 7.0, Delay Features (Page 7-1 of ANP-10295, Rev. 0): Provide clarification on how the US-EPR VA barriers (vital island and structure walls, floors, and roofs) are credited to provide security functions of delaying access. Specifically, describe the assumptions and specify minimum delays (e.g., time in seconds, minutes, or hours) associated with walls, floors, and roofs, and harden exterior doors. Also, describe design of hardening protection that provides delay at other openings (e.g., heating, ventilation, and air conditional (HVAC), utilities, etc.) on the VA barriers that are not discussed in Section 7.0. Clearly state the assumptions for the postulated adversary task times required to mechanical or explosive breaching (i.e., delay) for each structural component of the VA barrier, based on the full capabilities of the adversary characteristics of the DBT.

(U) Regulatory Basis: Same as previously stated (i.e., Subpart B of Title 10 CFR (10 CFR) 52, § 52.47, 10 CFR 52.48, 10 CFR Part 73, and 10 CFR 73.55(b)). Title 10 CFR 73.55(e)(3)(i) establish requirements for physical barriers. The VA barriers are relied on as physical barriers that provide security functions of delay or denying access. Section 7 of ANP-10295 only described design and performance requirements for exterior doors, interior doors, and large equipment hatches to protect openings. Other openings, such as HVAC, piping, or utilities penetrating walls, floors, or roofs are not addressed. The descriptions and technical bases for the security design and performance requirements of all structural components of the VA barriers provide security functions of delay are within the scope of the DC. *Sandia National Laboratories, Sandia Report 2001-2168, "Technology Transfer Manual, Access Delay – Volume 1" is an NRC accepted reference for characterizing security delay of building structures, assemblies, and systems components.*

(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 information (RAI) as appropriate to identify SGI (or security-related information) that reveals the specific details of security features incorporated in the US-EPR design. The RAI responses supplementing the DC Tier 1 document must be publicly available.

Response to Question 13.06-35:

ANP-10295, Section 1 has been revised to clarify that openings in the vital area boundary have access limiting features. The discussion of the delay capabilities in ANP-10295, Section 7 has been revised to discuss assumed delay timing for doors, walls, and other openings.

FSAR Impact:

The U.S. EPR FSAR will not be changed as a result of this question.

Technical Report Impact:

ANP-10295 "Security Design Features Technical Report," Revision 1 incorporates the changes as described in the response.

Question 13.06-36:

(U) Section 1.0, Vital Equipment and Vital Area (Pages 1-2 and 1-3, 3rd paragraph, 1st paragraph of ANP-10295, Rev. 0): Provide clarification of the statement "consistency with the Life Safety Code to the maximum extent possible." Specifically, indicate whether the security design that minimized the number doors and "clustering of entrances" for access to the VA had adequately considered safety/security interface and the proposed configuration do not impact egress requirements (e.g., travel distances, minimum number of exits, and the remoteness of exits for life safety) of applicable building code. Confirm fire protection concerns or issues have been identified and address appropriately the US-EPR design and evaluated appropriately in a fire hazards analysis.

(U) Regulatory Basis: Same as previously stated (i.e., Subpart B of Title 10 CFR (10 CFR) 52, § 52.47, 10 CFR 52.48, 10 CFR Part 73, 10 CFR 73.55(b), and 10 CFR 73.58). Complete and accurate information is needed in the application for meeting regulatory requirements. The US-EPR standard design incorporating security should not negatively impact requirements for life safety, as acknowledged by AREVA. The indication of "maximum extent possible" implies that some building code or life safety requirements may not be met. The 10 CFR 73.58 requires that safety and security interface to be considered and addressed.

Response to Question 13.06-36:

The fire protection and life safety aspects of the configuration are analyzed under the fire protection system in U.S. EPR FSAR Tier 2, Section 9.5.1 and in the associated fire protection analysis in U.S. EPR FSAR Tier 2, Appendix 9A.

ANP-10295, Section 1.0 has been revised to delete "to the maximum extent possible" from the statement "consistency with the Life Safety Code to the maximum extent possible."

FSAR Impact:

The U.S. EPR FSAR will not be changed as a result of this question.

Technical Report Impact:

ANP-10295 "Security Design Features Technical Report," Revision 1 incorporates the changes as described in the response.

Question 13.06-37:

(U) Section 1.0, Vital Equipment and Vital Area (Page 1-3, 3rd paragraph of ANP-10295, Rev. 0): Describe design and performance requirements for security communication system and demonstrate assurance of system reliability and availability by design. Specifically, describe how communications system design will ensure continuity of two-way communications onsite, within the vital island and structures and off-site at all times.

(U) Regulatory Basis: Same as previously stated (i.e., Subpart B of Title 10 CFR (10 CFR) 52, § 52.47, 10 CFR 52.48, 10 CFR Part 73, and 10 CFR 73.55(b)). The descriptions of security features incorporated in the standard US-EPR standard design provides the technical basis for determining adequacy of a physical protection system that will protect against the DBT and meeting regulatory requirements. Title 10 CFR 73.55(j) requires a reliable and available security communications system for command and control and implementing security response. An adequate description of design and performance requirements provides the technical basis for required security systems ITAAC. Descriptions of the design and performance requirements of security communications systems within the nuclear island and structures are within the scope of the DC.

(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 information (RAI) as appropriate to identify SGI (or security-related information) that reveals the specific details of security features incorporated in the US-EPR design. The RAI responses supplementing the DC Tier 1 document must be publicly available.

Response to Question 13.06-37:

The COL applicant is responsible for the security communications system. ANP-10295, Section 1 has been revised to clarify that design and performance requirements are addressed in the site-specific Security Assessment.

FSAR Impact:

The U.S. EPR FSAR will not be changed as a result of this question.

Technical Report Impact:

ANP-10295 “Security Design Features Technical Report,” Revision 1 incorporates the changes as described in the response.

Question 13.06-38:

(U) Section 2.0, Security Power System (Page 2-1, 1st bullet of ANP-10295, Rev. 0): Provide clarification on whether the redundancy requirements for the design of diesel generator backup secondary power supply (2nd bullet on page 2-1) is applicable to design of uninterruptible power supplies (UPS). Clearly indicate the equal and redundancy of design of the CAS and SAS for required security functions in 1st bullet.

(U) Regulatory Basis: Same as previously stated (i.e., Subpart B of Title 10 CFR (10 CFR) 52, § 52.47, 10 CFR 52.48, 10 CFR Part 73, and 10 CFR 73.55(b)). Title 10 CFR 73.55(i)(4)(iii) requires equal and redundant CAS and SAS. The descriptions of security features incorporated in the standard US-EPR design provides the technical basis for determining adequacy of a physical protection system that will protect against the DBT and meeting regulatory requirements. A reliable and available engineered secondary power supply system ensures the continuity of critical security systems functions indicated on page 2-2 of ANP-10295. The availability and redundancy of UPS ensures that there would be no interruption or loss of security functions during transition from primary to secondary power supplies.

(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 information (RAI) as appropriate to identify SGI (or security-related information) that reveals the specific details of security features incorporated in the US-EPR design. The RAI responses supplementing the DC Tier 1 document must be publicly available.

Response to Question 13.06-38:

ANP-10295, Section 2.0 has been revised to clarify the items identified in the question.

FSAR Impact:

The U.S. EPR FSAR will not be changed as a result of this question.

Technical Report Impact:

ANP-10295 “Security Design Features Technical Report,” Revision 1 incorporates the changes as described in the response.

Question 13.06-39:

(U) Section 2.0, Security Power System (Page 2-1, last bullet of ANP-10295, Rev. 0): Describe the technical basis and assumptions for the minimum capacity of diesel fuel (duration for required design load) indicated in the last bullet on Page 2-1. Discuss whether AREVA considered operator responses in postulated security events and the durations that may be needed to restore security or establish security contingency measures for plant operators to safely move about to take required operator actions (i.e., replenish diesel fuel).

(U) Regulatory Basis: Same as previously stated (i.e., Subpart B of Title 10 CFR (10 CFR) 52, § 52.47, 10 CFR 52.48, 10 CFR Part 73, and 10 CFR 73.55(b)). The capacity of diesel fuel for the minimum duration indicated appears reasonable for restoring loss of primary power or provides sufficient time to take actions to replenish diesel fuel storage tank under non-security events. It is unclear whether AREVA considered the time to be bounding for actions that may be required for securing plant area due to uncertainties from a security event.

(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 information (RAI) as appropriate to identify SGI (or security-related information) that reveals the specific details of security features incorporated in the US-EPR design. The RAI responses supplementing the DC Tier 1 document must be publicly available.

Response to Question 13.06-39:

ANP-10295, Section 2.1 under “Reliability” has been revised to provide additional explanation of the backup power source(s) to the Security Power System. No operator action is required to support security contingency actions. Operator actions to support plant systems are listed in ANP-10295, Appendix C. Where credited system operation actions require operator movement, the action and the timeframe for the action is listed within the operator action discussion in ANP-10295, Appendix C.

FSAR Impact:

The U.S. EPR FSAR will not be changed as a result of this question.

Technical Report Impact:

ANP-10295 “Security Design Features Technical Report,” Revision 1 incorporates the changes as described in the response.

Question 13.06-40:

(U) Section 2.0, Security Power System (Page 2-1, last bullet of ANP-10295, Rev. 0): Clarify whether the design and performance requirements for diesel secondary power supply described include system power demand for continuation of security functions described on Page 2-2 and the estimated requirements for security lighting on pages 2-3 to 2-4 of ANP-10295.

(U) Regulatory Basis: Same as previously stated (i.e., Subpart B of Title 10 CFR (10 CFR) 52, § 52.47, 10 CFR 52.48, 10 CFR Part 73, and 10 CFR 73.55(b)). The US-EPR standard design describes design requirements for secondary power supply. Additional information is needed to understand the design basis for a reliable secondary power supply and its capabilities of meeting demand of security systems to perform their intended functions for the duration indicated.

(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 information (RAI) as appropriate to identify SGI (or security-related information) that reveals the specific details of security features incorporated in the US-EPR design. The RAI responses supplementing the DC Tier 1 document must be publicly available.

Response to Question 13.06-40:

ANP-10295, Section 2.1 under “Reliability” has been revised to provide additional explanation of the backup power sources to the Security Power System.

FSAR Impact:

The U.S. EPR FSAR will not be changed as a result of this question.

Technical Report Impact:

ANP-10295 “Security Design Features Technical Report,” Revision 1 incorporates the changes as described in the response.

Question 13.06-41:

(U) Section 2.2, Security Lighting (Page 2-3 of ANP-10295, Rev. 0): Provide clarification on whether the AREVA, for US-EPR DC, or applicant for the COLA will address the application of fixed engineered system(s) applying low-light technology (e.g., low-light, thermal, infrared, or other imaging camera for assessment and target discrimination) as acceptable alternative for meeting minimum lighting of 0.2 foot candle/ft^2. If the US-EPR standard design includes the use of low-light technology, provide design and performance requirements and planned configurations of plant security lighting system and low-light technology that is within the scope of the DC.

(U) Regulatory Basis: Same as previously stated (i.e., Subpart B of Title 10 CFR (10 CFR) 52, § 52.47, 10 CFR 52.48, 10 CFR Part 73, 10 CFR 73.55(b), and 10 CFR 73.55(i)(6)(i) through (iii)). Low-light technology may be applied as an alternative to lighting density of 0.2 foot candle/ft^2. Clarification is needed on whether the alternative acceptable technology may be applied to design of physical protection system. If low-light technology will be applied, additional information will be needed to establish clearly the design and performance requirements for applications within the scope of the US-EPR DC and to adequately describe required security system ITAAC. No further design descriptions are needed if AREVA does not plan to apply low-light technology in its design of a physical protection system.

(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 information (RAI) as appropriate to identify SGI (or security-related information) that reveals the specific details of security features incorporated in the US-EPR design. The RAI responses supplementing the DC Tier 1 document must be publicly available.

Response to Question 13.06-41:

The COL applicant is responsible for the security lighting. ANP-10295, Section 2.2 has been revised to clarify that design and performance requirements are addressed in the site-specific Security Assessment.

FSAR Impact:

The U.S. EPR FSAR will not be changed as a result of this question.

Technical Report Impact:

ANP-10295 “Security Design Features Technical Report,” Revision 1 incorporates the changes as described in the response.

Question 13.06-42:

(U) Section 2.2.1, Exterior Sizing Assumptions, and Sections 2.2.1 and 2.2.2, Exterior Sizing Assumptions and Interior Sizing Assumptions, (Pages 2-3 and 2-4 of ANP-10295, Rev. 0): Clearly indicate the plant areas and vital structures that are included in the "standard foot print" for external (3,000,000 sq. ft.) and internal (750,000 sq. ft.) areas used for estimating electric power demand for security lighting. The response should also include: (a) clarification on whether the external foot print includes the areas of the isolation zone and the PA or the standard foot print extends out to include the areas enclosed by a vehicle barrier system (VBS) for security lighting and; (b) identify the vital structures that are included in the internal foot print of 750,000 sq. ft. used to estimate interior security lighting power supply.

(U) Regulatory Basis: Same as previously stated (i.e., Subpart B of Title 10 CFR (10 CFR) 52, § 52.47, 10 CFR 52.48, 10 CFR Part 73, 10 CFR 73.55(b), and 10 CFR 73.55(i)(6)(i) through (iii)). The descriptions of security features incorporated in the standard US-EPR design provides the technical basis for determining adequacy of a physical protection system that will protect against the DBT and meeting regulatory requirements. AREVA estimated power supply needed for security lighting that allows for security assessment and response (i.e., security responders acquiring targets). Clarification is needed on what vital structures and whether all levels within the structures were considered in establishing the standard footprint for estimating an adequate secondary power supply for meeting security lighting requirements. Similarly, clearly state what plant area is include in the determining a standard external foot print area.

(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 information (RAI) as appropriate to identify SGI (or security-related information) that reveals the specific details of security features incorporated in the US-EPR design. The RAI responses supplementing the DC Tier 1 document must be publicly available.

Response to Question 13.06-42:

The COL applicant is responsible for the exterior security lighting. ANP-10295, Section 2.2 has been revised to clarify that design and performance requirements are addressed in the site-specific Security Assessment.

ANP-10295, Section 2.2.1 has been revised to add Figure 2-1 to illustrate the anticipated lighting for the standard footprint that was used as input in sizing the security power system.

ANP-10295 has been revised to add Appendix I to identify the interior areas to be lighted by the security power system.

FSAR Impact:

The U.S. EPR FSAR will not be changed as a result of this question.

Technical Report Impact:

ANP-10295 “Security Design Features Technical Report,” Revision 1 incorporates the changes as described in the response.

Question 13.06-43:

(U) Section 2.2, Security Lighting (Pages 2-3 to 2-4 of ANP-10295): Provide clarification on whether the assumptions and design requirements for interior and exterior lighting described in this section would be included or applied as the design and performance requirements of the reliable diesel backup power supply described in Section 2.1.

(U) Regulatory Basis: Same as previously stated (i.e., Subpart B of Title 10 CFR (10 CFR) 52, § 52.47, 10 CFR 52.48, 10 CFR Part 73, and 10 CFR 73.55(b)). The descriptions of security features incorporated in the standard US-EPR design provides the technical basis for determining adequacy of a physical protection system that will protect against the DBT and meeting regulatory requirements. A reliable and available secondary power supply system ensures the continuity of critical security functions indicated on page 2-2 of ANP-10295.

(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 information (RAI) as appropriate to identify SGI (or security-related information) that reveals the specific details of security features incorporated in the US-EPR design. The RAI responses supplementing the DC Tier 1 document must be publicly available.

Response to Question 13.06-43:

ANP 10295, Section 2.1 under “Reliability” has been revised to provide additional explanation of the backup power sources to the Security Power System to support security lighting.

FSAR Impact:

The U.S. EPR FSAR will not be changed as a result of this question.

Technical Report Impact:

ANP-10295 “Security Design Features Technical Report,” Revision 1 incorporates the changes as described in the response.

Question 13.06-44:

(U) Section 3.0, Bullet Resistant Walls, Floors, and Ceilings, Sections 3.1 to 3.3 (Pages 3-1 to 3.6 of ANP-10295, Rev. 0): Describe how the US-EPR standard design will address continuity of a bullet-resistance barrier for doors, HVAC, or other openings into Main Control Room (MCR), CAS, and SAS. Clearly indicate design and performance requirements for the level of bullet resistant of doors indicated Figures 3-1, 3-2, and 3-4 and describe how all openings on the walls, floors, or ceilings would be protected to provide ballistic resistance enclosure.

(U) Regulatory Basis: Same as previously stated (i.e., Subpart B of Title 10 CFR (10 CFR) 52, § 52.47, 10 CFR 52.48, 10 CFR Part 73, and 10 CFR 73.55(b)). Title 10 CFR 73.55(e)(5) requires bullet resistant physical barriers for protection of MCR, CAS, SAS and last access control points of the PA. The US-EPR design provides the technical bases for determining adequacy of a physical protection system that will protect against the DBT and meeting regulatory requirements. AREVA describe capabilities of walls, floors, and ceilings constructions that would provide bullet-resistance physical barrier protecting occupants and performance of required safety or security functions. Doors and HVAC penetrations through walls that provide pathways for bullet trajectory must be considered in designing a bullet-resistance enclosures that meet requirements of 10 CFR 73.55(e)(5).

(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 information (RAI) as appropriate to identify SGI (or security-related information) that reveals the specific details of security features incorporated in the US-EPR design. The RAI responses supplementing the DC Tier 1 document must be publicly available.

Response to Question 13.06-44:

ANP-10295, Section 3.1 has been revised to provide additional description of the bullet resistance methods applied to openings into the main control room.

ANP-10295, Figure 3-1, Figure 3-2, and Figure 3-3 have been revised to note the bullet resistant rating of identified openings.

FSAR Impact:

The U.S. EPR FSAR will not be changed as a result of this question.

Technical Report Impact:

ANP-10295 “Security Design Features Technical Report,” Revision 1 incorporates the changes as described in the response.

Question 13.06-45:

(U) Section 4.0, Vehicle Barrier System (Pages 4.7, 1st sentences/bullets of ANP-10295, Rev. 0): State clearly that the VBS protection of the list of structures indicated on page 4-7 includes protection of all safety-related structures, systems, and components (SSC) and risk-significant non-safety systems (as applicable) within the vital island and vital structures. Clarify whether all safety-related SSC and risk-significant non-safety systems identified in the preliminary target sets for core damage, loss of spent fuel cooling, and security systems providing functions identified on Pages F-8 and F-9 are protected by the placement of the VBS at the minimum safe standoff distances (MSSD) or required standoff distance (RSD) indicated. Indicate clearly that the minimum RSD stated in this section is sufficient to prevent a vehicle bomb from causing damage to the structure, and that residual blast effects (e.g., air-blast leaking in to the structure through failed doors or openings) would not cause damage to the safety-related SSC necessary for preventing radiological sabotage or loss of spent fuel pool cooling.

(U) Regulatory Basis: Same as previously stated (i.e., Subpart B of Title 10 CFR (10 CFR) 52, § 52.47, 10 CFR 52.48, 10 CFR Part 73, and 10 CFR 73.55(b)). Title 10 CFR 73.55(e)(10)(i)(A) require the design, construction, installation, and maintenance of a VBS at a stand-off distance adequate to protect personnel, equipment, and systems necessary to prevent radiological sabotage. The US-EPR design provides the technical bases for determining adequacy of a physical protection system that will protect against the DBT and meeting regulatory requirements. AREVA discussed protection of structures against blast overpressures, but did not discuss or state clearly the survivability of equipment for safety-related and risk-significant non-safety systems and the continued availability of systems or safety and security functions within the structures. It was not clear whether they were considered or evaluated. The protection against DBT vehicle bombs is required to demonstrate adequate protection against radiological sabotage, including the loss of spent fuel pool cooling.

(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 information (RAI) as appropriate to identify SGI (or security-related information) that reveals the specific details of security features incorporated in the US-EPR design. The RAI responses supplementing the DC Tier 1 document must be publicly available.

Response to Question 13.06-45:

ANP-10295, Section 4.0 has been revised to clarify equipment contained in the structures listed. ANP-10295, Section 4.4 has been added to address air infiltration.

FSAR Impact:

The U.S. EPR FSAR will not be changed as a result of this question.

Technical Report Impact:

ANP-10295 “Security Design Features Technical Report,” Revision 1 incorporates the changes as described in the response.

Question 13.06-46:

whether the VBS system and analysis described in this section is bounding for the DBT land and waterborne vehicle bomb assault in accordance with 10 CFR 73.1(a)(1)(E)(iii) and (iv) and considered each methods of delivery described in RG 5.69, "Guidance for the Application of the Radiological Sabotage Design-Basis Threat in the Design, Development, and Implementation of a Physical Security Program the Meets 10 CFR 73.55 requirements." Describe, if appropriate, the design and performance requirements of waterborne vehicle barrier system that would provide protection against waterborne vehicle bomb assault in accordance with of 10 CFR 73.1(a)(1)(E)(iv). Also discuss analysis of, assumptions, and summary results for the survivability security systems or continuity of functions, including security response capabilities (e.g., CAS, SAS, Ready Room, DP Positions, etc.) for postulated DBT bombs scenarios.

(U) Regulatory Basis: Same as previously stated (i.e., Subpart B of Title 10 CFR (10 CFR) 52, § 52.47, 10 CFR 52.48, 10 CFR Part 73, and 10 CFR 73.55(b)). Title 10 CFR 73.55(e)(10)(i)(A) require the design, construction, installation, and maintenance of a VBS at a stand-off distance adequate to protect personnel, equipment, and systems necessary to prevent radiological sabotage. Section 4.0 describes plans for a VBS located at a minimum RSD for physical protection against the 10 CFR 73.1 required DBT and associate characteristics for land vehicle bombs. No discussion was provided of evaluation of waterborne vehicle bomb. The AREVA states, in Section 4.4, identified specific standoff distances required for the vital island (or nuclear island) and structures. However, the additional information is needed to describe assumptions and technical bases for determining adequacy and the applicability of resulting RSD indicated.

(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 information (RAI) as appropriate to identify SGI (or security-related information) that reveals the specific details of security features incorporated in the US-EPR design. The RAI responses supplementing the DC Tier 1 document must be publicly available.

Response to Question 13.06-46:

ANP-10295, Section 4.0 has been revised to clarify blast calculations bound both land and waterborne threats and consider the delivery methods of Regulatory Guide 5.69, "Guidance for the Application of the Radiological Sabotage Design-Basis Threat in the Design, Development, and Implementation of a Physical Security Program the Meets 10 CFR 73.55 requirements."

FSAR Impact:

The U.S. EPR FSAR will not be changed as a result of this question.

Technical Report Impact:

ANP-10295 "Security Design Features Technical Report," Revision 1 incorporates the changes as described in the response.

Question 13.06-47:

(U) Section 4.0, Vehicle Barrier System (Pages 4-7, 1st sentences/bullets of ANP-10295, Rev. 0): Provide clarification on whether the VBS provides protection of the Reactor Building. Indicate clearly the minimum RSD for the Reactor Building.

(U) Regulatory Basis: Same as previously stated (i.e., Subpart B of Title 10 CFR (10 CFR) 52, § 52.47, 10 CFR 52.48, 10 CFR Part 73, and 10 CFR 73.55(b)). Title 10 CFR 73.55(e)(10)(i)(A) require the design, construction, installation, and maintenance of a VBS at a stand-off distance adequate to protect personnel, equipment, and systems necessary to prevent radiological sabotage. Section 4.0 describes minimum RSD for vital structures that will provide protection against the DBT vehicle bombs. Clarification is required for what is the minimum RSD distance needed for the Reactor Building, which is identified as part of the vital island/area in Section 1 of the ANP-19025. Reactor containment and reactor shield building are structures of the reactor building.

(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 information (RAI) as appropriate to identify SGI (or security-related information) that reveals the specific details of security features incorporated in the US-EPR design. The RAI responses supplementing the DC Tier 1 document must be publicly available.

Response to Question 13.06-47:

The U.S. EPR vehicle barrier system (VBS) provides a high level of blast protection against the NRC design basis threat (DBT) with no damage to the Reactor Containment Building itself. This is based on calculation of the minimum required standoff distance (RSD) for the Reactor Containment Building measured from the outer surface of the containment shield structure cylindrical shell (see Figure 3-3 in ANP-10295, Revision 1).

The Reactor Containment Building is fully enclosed within the containment shield structure, which has its own minimum RSD. A separate RSD is not necessary for the Reactor Containment Building. Therefore, the RSD for the containment shield structure is conservatively taken as the minimum RSD for the Reactor Containment Building.

FSAR Impact:

The U.S. EPR FSAR will not be changed as a result of this question.

Technical Report Impact:

ANP-10295 “Security Design Features Technical Report,” Revision 1 incorporates the changes as described in the response.

Question 13.06-48:

(U) Section 4.0, Vehicle Barrier System (Pages 4.7, after Bullet No.2 of ANP-10295, Rev. 0): Provide clarification and additional information on calculations referred to in the statement immediately after Bullet No. 2, that ". . . building is bounded by other calculations."

(U) Regulatory Basis: Same as previously stated (i.e., Subpart B of Title 10 CFR (10 CFR) 52, § 52.47, 10 CFR 52.48, 10 CFR Part 73, and 10 CFR 73.55(a)). Complete and accurate information is required in the application for meeting regulatory requirements. Clarification is needed to understand whether the statement refers to finite element structural or other calculations that are bounding based on similarity of structural design and construction.

Response to Question 13.06-48:

The Reactor Containment Building is protected from the direct DBT blast by the Containment Shield Structure. The Shield Structure consists of 1.8 m thick reinforced concrete and is separated from the Containment structure with the gap of 1.8 m in cylindrical part, minimum gap of 0.6 m in the torispherical part, and 2 m gap in spherical dome. This structure is designed to withstand the high impact of the NRC-specified aircraft with minimal structural damage/deflection.

In addition, the bottom section of the Containment Shield Structure is protected from the direct DBT impact by the Nuclear Island (NI) Buildings from the ground level up to their roof elevations as follows:

- +28.8m Safeguards Building 2 and 3.
- +29.3m Safeguards Buildings 1 and 4.
- +34.0m Fuel Building.

Note that ground elevation is considered 0.0 m.

On this basis, no specific minimum stand-off distance (RSD) was calculated for the Reactor Containment Building in ANP-10295, Revision 0 due to these bounding conditions. However, in the Response to Question 13.06-47 the RSD for the Containment Shield Structure is conservatively taken as the minimum RSD for the Reactor Containment Building. This RSD is calculated based on finite element time history analysis and verified as described in the Response to Question 13.06-51. The applied time-history analysis blast pressure function is calculated from A.T.-Blast and also verified against the TM 5-1300 and SBEDS as described in the Response to Question 13.06-51.

FSAR Impact:

The U.S. EPR FSAR will not be changed as a result of this question.

Technical Report Impact:

ANP-10295 "Security Design Features Technical Report," Revision 1 incorporates the changes as described in the response.

Question 13.06-49:

(U) Section 4.1, Nuclear Island Blast Calculations and Section 4.2, Isolated Vital Structure Blast Calculations (Pages 4-7 and 4-8 of ANP-10295, Rev. 0): Describe how structural responses of the nuclear island and other vital structures were analyzed using the computer code A.T.-Blast and finite element structural analysis. Specifically describe in summary how varying design and construction of US-EPR building structures were analyzed. Also state clearly any margin of safety that have been incorporated to address limitations and uncertainties of the computer code and finite element structural analysis used in determining required minimum RSD indicated on Page 4.8 (e.g., factor safety in structural calculations, input data, parameters and assumptions, interpretations of results the use of a certain quantities of TNT, or other input variables). Provide missing text for the statement on top of the page 4.8 that states "The main variable parameters in this design are:" Provide references that document the computer code and structural analysis.

(U) Regulatory Basis: Same as previously stated (i.e., Subpart B of Title 10 CFR (10 CFR) 52, § 52.47, 10 CFR 52.48, 10 CFR Part 73, and 10 CFR 73.55(b)). Title 10 CFR 73.55(e)(10)(i)(A) requires the design, construction, installation, and maintenance of a VBS at a stand-off distance adequate to protect personnel, equipment, and systems necessary to prevent radiological sabotage. AREVA determination of a minimum RSD for the buildings (i.e., performance of vital area barrier) is based on a combination of the building design/construction and the location/placement of the VBS (i.e., at RSD). Computer code A.T.-Blast is not referenced in Regulatory Guide 5.69, "Guidance for the Application of the Radiological Sabotage Design-Basis Threat in the Design, Development, and Implementation of a Physical Security Program the Meets 10 CFR 73.55 requirements," and as such additional information is needed on how AREVA applied the computer code and performed finite element structural analysis for determining capabilities of structural responses of buildings to postulated overpressure conditions (i.e., pressure loads) for determining the adequacy of structural responses at the indicated minimum RSD for adequate blast protection.

(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 information (RAI) as appropriate to identify SGI (or security-related information) that reveals the specific details of security features incorporated in the US-EPR design. The RAI responses supplementing the DC Tier 1 document must be publicly available.

Response to Question 13.06-49:

The blast analysis methodology and verification of the results for the structural responses of the nuclear island and other vital structures to the blast load are described in the Response to Question 13.06-51.

A significant margin of safety is incorporated into the structural analyses by using the assumptions described in the Response to Question 13.06-51.

ANP-10295, Section 4.1 will be revised as follows to provide clarification:

"The main variable parameters in blast analyses and design of nuclear island and other vital structures are:

- Sections material, thickness and reinforcement design (ratio).
- Structure/element geometry relative to DBT blast location.
- DBT charge weight and location."

FSAR Impact:

The U.S. EPR FSAR will not be changed as a result of this question.

Technical Report Impact:

ANP-10295 "Security Design Features Technical Report," Revision 1 incorporates the changes as described in the response.

Question 13.06-50:

(U) Sections 4.1, Nuclear Island Blast Calculations and Section 4.2, Isolated Vital Structure Blast Calculations (Pages 4-7 and 4-8 of ANP-10295, Rev. 0): Describe how calculations results from computer code A.T.-Blast were "crosschecked according to methodology recommended in TM 5-1300, "Structures to Resist the Effects of Accidental Explosion," as stated in Section 4.2. Include: descriptions of what specific methodology was applied; clarify whether the results from cross-check using TM 5-1300 provided similar results from applying computer code or structural analysis, as indicated on Sections 4.1 and 4.4; and indicate, in Section 13.0, References, the documents that contain the detailed of blast analysis and results of computer code and the validation of results by cross checking with methodology of TM 5-1300.

(U) Regulatory Basis: Same as previously stated (i.e., Subpart B of Title 10 CFR (10 CFR) 52, § 52.47, 10 CFR 52.48, 10 CFR Part 73, and 10 CFR 73.55(b)). Title 10 CFR 73.55(e)(10)(i)(A) requires the design, construction, installation, and maintenance of a VBS at a stand-off distance adequate to protect personnel, equipment, and systems necessary to prevent radiological sabotage. Complete and accurate information is needed in the application for meeting regulatory requirements. Statements indicated do not provide sufficient information regarding how computer code analysis results were validated or a comparison of results. Neither Sections 4.1 nor 13 provide references to documents that provides support of concluding or summary statements or discussions of blast calculations.

(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 information (RAI) as appropriate to identify SGI (or security-related information) that reveals the specific details of security features incorporated in the US-EPR design. The RAI responses supplementing the DC Tier 1 document must be publicly available.

Response to Question 13.06-50:

The SAP2000-V10 analyses results and blast load parameters from computer code A.T.-Blast were cross-checked using methodology recommended in TM 5-1300 and SBEDS, as described in the Response to Question 13.06-51.

FSAR Impact:

The U.S. EPR FSAR will not be changed as a result of this question.

Technical Report Impact:

ANP-10295 "Security Design Features Technical Report," Revision 1 incorporates the changes as described in the response.

Question 13.06-51:

(U) Sections 4.1, Nuclear Island Blast Calculations and Section 4.2, Isolated Vital Structure Blast Calculations (Pages 4-7 and 4-8, of ANP-10295, Rev. 0): Describe how finite element structural analysis and results were validated. Discuss whether RG 5.69 recommended method (i.e., SBED [Single Degree of Freedom Blast Design Spreadsheet] software and methodology manual by U.S. Army Corps of Engineers) using the same input data and parameter was used to compare and validate the finite element structural analysis results. In addition, to demonstrate conclusively that the finite element structural analysis performed is bounding using the conservative TNT equivalent quantities indicated, provide a baseline or confirmatory analysis and results to demonstrate that the minimum RSD based on the DBT required TNT quantity using SBED.

(U) Regulatory Basis: Same as previously stated (i.e., Subpart B of Title 10 CFR (10 CFR) 52, § 52.47, 10 CFR 52.48, 10 CFR Part 73, and 10 CFR 73.55(b)). Title 10 CFR 73.55(e)(10)(i)(A) require the design, construction, installation, and maintenance of a VBS at a stand-off distance adequate to protect personnel, equipment, and systems necessary to prevent radiological sabotage. Complete and accurate information is needed in the application for meeting regulatory requirements. Comparison of result using SBED, NRC accepted method, provides a means of validating results of performed finite element structural analysis. A baseline analysis using the exact quantity of DBT required TNT equivalent explosive would demonstrate conclusively that the resulting RSD indicated based on a more conservative larger quantity of TNT equivalent explosive analyzed is bounding and demonstrates that regulatory requirement is met. Without a baseline analysis, the indicated results for RSD and the AVERA assertions of adequate protection for meeting the regulatory requirements is demonstrated implicitly. The comparison of results with baseline analysis will clearly demonstrate adequacy of indicated MMSD and establish clearly the margin of safety or conservatism applied in AREVA analysis using finite element structural analysis and a larger quantity of TNT equivalent explosive. The technical basis describing the margin of safety or conservatism will benefit managing changes and evaluating security significances during plant operations.

(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 information (RAI) as appropriate to identify SGI (or security-related information) that reveals the specific details of security features incorporated in the US-EPR design. The RAI responses supplementing the DC Tier 1 document must be publicly available.

Response to Question 13.06-51:

Linear modal time-history structural analyses were initially performed to determine the minimum required standoff distance (RSD) based on maximum dynamic structural response to an applied blast load pressure-time function using the methodology identified in the Army manual TM5-1300 (Structures to Resist the Effects of Accidental Explosions, November 1990). Benchmark/verification analyses were subsequently performed using RG 5.69 recommended method Single Degree of Freedom Blast Design Spreadsheet (SBEDS). Details regarding the design methodology and approaches are described as follows:

- Computer code A.T.-Blast is used for the calculation of the blast load pressure-time functions (impulse). The calculated A.T.-Blast blast load functions are validated and compared to the functions calculated by using the methodology of manual TM5-1300. Additional A.T.-Blast validations are also performed against blast load functions calculated using the SBEDS. Comparison results show A.T.-Blast to be conservative and in good agreement with both TM 5-1300 methodology and SBEDS results.
- Computer code SAP2000-V10 linear multi-modal time-history structural analyses are used for the calculation of the maximum dynamic responses due to an applied impulse blast loads. The SAP2000-V10 results are validated and compared to:
  - Theoretical solution for the dynamic response of single degree of freedom system on triangular pressure-time impulse. Inconsequential differences (less than 1%-variance) are verified between the theoretical and SAP2000-V10 responses for the single degree of freedom system.
  - Structural response calculated by using Dynamic Load Factor (DLF) methodology from manual TM5-1300. The comparisons of the structural responses show that SAP2000-V10 is in good agreement with TM5-1300 methodology.
  - Structural responses calculated by using SBEDS with variable DBT charges, stand-off distances, and incident angles. The comparison with SBEDS provides verification for both SAP2000-V10 and A.T.-Blast. A comparison of the results shows that the computer codes SAP2000-V10 and A.T.-Blast are in good agreement with SBEDS results.

The minimum RSDs identified in ANP-10295 envelope the results of TM 5-1300 and SBEDS methodologies. AREVA NP analyses provide minimum RSDs with significant margin of safety due to the following assumptions:

- The major vital structures expected to sustain superficial damage (Response is less or equal to B1 for reinforced concrete) because of dynamic response to a blast pressure loads and provide high level of blast protection.
- The RSDs calculated for the shield structures are conservatively taken as the minimum RSD for enclosed structures of: Reactor Containment, Fuel Building, and Safeguards Building 2 and 3. Shield structures are considered secondary components expected to sustain superficial damage or as maximum moderated damage (Response between B1 and B2). This provides medium level of blast protection for the Shield Structure itself and high level of blast protection for the enclosed structures.

FSAR Impact:

The U.S. EPR FSAR will not be changed as a result of this question.

Technical Report Impact:

ANP-10295 “Security Design Features Technical Report,” Revision 1 incorporates the changes as described in the response.

Question 13.06-52:

(U) Section 4.1, Nuclear Island Blast Calculations and Section 4.2, Isolated Vital Structure Blast Calculations (Pages 4-7 and 4-8 of ANP-10295, Rev. 0): Demonstrate how the blast calculations considered and ensure safety-related SSC and non-safety equipment for safety and security functions within the vital island and vital structures are protected. Provide summary of key assumptions, technical bases, and conclusions of calculated blast effects and consequences that demonstrates survivability and availability of systems and operator actions (e.g., postulated damage to VA structures, damages to equipment, human fragility, etc.) to perform required safety functions of target sets.

(U) Regulatory Basis: Same as previously stated (i.e., Subpart B of Title 10 CFR (10 CFR) 52, § 52.47, 10 CFR 52.48, 10 CFR Part 73, and 10 CFR 73.55(b)). Title 10 CFR 73.55(e)(10)(i)(A) requires the design, construction, installation, and maintenance of a VBS at a stand-off distance adequate to protect personnel, equipment, and systems necessary to prevent radiological sabotage. The US-EPR design incorporates design features to protect against DBT vehicle bombs. Additional information is needed to describe how AREVA blast calculations or analysis considered the blast effects on equipment and personnel within the vital island and vital structures and resulting conclusions.

(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 information (RAI) as appropriate to identify SGI (or security-related information) that reveals the specific details of security features incorporated in the US-EPR design. The RAI responses supplementing the DC Tier 1 document must be publicly available.

Response to Question 13.06-52:

ANP-10295 Sections 4.1, 4.2, 4.4, and 4.6 summarize the conclusions (e.g., postulated damage to VA structures, damages to equipment, human fragility) from AREVA NP engineering blast calculations. The supporting calculations include the key assumptions and technical bases and are available for inspection.

FSAR Impact:

The U.S. EPR FSAR will not be changed as a result of this question.

Technical Report Impact:

ANP-10295 “Security Design Features Technical Report,” Revision 1 incorporates the changes as described in the response.

Question 13.06-53:

(U) Sections 4.4, Blast Standoff Distances (Page 4-9 of ANP-10295, Rev. 0): Indicate the RSD for the Reactor Building. If there is no RSD, than indicate it as such for completeness of information.

(U) Regulatory Basis: Same as previously stated (i.e., Subpart B of Title 10 CFR (10 CFR) 52, § 52.47, 10 CFR 52.48, 10 CFR Part 73, and 10 CFR 73.55(b)). Title 10 CFR 73.55(e)(10)(i)(A) requires the design, construction, installation, and maintenance of a VBS at a stand-off distance adequate to protect personnel, equipment, and systems necessary to prevent radiological sabotage. The minimum RSD indicated on Page 4.9, did not include the Reactor Building. All vital island and structures must be indicated to demonstrate that regulatory requirement is met.

(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 information (RAI) as appropriate to identify SGI (or security-related information) that reveals the specific details of security features incorporated in the US-EPR design. The RAI responses supplementing the DC Tier 1 document must be publicly available.

Response to Question 13.06-53:

See the Response to Question 13.06-47. The Required Standoff Distance (RSD) from the outer surface of the cylindrical part of the shield structure over the Reactor Building is specified in Section 4.6 of ANP-10295, Revision 1.

FSAR Impact:

The U.S. EPR FSAR will not be changed as a result of this question.

Technical Report Impact:

ANP-10295 “Security Design Features Technical Report,” Revision 1 incorporates the changes as described in the response.

Question 13.06-54:

(U) Sections 4.4, Blast Standoff Distances (Page 4-9 of ANP-10295, Rev. 0): Provide reference of the blast calculations and finite element structural analysis that contain detailed technical bases supporting the indicated minimum RSD. In addition, clarify how AREVA calculations and analyses considered and addressed the design and configuration of defensive position (DP) indicated in Figures 6-1 and 6-2. Identify the reference technical calculations and analyses in Section 13, References, on Page13-1 of ANP-10295.

(U) Regulatory Basis: Same as previously stated (i.e., Subpart B of Title 10 CFR (10 CFR) 52, § 52.47, 10 CFR 52.48, 10 CFR Part 73, and 10 CFR 73.55(b)). Title 10 CFR 73.55(e)(10)(i)(A) requires the design, construction, installation, and maintenance of a VBS at a stand-off distance adequate to protect personnel, equipment, and systems necessary to prevent radiological sabotage. The analyses, evaluations, and calculations that provide the technical bases for adequate RSD and the design and performance requirements DP that are relied on to provide capabilities to interdict and neutralize adversaries must be included as a licensing basis and described in ANP-10295 or incorporated by referencing applicable technical documents. Currently, ANP-10295 does not include sufficient information providing the technical bases and assumptions for adequacy of RSD for vital island and vital structures and the RSD for planned DP indicated in Figures 6-1 and 6-2.

(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 information (RAI) as appropriate to identify SGI (or security-related information) that reveals the specific details of security features incorporated in the US-EPR design. The RAI responses supplementing the DC Tier 1 document must be publicly available.

Response to Question 13.06-54:

The survival of structures within the scope of the design certification that are supporting defensive positions is addressed in calculations identified in the Response to Question 13.06-52.

FSAR Impact:

The U.S. EPR FSAR will not be changed as a result of this question.

Technical Report Impact:

ANP-10295 “Security Design Features Technical Report,” Revision 1 incorporates the changes as described in the response.

Question 13.06-55:

(U) Sections 5.0, Cyber Security (Pages 5-1 and 5-2 of ANP-10295, Rev. 0): Describe the US-EPR design requirements for protecting security systems against potential cyber attack in accordance with 10 CFR 73.1(a)(1)(v). Describe specific cyber threat(s) that were considered and the evaluation of potential impact to security systems to perform their intended functions. Include in the response: descriptions of how the design of security systems has incorporated features to provide a layered-protection to prevent, detect, and protect against the cyber threats and provide assurance that engineered security systems relied on will continue to provide required functions of detection, alarm, assessment, communications, and controls of active security systems (e.g., delay barriers, dispensable delays). Provide references to the AREVA technical/topical report(s) addressing cyber security that are applicable or address to the design of security systems.

(U) Regulatory Basis: Same as previously stated (i.e., Subpart B of Title 10 CFR (10 CFR) 52, § 52.47, 10 CFR 52.48, 10 CFR Part 73, and 10 CFR 73.55(a)). Complete and accurate descriptions of security features (i.e., design requirements, performances, technical basis, and assumptions) incorporated in the standard US-EPR design is needed for understanding the approach and how the US-EPR design features will provide or contribute to protecting against the DBT or meet regulatory requirements. The consideration in the design of security systems for protection against cyber threat is required.

(***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 information (RAI) as appropriate to identify SGI (or security-related information) that reveals the specific details of security features incorporated in the US-EPR design. The RAI responses supplementing the DC Tier 1 document must be publicly available***

Response to Question 13.06-55:

The Cyber-Security program is not within the scope of the Design Certification. According to Draft Regulatory Guide 5.71 Revision 0, the Cyber-Security program is solely the responsibility of the COL applicant, as identified in U.S. EPR FSAR Tier 2, Table 1.8-2, Item 13.6-4.

FSAR Impact:

The U.S. EPR FSAR will not be changed as a result of this question.

Question 13.06-56:

(U) Sections 5.0, Cyber Security (Pages 5-1 and 5-2 of ANP-10295, Rev. 0): Describe what cyber security safeguards will be applied to security systems, such as intrusion detection system and components and CAS/SAS systems hardware and software. Clarify whether AREVA plans to develop software and/or hardware for security related systems (e.g., Central Alarm Station and Secondary Alarm Station systems – including graphical alarm displays, user interfaces, control functions, etc.). If security systems are commercially available off-the-shelf, clarify whether the AREVA design and specification requirements would include requirements for listing or approval by independent testing laboratories (e.g. Underwriter Laboratories, Factory Mutual, or other accepted, including federal agencies), to provide reasonable assurance of quality and reliability of hardware and software to perform intended security functions.

(U) Regulatory Basis: Same as previously stated (i.e., Subpart B of Title 10 CFR (10 CFR) 52, § 52.47, 10 CFR 52.48, 10 CFR Part 73, and 10 CFR 73.55(a)). Complete and accurate descriptions of security features (i.e., design requirements, performances, technical basis, and assumptions) incorporated in the standard US-EPR design is needed for understanding the approach and how the US-EPR design features will provide or contribute to protecting against the DBT or meet regulatory requirements. The considerations and protection against cyber threat is required. Technical Report ANP-10295, Appendix B, describing TXS system code (produced by AREVA GmbH) and TXS application code (produced by AREVA NP Inc.) are applicable to nuclear applications and are not applicable to non-nuclear systems (Page B-20, 2nd paragraph). Additional information is needed to clarify what standards and safeguards are applied to protect digital security systems from AREVA postulated cyber threats.

(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 information (RAI) as appropriate to identify SGI (or security-related information) that reveals the specific details of security features incorporated in the US-EPR design. The RAI responses supplementing the DC Tier 1 document must be publicly available.

Response to Question 13.06-56:

The Cyber-Security program is not within the scope of the Design Certification. According to Draft Regulatory Guide 5.71 Revision 0, the Cyber-Security program is solely the responsibility of the COL applicant, as identified in U.S. EPR FSAR Tier 2, Table 1.8-2, Item 13.6-4.

FSAR Impact:

The U.S. EPR FSAR will not be changed as a result of this question.

Question 13.06-57:

(U) Sections 6.0, Defensive Positions (Page 6-1, 1st paragraph of ANP-10295 of ANP-10295, Rev. 0): Provide clarification and state whether the numbers of external responders indicated in this section is a minimum number that must be met by a COL applicant or whether it is a minimum number that is provided for information only (i.e., a COL Applicant must determine the required (equal or greater) based on further evaluation of a physical protection system that provide response capabilities to interdict and neutralize adversaries). Clearly state whether the external DP design and configurations indicated on Figures 6-1 or 6-2 are within the scope of the DC and a COL applicant must be met by referenced COL applicant or it is provided for information only and a COL applicant will provide design and performance requirements, including configurations, based on final review and determination of a physical protection system required to provide adequate protection.

(U) Regulatory Basis: Same as previously stated (i.e., Subpart B of Title 10 CFR (10 CFR) 52, § 52.47, 10 CFR 52.48, 10 CFR Part 73, and 10 CFR 73.55(b)). The descriptions of security features incorporated in the standard US-EPR design provides the technical basis for determining adequacy of a physical protection system that will protect against the DBT and meeting regulatory requirements. The scope of US-EPR design is limited to the nuclear island and identified vital structures (with the exception of SBODG), as described in Chapter 1 of the FSAR and Section 1.0 of Technical Report ANP-10295. The design and performance requirements of physical protections systems between the VA and PA and required security operational programs appears to be beyond the scope of the DC, but is not clearly established based on current descriptions and discussions in this section of ANP-10295.

(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 information (RAI) as appropriate to identify SGI (or security-related information) that reveals the specific details of security features incorporated in the US-EPR design. The RAI responses supplementing the DC Tier 1 document must be publicly available

Response to Question 13.06-57:

ANP-10295 was revised to add Appendix J, which defines the methodology used in locating the defensive positions in Figure 6-1 and Figure 6-2. Analysis of the effectiveness of the overall defensive configuration requires the site-specific Protected Area perimeter because of the need for terrain, site-specific distances, etc. ANP-10295 states that the evaluation of the defensive configuration and the analysis of visual coverage are provided in the site-specific Security Assessment.

The standard defensive structures are available for use by the COL applicant in developing a defensive strategy in the site-specific Security Assessment. The COL applicant, as part of a site-specific Security Assessment, may add additional external defensive positions if required by the site-specific strategy.

FSAR Impact:

The U.S. EPR FSAR will not be changed as a result of this question.

Technical Report Impact:

ANP-10295 “Security Design Features Technical Report,” Revision 1 incorporates the changes as described in the response.

Question 13.06-58:

(U) Sections 6.0, Defensive Positions (Page 6-1to 6-4 of ANP-10295): Discuss how DP in Figures 6-1 and 6-2 provide capabilities of responders to interdict and neutralize adversaries attempting to access the VA by means other than access doors. Specifically discuss how lines of sights (i.e., fields of fire) were considered for capabilities of responders to interdict and neutralize adversaries attempting access the VA through walls, roof, equipment hatches, HVAC penetrations, manholes, or other openings. Include in the response: (a) the descriptions of technical bases and assumptions for the configuration of DP; and (b) the design and performance requirements for the constructions and installation of DP to provide tactical advantage and/or protected security responders (e.g., weapon firing portals, lines of sight, bullet and ballistic protection, etc.).

(U) Regulatory Basis: Same as previously stated (i.e., Subpart B of Title 10 CFR (10 CFR) 52, § 52.47, 10 CFR 52.48, 10 CFR Part 73, and 10 CFR 73.55(b)). The descriptions of security features incorporated in the standard US-EPR design provides the technical basis for determining adequacy of a physical protection system that will protect against the DBT and meeting regulatory requirements. The locations and design of DP provides assurance for protection of security responders and the capabilities for lines of sight to interdict and neutralize adversaries. Technical Report ANP-10295 provides Figures 6-1 and 6-2 showing options for configurations of DP, but provided no technical bases, assumptions, or design and performance requirements.

(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 information (RAI) as appropriate to identify SGI (or security-related information) that reveals the specific details of security features incorporated in the US-EPR design. The RAI responses supplementing the DC Tier 1 document must be publicly available.

Response to Question 13.06-58:

ANP-10295 was revised to add Appendix J, which defines the methodology used in locating the defensive positions in Figure 6-1 and Figure 6-2. Analysis of the effectiveness of the overall defensive configuration requires the site-specific Protected Area perimeter because of the need for terrain, site-specific distances, etc. ANP-10295 states that the evaluation of the defensive configuration and the analysis of visual coverage are provided in the site-specific Security Assessment.

FSAR Impact:

The U.S. EPR FSAR will not be changed as a result of this question.

Technical Report Impact:

ANP-10295 “Security Design Features Technical Report,” Revision 1 incorporates the changes as described in the response.

Question 13.06-59:

(U) Sections 6.0, Defensive Positions (Page 6-1to 6-4 of ANP-10295, Rev. 0): For the proposed external configurations of DP, describe the defense-in-depth protection provided between the VA and PA boundaries that will deny adversaries access to he vital island and vital structures. Include in the response the following: (a) illustrate and describe the minimum layers of protection that will be provided for a high assurance that adversaries will be neutralized or be stopped from completing tasks; (b) illustrate and describe the fields of fire and the vital area boundaries assigned to each DP and credited to defend against each of the postulated bounding attack scenarios; (c) descriptions and discussion of how certain DP on the vital structures will be initial manned and/or redeployed to provide overlapping fields of fire and a layered-protection between the VA boundaries and the PA barrier; (d) illustrate or describe the capabilities of each DP to provide clear lines of sight of adversaries within responsible fields of fire between the VA and the PA to engage adversaries along travel routes up to the VA; and (e) describe any assumptions and illustrate fields of fire and locations of DP that will be allow responders to stop adversaries attempting to scale walls to access VA boundaries from the roof and using access to underground penetrations.

(U) Regulatory Basis: Same as previously stated (i.e., Subpart B of Title 10 CFR (10 CFR) 52, § 52.47, 10 CFR 52.48, 10 CFR Part 73, and 10 CFR 73.55(b)). The descriptions of security features incorporated in the standard US-EPR design provides the technical basis for determining adequacy of a physical protection system that will protect against the DBT and meeting regulatory requirements. Figures 6-1 and 6-2 identify locations of DP. Additional descriptions and discussions of technical bases and assumptions of defense-in-depth or layered-protections are needed to demonstrate design of physical protection system capabilities for interdict and neutralize DBT adversaries from causing radiological sabotage.

(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 information (RAI) as appropriate to identify SGI (or security-related information) that reveals the specific details of security features incorporated in the US-EPR design. The RAI responses supplementing the DC Tier 1 document must be publicly available.

Response to Question 13.06-59:

ANP-10295 was revised to add Appendix J, which defines the methodology used in locating the defensive positions in Figure 6-1 and Figure 6-2. Analysis of the effectiveness of the overall defensive configuration requires the site-specific Protected Area perimeter because of the need for terrain, site-specific distances, etc. ANP-10295 states that the evaluation of the defensive configuration and the analysis of visual coverage are provided in the site-specific Security Assessment.

FSAR Impact:

The U.S. EPR FSAR will not be changed as a result of this question.

Technical Report Impact:

ANP-10295 “Security Design Features Technical Report,” Revision 1 incorporates the changes as described in the response.

Question 13.06-60:

(U) Sections 6.0, Defensive Positions (Pages 6-1 to 6-4 of ANP-10295, Rev. 0): Describe assumptions for hardening of "External Defensive Position." identified in Figures 6-1 and 6-2. Specifically, describe blast analysis, design and performance requirements, technical bases, and assumptions for hardening DP and/or placement (RSD) to withstanding blast effects of DBT adversary characteristics in accordance with 10 CFR 73.1(a)(1)(E)(iii). Provide reference to blast calculations or analysis that establishes the basis for the minimum RSD to protect configuration of proposed DP. Describe design and performance requirements of the DP for assuring capabilities for security responders to interdict and neutralization of adversaries at the PA and VA. Describe design requirements for fields of fire specific to horizontal and vertical angles for line of sights.

(U) Regulatory Basis: Same as previously stated (i.e., Subpart B of Title 10 CFR (10 CFR) 52, § 52.47, 10 CFR 52.48, 10 CFR Part 73, and 10 CFR 73.55(b)). The descriptions of security features incorporated in the standard US-EPR design, with application of defense-in-depth, provide a license basis for protection against the DBT. Additional information is needed for adequate descriptions to understand the analysis, technical bases, and assumptions for design of DP to protect security responders and not restrict response capabilities.

(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 information (RAI) as appropriate to identify SGI (or security-related information) that reveals the specific details of security features incorporated in the US-EPR design. The RAI responses supplementing the DC Tier 1 document must be publicly available.

Response to Question 13.06-60:

Design criteria for the external defensive positions are found in Appendix D of the site-specific Security Assessment.

FSAR Impact:

The U.S. EPR FSAR will not be changed as a result of this question.

Question 13.06-61:

(U) Sections 6.0, Defensive Positions (Pages 6-1 to 6-4 of ANP-10295, Rev. 0): Discuss how AREVA evaluation accounts for distance and movements of adversaries in determining the assumptions and likelihood of neutralization by a security responder. Include assumptions for probabilities of neutralization as a function of distance and rate of movement in establishing configuration of DP indicated in Figures 6-1 and 6-2. Also discuss whether the design (i.e. DP configuration) considered operating experiences for fire arms training and qualification for operating reactor security personnel and whether qualifying testing criteria was considered in determining the likelihood or probability of hit and kill.

(U) Regulatory Basis: Same as previously stated (i.e., Subpart B of Title 10 CFR (10 CFR) 52, § 52.47, 10 CFR 52.48, 10 CFR Part 73, and 10 CFR 73.55(b)). The descriptions of security features incorporated in the standard US-EPR design provides the technical basis for determining adequacy of a physical protection system that will protect against the DBT and meeting regulatory requirements. Defense-in-depth or layered protection provides assurance of interdiction and neutralization of adversaries to prevent radiological sabotage and provide adequate protection.

(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 information (RAI) as appropriate to identify SGI (or security-related information) that reveals the specific details of security features incorporated in the US-EPR design. The RAI responses supplementing the DC Tier 1 document must be publicly available.

Response to Question 13.06-61:

ANP-10295 was revised to add Appendix J.2.5, which defines the methodology used in locating and evaluating the effectiveness of the defensive positions in Figure 6-1 and Figure 6-2.

FSAR Impact:

The U.S. EPR FSAR will not be changed as a result of this question.

Technical Report Impact:

ANP-10295 “Security Design Features Technical Report,” Revision 1 incorporates the changes as described in the response.

Question 13.06-62:

(U) Sections 6.0, Defensive Positions (Pages 6-4, 1st paragraph of ANP-10295, Rev. 0): Provide the technical bases supporting the design and configuration of DP indicated in Figures 6-1 and 6-2, "External Defensive Position (Option 1)" and "External Defensive Position (Option 2)." Specifically describe technical assumptions, performance requirements, and systematic analysis or evaluation: (a) to demonstrate that the configurations used by security responders will be capable of denying access to the VA at "the entrances to the Vital Area" and other postulated entry points; (b) how "multiple overlapping fields of fire, substantial defensive cover" will be provided along the VA barriers and at designated entrances; and (c) design requirements for construction of DP to provide "substantial strategic advantage in all engagement." Provide summary of assumptions and results and references to supporting technical documents containing "Defensive Analyses" that were performed (e.g., AREVA 51. e.g., AREVA 51-9066044, 51-9066046, 51-9066047, etc.).

(U) Regulatory Basis: Same as previously stated (i.e., Subpart B of Title 10 CFR (10 CFR) 52, § 52.47, 10 CFR 52.48, 10 CFR Part 73, and 10 CFR 73.55(b)). Current ANP-10295 does not include technical bases and assumptions for the design and configurations of DP indicated in Figures 6-1and 6-2. The analysis or evaluation that provides the technical bases for the design and configuration of DP that establishes the defense-in-depth or layered protection for assurance of interdiction and neutralization of adversaries attempting to cause radiological sabotage must be included as licensing basis and described in ANP-10295 or incorporated by referencing applicable technical documents. Currently, ANP-10295 does not include sufficient information providing the technical bases and assumptions for adequacy of DP proposed in Figures 6-1 and 6-2.

(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 information (RAI) as appropriate to identify SGI (or security-related information) that reveals the specific details of security features incorporated in the US-EPR design. The RAI responses supplementing the DC Tier 1 document must be publicly available.

Response to Question 13.06-62:

ANP-10295 was revised to add Appendix J, which defines the methodology used in locating the defensive positions in Figure 6-1 and Figure 6-2. Analysis of the effectiveness of the overall defensive configuration requires the site-specific Protected Area perimeter because of the need for terrain, site-specific distances, etc. ANP-10295 states that the evaluation of the defensive configuration and the analysis of visual coverage are provided in the site-specific Security Assessment.

FSAR Impact:

The U.S. EPR FSAR will not be changed as a result of this question.

Technical Report Impact:

ANP-10295 “Security Design Features Technical Report,” Revision 1 incorporates the changes as described in the response.

Question 13.06-63:

(U) Sections 6.0, Defensive Positions (Pages 6-3 and 6-4 of ANP-10295, Rev. 0): Describe the design and performance requirements for ballistics protection and/or blast resistant capabilities of proposed DP indicated in Figures 6-1 and 6-2.

(U) Regulatory Basis: Same as previously stated (i.e., Subpart B of Title 10 CFR (10 CFR) 52, § 52.47, 10 CFR 52.48, 10 CFR Part 73, and 10 CFR 73.55(b)). The US-EPR design of a physical protection system describes proposed DP design requirement (i.e., locations) within the VA and PA to protect target sets. Additional information is needed to determine adequacy of design features protecting against DBT vehicles bombs, including a coordinated attack, in accordance with 10 CFR 73.1(a)(1)(E)(iii). The protection of responders within the DP provides an assurance of tactical advantage and continued availability of responders.

(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 information (RAI) as appropriate to identify SGI (or security-related information) that reveals the specific details of security features incorporated in the US-EPR design. The RAI responses supplementing the DC Tier 1 document must be publicly available.

Response to Question 13.06-63:

Design criteria for the defensive positions are found in Appendix D of the site-specific Security Assessment.

FSAR Impact:

The U.S. EPR FSAR will not be changed as a result of this question.

Question 13.06-64:

(U) Sections 6.0, Defensive Positions (Page 6-2, 2nd paragraph of ANP-10295, Rev. 0): Describe whether defensive analyses include other conservative assumptions or margin for security response indicated in the 2nd paragraph, on Page 6-2, for the proposed design and configuration of DP indicated in Figures 6-1 and 6-2. Specifically, discuss how environmental or human factors were considered in the determining reliability and effectiveness of security responders to perform responsible security functions (i.e., under suppressive gun fire and heighten state of stress of a life and death). Indicate assumptions and resulting margin for the following that are applicable: (a) recovery from physical exertion of travel (i.e., required redeployment) to a ready physical state; (b) possible delays in route of travel; (c) effectiveness of a security responder to acquire and engage targets under adversaries suppressive fire on a DFP; (d) possible failure of response, such as whether an isolated security responder would engage adversaries under fire; and (e) performing tasks under heighten state of stress or resolving equipment problem (donning of gas mask or PPE, clearing of misfired round, etc.). Describe how AREVA application of "fault tolerant" philosophies considered the environmental or human factors related to neutralization and application of defense-in-depth for implementing a denial of access to the VA.

(U) Regulatory Basis: Same as previously stated (i.e., Subpart B of Title 10 CFR (10 CFR) 52, § 52.47, 10 CFR 52.48, 10 CFR Part 73, and 10 CFR 73.55(b)). 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 US-EPR proposed two options for configuration (i.e., location) of DP that are relied on to protect target sets from the DBT. Human performance are affected by environmental and physical conditions, along with heighten state of stress. Uncertainties are addressed by incorporating margin of time and redundancies to provide defense-in-depth to assure reliability and availability of protection.

(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 information (RAI) as appropriate to identify SGI (or security-related information) that reveals the specific details of security features incorporated in the US-EPR design. The RAI responses supplementing the DC Tier 1 document must be publicly available.

Response to Question 13.06-64:

ANP-10295 states that the strategy of use of the available defensive positions and effectiveness evaluation of the defensive configuration is provided in the site-specific Security Assessment.

ANP-10295 was revised to add Appendix J which defines the methodology (including J.2.7 on how fault tolerance was applied) used in locating the defensive positions in Figure 6-1 and Figure 6-2.

FSAR Impact:

The U.S. EPR FSAR will not be changed as a result of this question.

Technical Report Impact:

ANP-10295 “Security Design Features Technical Report,” Revision 1 incorporates the changes as described in the response.

Question 13.06-65:

(U) Sections 6.0, Defensive Positions (Pages 6-2 to 6-4 of ANP-10295, Rev. 0): Describe and illustrate the specific DP that are credited in providing overlapping fields of fire coverage and how DP may be assumed unavailable due to suppressive fire or other adversaries actions for postulated attack scenarios. Include discussions of security responder's opportunities to acquire or target adversaries (i.e., time adversaries are in view and distances within field of fire) before obstructions or loss of adversaries due to cover and concealment from the proposed locations of each DP and the planned configurations of vital island and structures of the EPR design. Describe evaluations of each sectors of the plant (i.e., N, S, E, W, NE, NW, SE, and SW) and the unobstructed lines of sight from DP for overlapping fields of fire. Provide illustration of overlapping fields of fire for the proposed DP in Figures 6-1 and 6-2.

(U) Regulatory Basis: Same as previously stated (i.e., Subpart B of Title 10 CFR (10 CFR) 52, § 52.47, 10 CFR 52.48, 10 CFR Part 73, and 10 CFR 73.55(b)). 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 US-EPR design of a physical protection system describes proposed DP to protect target sets from the DBT. Overlapping fields of fire from DP provides for reliability of interdiction and neutralization of adversaries to deny access to the VA. Additional information describing of adequate fields of fire is needed for demonstrating adequacy of proposed DP in Figures 6-1 and 6-2 and demonstrate layered protection and reliability of security response between the PA and VA.

(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 information (RAI) as appropriate to identify SGI (or security-related information) that reveals the specific details of security features incorporated in the US-EPR design. The RAI responses supplementing the DC Tier 1 document must be publicly available.

Response to Question 13.06-65:

ANP-10295 was revised to add Appendix J, which defines the methodology used in locating the defensive positions in Figure 6-1 and Figure 6-2 (e.g., overlapping fields of fire, suppressive fire, target acquisition, postulated attack scenarios).

FSAR Impact:

The U.S. EPR FSAR will not be changed as a result of this question.

Technical Report Impact:

ANP-10295 "Security Design Features Technical Report," Revision 1 incorporates the changes as described in the response.

Question 13.06-66:

(U) Sections 6.0, Defensive Positions (Pages 6-2 to 6-4 of ANP-10295, Rev. 0): Describe the maximum distance for target acquisition for the responsible fields of fire from each DFP indicated in Figures 6.1 and 6.2. Clarify whether the vertical distances of DP above ground were considered in determining maximum distance and provide assumptions regarding probabilities of hit or kill assumed in the AREVA evaluation of neutralizing adversaries.

(U) Regulatory Basis: Same as previously stated (i.e., Subpart B of Title 10 CFR (10 CFR) 52, § 52.47, 10 CFR 52.48, 10 CFR Part 73, and 10 CFR 73.55(b)). 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 US-EPR design of a physical protection system describes design features to protect target sets from the DBT.

(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 information (RAI) as appropriate to identify SGI (or security-related information) that reveals the specific details of security features incorporated in the US-EPR design. The RAI responses supplementing the DC Tier 1 document must be publicly available.

Response to Question 13.06-66:

ANP-10295 was revised to add Appendix J.2.5, which defines the methodology used in evaluating target neutralization and distance to target (including defensive location elevation).

FSAR Impact:

The U.S. EPR FSAR will not be changed as a result of this question.

Technical Report Impact:

ANP-10295 “Security Design Features Technical Report,” Revision 1 incorporates the changes as described in the response.

Question 13.06-67:

(U) Sections 6.0, Defensive Positions (Pages 6-3 to 6-4 of ANP-10295, Rev. 0): Describe DBT attack scenarios considered and how DP indicated in Figures 6-1 and 6-2 provides assurance of protection against the most challenging or bounding of attack scenarios. Describe postulated scenarios pathways and adversaries tasks time that were the most challenging to security responders or most advantageous to the adversaries to address uncertainties and provide defense-in-depth for security response.

(U) Regulatory Basis: Same as previously stated (i.e., Subpart B of Title 10 CFR (10 CFR) 52, § 52.47, 10 CFR 52.48, 10 CFR Part 73, and 10 CFR 73.55(b)). 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. AREVA did not discuss postulated adversaries attack scenarios that were considered credible and how others were determined to be not credible and were not further developed. Additional information is needed on the how AREVA evaluation considered all credible scenarios specifics to the US-EPR design, how systematically arrived at the final set of postulated credible scenarios based on the DBT, and how the proposed Figures 6-1 and 6-2 configurations of DP are bounding of all credible attack scenarios.

(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 information (RAI) as appropriate to identify SGI (or security-related information) that reveals the specific details of security features incorporated in the US-EPR design. The RAI responses supplementing the DC Tier 1 document must be publicly available.*

Response to Question 13.06-67:

ANP-10295 was revised to add Appendix J, which defines the methodology used in locating the defensive positions in Figure 6-1 and Figure 6-2, including attack scenarios addressing the full range of DBT attributes.

ANP-10295 was revised to add Appendix J, which defines the methodology used in locating the defensive positions in Figure 6-1 and Figure 6-2. Analysis of the effectiveness of the overall defensive configuration requires the site-specific Protected Area perimeter because of the need for terrain, site-specific distances, etc. ANP-10295 states that the evaluation of the defensive configuration and the analysis of visual coverage are provided in the site-specific Security Assessment.

FSAR Impact:

The U.S. EPR FSAR will not be changed as a result of this question.

Technical Report Impact:

ANP-10295 “Security Design Features Technical Report,” Revision 1 incorporates the changes as described in the response.

Question 13.06-68:

(U) Sections 6.0, Defensive Positions (Pages 6-3 to 6-4 of ANP-10295, Rev. 0): Provide detailed descriptions and assumptions for response timelines for each DP indicated in Figures 6-1 and 6-2. Describe any engineered delay barriers systems that would be required to ensure opportunities for security responders within their initial response position to acquire and engage adversaries. Demonstrate the defense-in-depth (i.e., layered-protection), minimum overlapping fields indicated on Page 6-2, for assuring that an adversary is engaged along its path of travel beginning at PA boundary, isolation zone, plant area between the VA and isolation zone, and at the VA barrier, with overlapping fields of fire. Include in the response: (a) the descriptions of how locations of DP will allow security responders to engage adversaries along the path of travel from the PA toward VA; (b) illustrate the fields of fire required by design and locations of the DP to provide effective coverage of all possible access routes; clarify whether the proposed configurations of DP are bounding for all modes of operations (e.g., full power, refueling outage, and cold shutdown physical plant conditions); and (c) state whether certain modes of operations would be addressed as a site specific condition based on planned changes to site physical configuration (e.g., routinely recurring refueling outage, infrequent steam generator replacement, etc.) by a COL applicant as a COL information item.

(U) Regulatory Basis: Same as previously stated (i.e., Subpart B of Title 10 CFR (10 CFR) 52, § 52.47, 10 CFR 52.48, 10 CFR Part 73, and 10 CFR 73.55(b)). 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 US-EPR design of a physical protection system included proposed DP to protect access to VA. Overlapping fields of fire from multiple DP provides for defense-in-depth of interdiction and neutralization of adversaries. Technical Report ANP-10295 did not provide sufficient information of the design bases and assumptions for the DP described in Figures 6.1 and 6.2 to demonstrate adequacy of the security response and defense-in-depth.

(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 information (RAI) as appropriate to identify SGI (or security-related information) that reveals the specific details of security features incorporated in the US-EPR design. The RAI responses supplementing the DC Tier 1 document must be publicly available.*

Response to Question 13.06-68:

ANP-10295 was revised to add Appendix J, which defines the methodology used in locating the defensive positions in Figure 6-1 and Figure 6-2, including attack scenarios addressing the full range of DBT attributes.

ANP-10295 was revised to add Appendix J, which defines the methodology used in locating the defensive positions in Figure 6-1 and Figure 6-2. Analysis of the effectiveness of the overall defensive configuration requires the site-specific Protected Area perimeter because of the need for terrain, site-specific distances, etc. ANP-10295 states that the evaluation of the defensive configuration and the analysis of visual coverage are provided in the site-specific Security Assessment.

FSAR Impact:

The U.S. EPR FSAR will not be changed as a result of this question.

Technical Report Impact:

ANP-10295 “Security Design Features Technical Report,” Revision 1 incorporates the changes as described in the response.

Question 13.06-69:

(U) Sections 6.0, Defensive Positions (Pages 6-3 to 6-4 of ANP-10295, Rev. 0): Describe how AREVA evaluation of neutralization considered a security responder acquisition of target based on varying angles of views from a DP (e.g., physical profiles – front or side view) and the resulting assumptions or impact on the probabilities for neutralizing adversaries.

(U) Regulatory Basis: Same as previously stated (i.e., Subpart B of Title 10 CFR (10 CFR) 52, § 52.47, 10 CFR 52.48, 10 CFR Part 73, and 10 CFR 73.55(b)). 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 US-EPR design incorporates physical security design features to protect target sets against the DBT. Overlapping fields of fire from DP provides for reliability of interdiction and neutralization that denies access of adversaries to VA. Additional information is needed to determine adequacy of Figures 6.1 and 6.2 DP and evaluate the reliability of design for security response between the PA and VA.

(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 information (RAI) as appropriate to identify SGI (or security-related information) that reveals the specific details of security features incorporated in the US-EPR design. The RAI responses supplementing the DC Tier 1 document must be publicly available.*

Response to Question 13.06-69:

ANP-10295 was revised to add Appendix J, which defines the methodology used in locating the defensive positions in Figure 6-1 and Figure 6-2, including adversary neutralization assumptions.

FSAR Impact:

The U.S. EPR FSAR will not be changed as a result of this question.

Technical Report Impact:

ANP-10295 “Security Design Features Technical Report,” Revision 1 incorporates the changes as described in the response.

Question 13.06-70:

(U) Sections 6.0, Defensive Positions (Pages 6-3 to 6-4 of ANP-10295, Rev. 0): Describe assumptions, technical bases, and details for lines of sight coverage of the vital island and structures boundaries (i.e., VA barriers) from DP indicated in Figures 6-1 and 6-2. Specifically, include assumptions regarding the ability of designated DP on the structures perimeter to engage adversaries and clarify whether any given portions of the VA barriers are within line of sights from multiple DP to ensure reliability of capabilities to interdict and neutralize adversaries.

(U) Regulatory Basis: Same as previously stated (i.e., Subpart B of Title 10 CFR (10 CFR) 52, § 52.47, 10 CFR 52.48, 10 CFR Part 73, and 10 CFR 73.55(b)). 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 US-EPR design incorporates proposed design features to protect target sets from the DBT. Line of sights from DP determines the effectiveness of overlapping fields of fire from DP to provide for reliability of interdiction and neutralization of adversaries. Additional information is needed to determine adequacy of Figures 6.1 and 6.2 DP and how AREVA evaluate the reliability of design for security response between the PA and VA.

(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 information (RAI) as appropriate to identify SGI (or security-related information) that reveals the specific details of security features incorporated in the US-EPR design. The RAI responses supplementing the DC Tier 1 document must be publicly available.*

Response to Question 13.06-70:

ANP-10295 was revised to add Appendix J, which defines the methodology used in locating the defensive positions in Figure 6-1 and Figure 6-2, which includes evaluation of the ability of defenders to observe structure boundaries based on the design certification configuration.

To address site-specific layout changes, ANP-10295 requires that the evaluation of the visual coverage be provided in the site-specific Security Assessment.

FSAR Impact:

The U.S. EPR FSAR will not be changed as a result of this question.

Technical Report Impact:

ANP-10295 “Security Design Features Technical Report,” Revision 1 incorporates the changes as described in the response.

Question 13.06-71:

(U) Section 7.0, Delay Features (Page 7-1 of ANP-10295, Rev. 0): Provide clarification on whether the walls, floors, and roofs of vital island structure are credited to provide security functions of delay or prevents access. Include in the response the following: (a) descriptions of credited security delay functions associated with each structural component of the VA boundaries; (b) state the technical bases and design assumptions to demonstrate that the structural components are sufficiently robust to meet the required minimum security delays needed based on mechanical or explosive breaching capabilities of the adversary characteristics of the DBT; and (c) clearly describe the assumptions, technical bases, results, and conclusions, and indicate credited security delays of VA structural components in ANP-10295.

(U) Regulatory Basis: Same as previously stated (i.e., Subpart B of Title 10 CFR (10 CFR) 52, § 52.47, 10 CFR 52.48, 10 CFR Part 73, and 10 CFR 73.55(b)). 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 structural features the vital island and structures that are relied on to meet security functions should be clearly identified. Technical bases and performance requirements must be described to understand how AREVA credited these features as physical barriers providing specific delay functions. Section 7 only discusses hardened and security design and performance requirements for exterior doors, interior doors, and equipment hatches. The discussion did not address security delays provided by structural walls and roofs that forms the VA barriers, and floors as applicable.

(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 information (RAI) as appropriate to identify SGI (or security-related information) that reveals the specific details of security features incorporated in the US-EPR design. The RAI responses supplementing the DC Tier 1 document must be publicly available.***

Response to Question 13.06-71:

ANP-10295, Section 1 has been revised to clarify that openings in the vital area boundary have access limiting features. The discussion of the delay capabilities in ANP-10295, Section 7 has been expanded to discuss assumed delay timing for doors, walls, and other openings.

FSAR Impact:

The U.S. EPR FSAR will not be changed as a result of this question.

Technical Report Impact:

ANP-10295 “Security Design Features Technical Report,” Revision 1 incorporates the changes as described in the response.

Question 13.06-72:

(U) Section 7.0, Delay Features (Page 7-1 of ANP-10295, Rev. 0): Describe technical assumptions and estimated minimum required adversaries task times to penetrate the vital island and structures exterior and interior walls based on the adversarial characteristics of the DBT. Specifically provide the technical bases or reference NRC accepted technical guidance that demonstrate why the walls and roofs of the vital island and structures can be credited as delays that allow security responders to interdict or neutralize adversaries.

(U) Regulatory Basis: Same as previously stated (i.e., Subpart B of Title 10 CFR (10 CFR) 52, § 52.47, 10 CFR 52.48, 10 CFR Part 73, and 10 CFR 73.55(b)). 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 US-EPR standard design incorporates proposed design features to protect the vital island and structures. Proposed design of physical security system credits designed of VA Island and structures to provide security functions of delays. Additional information is needed to evaluate adversary tasks times and demonstrate that the design and assumptions of delay features that provide security functions are bounding of all adversary task times for breaching based on capabilities of the DBT.

(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 information (RAI) as appropriate to identify SGI (or security-related information) that reveals the specific details of security features incorporated in the US-EPR design. The RAI responses supplementing the DC Tier 1 document must be publicly available.***

Response to Question 13.06-72:

ANP-10295 has been revised to add information in Appendix H for analyzing the potential for breaching of the nuclear island exterior walls using the adversarial characteristics of the DBT. Integrated security performance and acceptability is addressed in the site-specific Security Assessment.

FSAR Impact:

The U.S. EPR FSAR will not be changed as a result of this question.

Technical Report Impact:

ANP-10295 “Security Design Features Technical Report,” Revision 1 incorporates the changes as described in the response.

Question 13.06-73:

(U) Section 7.0, Delay Features (Page 7-1 of ANP-10295, Rev. 0): Describe assumptions regarding adversaries task times based on the planned US-EPR design for construction of the roofs and floors components of the VA boundaries. Include descriptions of technical assumptions that credited these building structural components. Describe how openings are protected to provide and meet required security delays.

(U) Regulatory Basis: Same as previously stated (i.e., Subpart B of Title 10 CFR (10 CFR) 52, § 52.47, 10 CFR 52.48, 10 CFR Part 73, and 10 CFR 73.55(b)). 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 73.2, definition for physical barriers requires that "openings in which are secured by grates, doors, or covers of constructions and fastening of sufficient strength such that the integrity of wall [ceilings and floors] is not lessened by any openings." The US-EPR design incorporates proposed design features to protect target sets from the DBT. Proposed physical security design credits features of the US-EPR standard design such as the vital island structural for delays that allows security response to interdict or neutralize adversaries. Additional information is needed on the assumptions of design features that are credited to provide specific security delay functions.

(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 information (RAI) as appropriate to identify SGI (or security-related information) that reveals the specific details of security features incorporated in the US-EPR design. The RAI responses supplementing the DC Tier 1 document must be publicly available.***

Response to Question 13.06-73:

ANP-10295, Section 7.0 has been revised to provide adversary delay assumptions and protection of passable openings.

FSAR Impact:

The U.S. EPR FSAR will not be changed as a result of this question.

Technical Report Impact:

ANP-10295 "Security Design Features Technical Report," Revision 1 incorporates the changes as described in the response.

Question 13.06-74:

(U) Section 8.2, Internal Surveillance (Page 8-2 of ANP-10295): Describe, if applicable, the design and performance requirements for applying low light technology for closed circuit television network that provide assessment and monitoring security functions.

(U) Regulatory Basis: Same as previously stated (i.e., Subpart B of Title 10 CFR (10 CFR) 52, § 52.47, 10 CFR 52.48, 10 CFR Part 73, and 10 CFR 73.55(b). 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. Application of low-light technology system is acceptable in accordance with 10 CFR 73.55(b)(6)(ii). Additional information is needed to establish design features incorporated in standard US-EPR design for assessment within the VA.

(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 information (RAI) as appropriate to identify SGI (or security-related information) that reveals the specific details of security features incorporated in the US-EPR design. The RAI responses supplementing the DC Tier 1 document must be publicly available.*

Response to Question 13.06-74:

The COL applicant is responsible for the security lighting. ANP-10295, Section 2.2 has been revised to clarify that design and performance requirements are addressed in the site-specific Security Assessment.

FSAR Impact:

The U.S. EPR FSAR will not be changed as a result of this question.

Technical Report Impact:

ANP-10295 “Security Design Features Technical Report,” Revision 1 incorporates the changes as described in the response.

Question 13.06-75:

(U) Section 8.2, Internal Surveillance (Page 8-2 of ANP-10295): Describe the design and performance requirements for interior intrusion detection system (IDS) and alarms for unauthorized access to VA at access points. Include in the response the following: (a) describe interior IDS for penetrations through vital barriers; (b) discuss of assumptions regarding detecting unauthorized access into the PA through other than VA normal and emergency access points; (c) describe how other penetrations or openings would be locked and alarmed; (d) describe if any assumptions for a maximum size of openings or penetrations in the VA barriers would not required physical barrier and alarmed; and (e) describe how the interior IDS is integrated with the internal surveillance system for assessment.

(U) Regulatory Basis: Same as previously stated (i.e., Subpart B of Title 10 CFR (10 CFR) 52, § 52.47, 10 CFR 52.48, 10 CFR Part 73, and 10 CFR 73.55(b)). 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 US-EPR design incorporates proposed design features to protect against DBT. Title 10 CFR 73.55(b)(9)(ii) and (iii) requires openings in VA barriers to be alarmed for detection of unauthorized access.

(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 information (RAI) as appropriate to identify SGI (or security-related information) that reveals the specific details of security features incorporated in the US-EPR design. The RAI responses supplementing the DC Tier 1 document must be publicly available.*

Response to Question 13.06-75:

ANP-10295, Section 1.0 has been revised to described what size opening is considered as requiring access control devices and intrusion detection. ANP-10295, Section 8.3 discusses surveillance following generation of an alarm by the IDS system.

The COL applicant is responsible for the perimeter intrusion detection system. ANP-10295, Section 2.2 has been revised to clarify that design and performance requirements are addressed in the site-specific Security Assessment.

FSAR Impact:

The U.S. EPR FSAR will not be changed as a result of this question.

Technical Report Impact:

ANP-10295 “Security Design Features Technical Report,” Revision 1 incorporates the changes as described in the response.

Question 13.06-76:

(U) Section 8.2, Internal Surveillance (Page 8-2 of ANP-10295): Clarify whether the US-EPR standard design for security includes the use of video capture and cameras for security assessment external of the VA barriers and interior of the VA structures. Describe the design and performance of physical security system providing assessment and surveillance functions. Include, in the response, the descriptions of system reliability requirements (e.g., secondary power supply, continuity signals, supervision of lines, tamper and trouble indications, etc.) that are similar to alarm and detection systems for assurance of system reliability.

(U) Regulatory Basis: Same as previously stated (i.e., Subpart B of Title 10 CFR (10 CFR) 52, § 52.47, 10 CFR 52.48, 10 CFR Part 73, and 10 CFR 73.55(b)). 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 descriptions of security features incorporated in the standard USEPR design provides a technical basis for determining adequacy of a physical protection system that will protect against the DBT and meeting regulatory requirements. A reliable and available engineered security assessment system provides assurance of assessment functions for initiating security response. AREVA indicated that COL applicant would determine placement of internal and external cameras. Description of design and performance requirements for internal surveillance system is within the scope of the DC. Real-time and play-back/recorded video images assessment may be applied of interior IDS and alarm assessment in accordance with 10 CFR 73.55(e)(7)(i)(C).

(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 information (RAI) as appropriate to identify SGI (or security-related information) that reveals the specific details of security features incorporated in the US-EPR design. The RAI responses supplementing the DC Tier 1 document must be publicly available.***

Response to Question 13.06-76:

ANP-10295, Sections 8.1 and 8.2 have been revised to clarify that the video cameras have video capture capability:

- Section 8.1 has been revised to describe the video surveillance on the exterior of the vital area barriers.

- Section 8.2 has been revised to describe the video surveillance on the interior of the vital areas.

The COL applicant is responsible for placement of internal and external surveillance equipment. ANP-10295, Section 8 has been revised to state that design and performance requirements are addressed in the site-specific Security Assessment.

FSAR Impact:

The U.S. EPR FSAR will not be changed as a result of this question.

Technical Report Impact:

ANP-10295 “Security Design Features Technical Report,” Revision 1 incorporates the changes as described in the response.

Question 13.06-77:

(U) Section 8.3, Safety-Related Areas Outside the Protected Areas (Page 8-2 of ANP 10925, Rev. 0): State specifically what are areas for the statement that "certain non-vital safety-related areas outside the protected area are protected by [as stated] . . ." Provide clarification and indicate what is meant by the statement that these areas do not have an impact on the plant's ability "to protect [as stated] within the first [as stated duration] but would not impact normal operations and longer term [as stated] functions."

(U) Regulatory Basis: Same as previously stated (i.e., Subpart B of Title 10 CFR (10 CFR) 52, § 52.47, 10 CFR 52.48, 10 CFR Part 73, and 10 CFR 73.55(b)). Complete and accurate information is needed in the application for meeting regulatory requirements. Specific area outside the PA should be stated.

(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 information (RAI) as appropriate to identify SGI (or security-related information) that reveals the specific details of security features incorporated in the US-EPR design. The RAI responses supplementing the DC Tier 1 document must be publicly available.*

Response to Question 13.06-77:

ANP-10295, Section 8.3 has been revised to add examples of the types of areas being addressed.

FSAR Impact:

The U.S. EPR FSAR will not be changed as a result of this question.

Technical Report Impact:

ANP-10295 "Security Design Features Technical Report," Revision 1 incorporates the changes as described in the response.

Question 13.06-78:

(U) Section 9.0, Alarm Station (Page 9-1 of ANP 10925, Rev. 0): Provide descriptions of design and performance of physical security systems that will reside within CAS and SAS. Provide as a minimum the descriptions of design and performance requirements and conceptual design block diagram of systems and components within the CAS and SAS and their interface with plant systems (public announcement system, emergency exits, access control features, active barriers, primary and secondary power, etc.) and between CAS and SAS. Discuss evaluation and resulting design and performance requirements of remoteness and spatial separations and design for protection against single act that could lead to loss of security functions of both the CAS and SAS. As appropriate, clearly indicate what would be required as COL information item for the COL applicant. Correct to indicate "CAS" in lieu of "SAS" in the last sentence in Section 9.1,

(U) Regulatory Basis: Same as previously stated (i.e., Subpart B of Title 10 CFR (10 CFR) 52, § 52.47, 10 CFR 52.48, 10 CFR Part 73, and 10 CFR 73.55(b)). Title 10 CFR 73.55(i)(4)(i) and (iii) requires design against single act the can disable both alarm stations and provisions for equal and redundant CAS and SAS. The descriptions of security features incorporated in the standard US-EPR design provides the technical basis for determining adequacy of a physical protection system that will protect against the DBT and meeting regulatory requirements. The design of physical security systems within the CAS and SAS are within the scope of the DC.

(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 information (RAI) as appropriate to identify SGI (or security-related information) that reveals the specific details of security features incorporated in the US-EPR design. The RAI responses supplementing the DC Tier 1 document must be publicly available.***

Response to Question 13.06-78:

ANP-10295, Section 9.3 has been added to address redundancy and separation requirements for the alarms stations. The design and performance requirements for the CAS and SAS is addressed in the site-specific Security Assessment, section D.11.

"SAS" in ANP-10295, Section 9.1 has been corrected to "CAS."

ANP-10295 is incorporated by reference into the requirements of U.S. EPR FSAR Tier 2, Section 13.6. In addition, the U.S. EPR FSAR Tier 2, Section 13.6.1 will be revised to add Item 8:

> "The secondary alarm station will be functionally equivalent to the central alarm station. The central alarm station and the secondary alarm station will be protected, designed, and equipped to equivalent standards."

The implementation of the requirements from U.S. EPR FSAR Tier 2, Section 13.6 is already addressed by U.S. EPR FSAR Tier 2, Table 1.8-2, COL Item 13.6-3; therefore, no additional COL Item is required.

FSAR Impact:

U.S. EPR FSAR Tier 2, Section 13.6.1 will be revised as described in the response and indicated on the enclosed markup.

Technical Report Impact:

ANP-10295 “Security Design Features Technical Report,” Revision 1 incorporates the changes as described in the response.

Question 13.06-79:

(U) Section 10, Insider Mitigation (Page 10-1 of ANP-10925, Rev. 0): Provide assumptions and technical basis for identified list of areas that requires monitoring in Section 10.1, Surveillance. Specifically address how "sabotage sensitive areas" are determined and describe the design and performance requirements of monitoring within and/or exterior of sensitive areas and interface with CAS/SAS alarm, video capture, and assessment capabilities.

(U) Regulatory Basis: Same as previously stated (i.e., Subpart B of Title 10 CFR (10 CFR) 52, § 52.47, 10 CFR 52.48, 10 CFR Part 73, and 10 CFR 73.55(b)). Complete and accurate information is required of application for meeting regulatory requirements. Physical security systems are relied on by an insider program to deter or detect and respond to insider threat.

(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 information (RAI) as appropriate to identify SGI (or security-related information) that reveals the specific details of security features incorporated in the US-EPR design. The RAI responses supplementing the DC Tier 1 document must be publicly available.***

Response to Question 13.06-79:

ANP-10295, Section 10.1 has been revised to include an explanation of selection considerations. The design and performance requirements of the internal and external video surveillance systems are the responsibility of the COL applicant and are addressed in the site-specific Security Assessment.

FSAR Impact:

The U.S. EPR FSAR will not be changed as a result of this question.

Technical Report Impact:

ANP-10295 "Security Design Features Technical Report," Revision 1 incorporates the changes as described in the response.

Question 13.06-80:

(U) Section 11, Preliminary Target Sets (Page 11-1 of ANP-10295, Rev. 0): General Comment - Restate the title of Section 11 to delete "Preliminary" and provide alternative title to provide finality of target sets information based the US-EPR design of engineered reactor safety systems within the scope of the DC. Clarify that the COL information item proposed is intended for a COL applicant to finalize the identified target sets based on required COL applicant design of systems outside the scope of the DC (e.g., SBODG, etc.) and COL applicant's proposed operations programs, to identify a final target sets (including credited operator actions) that must be protected. Clarify that it is not the intent, as implied by "preliminary target set," that a COL applicant would change systems target sets identified based on the certified US-EPR standard design.

(U) Regulatory Basis: Same as previously stated (i.e., Subpart B of Title 10 CFR (10 CFR) 52, § 52.47, 10 CFR 52.48, 10 CFR Part 73, and 10 CFR 73.55(b)). Complete and accurate information is required of application for meeting regulatory requirements. Target sets are combination of safety-related SSC and non-safety systems based on US-EPR design that are required to be protected by a design of a physical protection system to prevent acts of radiological sabotage. On the basis that the design of safety-related SSC and non-safety systems within the scope of the DC is not subject to change by a COL applicant (unless address by departure from certified design), the target sets based on the design of the reactor systems and configurations the US-EPR standard design for certification would be considered final for the DC. Within the scope of the DC, the identification of target sets provides the technical basis (i.e., what is required to be protected) for the US-EPR standard design of physical protection systems and features proposed within the vital island and structures.

(U) The use of "preliminary" implies that the target sets based on design of the reactor systems and configurations is not final for the scope of the DC. AREVA commits to establishing a COL information items that will require a COL applicant to provide a final target sets. Clarification is need that the final target set would be based on additional COL information items for design of safety-related SSC or site specific systems and operational programs (i.e., crediting operator actions – administrative controls) that are outside the scope of the DC. The combinations of that established by the DC and that to be provided by COL that will establish a final target sets which the COL applicant is required to establish, and demonstrate, a physical protection system capable of protecting against acts of radiological sabotage with a high assurance of adequate protection.

Response to Question 13.06-80:

ANP-10295, Section 11.0 has been revised to remove the word "Preliminary" and to clarify the relationship of target sets under design certification and the operational security program in the COL application.

Target sets were developed to assist AREVA NP personnel during U.S. EPR site layout and design in evaluating vulnerabilities and determining plant areas having the most value to adversaries. ANP-10295, Appendix F has been revised to include the target sets used in the development of the U.S. EPR security features.

Target sets are an integral component of the security drills and exercise operational program and thus are subject to updating and maintenance over the licensed lifetime of the plant.

Therefore, target sets are not considered by AREVA NP to be within the scope of the U.S. EPR design certification.

FSAR Impact:

The U.S. EPR FSAR will not be changed as a result of this question.

Technical Report Impact:

ANP-10295 “Security Design Features Technical Report,” Revision 1 incorporates the changes as described in the response.

Question 13.06-81:

(U) Section 11, Preliminary Target Sets (Page 11-1 of ANP-10295, Rev. 0): Clarify that the preliminary target sets indicated are based on evaluation of safety-related SSC and risk-significant non-safety systems required for all plant modes. Provide a complete and accurate list of standard target sets for the US-EPR design that includes consideration of the vital equipment for all plant operation modes and risk-insights from risk and hazards analyses. In addition, discuss what and how a COL applicant would need to finalize the preliminary target sets that are based on the standard US-EPR design (that are not site specific strategies or screening of achievable target sets). Specifically, other than COL information item for SBODG, discuss what site specific conditions would result in changes the preliminary target sets established for the standard US-EPR design. Discuss the safety or security significance of using a preliminary target sets to determine the requirements of internal DP and delays indicated in ANP-10295 that is intended to protect target sets elements within the vital island and how the internal DP and delays features would be affected by site specific conditions, if any.

(U) Regulatory Basis: Same as previously stated (i.e., Subpart B of Title 10 CFR (10 CFR) 52, § 52.47, 10 CFR 52.48, 10 CFR Part 73, and 10 CFR 73.55(b)). Title 10 CFR 73.2, Definitions, states that vital equipment is any "equipment, system, device, or material, the failure, destruction, or release of which could directly or indirectly endanger the public health and safety by exposure to radiation. Equipment or systems which would be required to function to protect public health and safety following such failure, destruction, or release are also considered to be vital." 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." To adequately protect against the DBT of radiological sabotage at all time, an applicant must first identify a complete and accurate list of vital equipment from identified FSAR SSC based on all pant modes. Subsequent systematic development of a complete and accurate target sets (based on identified vital equipment and as appropriate risk-significant insights information), a design of a physical protection systems and security programs are provided to protect against the DBT and to meet general performance requirements of 10 CFR 73.55.

(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 information (RAI) as appropriate to identify SGI (or security-related information) that reveals the specific details of security features incorporated in the US-EPR design. The RAI responses supplementing the DC Tier 1 document must be publicly available.***

Response to Question 13.06-81:

ANP-10295, Section F.6 has been revised to clarify that a PRA expert participated on the Target Set Expert Review Panel. ANP-10295, Section F.1 was revised to state that PRA insights were incorporated in the target sets.

Target sets are not within the scope of the U.S. EPR design certification. Target sets are an integral component of the security drills and exercise operational program and thus are subject to updating and maintenance over the licensed lifetime of the plant. Target sets also require a comprehensive evaluation of the site, including certain features to be determined by the COL

applicant such as supplemental systems or operator actions beyond those credited in the design certification evaluation.

However, target sets are beneficial in establishing an overall defensive strategy during the design certification activities. Therefore, target sets were developed to assist AREVA NP personnel in evaluating the defensibility of the site and to assist AREVA NP personnel in evaluating optimal physical locations for defensive positions. ANP-10295, Appendix F contains these target sets and the method of their development, which is consistent with NEI 03-11 "Guidance for the Preparation and Conduct of Force-on-Force Exercises."

For these reasons, target sets have been included in ANP-10295, Appendix F, which were used in the development of the U.S. EPR security features. These target sets serve as the basis for the COL applicant development of the site-specific target sets. The COL Applicant may incorporate these target sets or may modify these targets sets as additional site-specific details require.

FSAR Impact:

The U.S. EPR FSAR will not be changed as a result of this question.

Technical Report Impact:

ANP-10295 "Security Design Features Technical Report," Revision 1 incorporates the changes as described in the response.

Question 13.06-82:

(U) Section 12, Acceptance Testing (Page 12-1 of ANP-10925, Rev. 0): Clarify that the title "acceptance testing" refers to all methods (e.g., inspection, test, and analyses - ITA) for verification of ITAAC and that "acceptance test" is not intended to refer to only performing testing of systems for acceptances of systems operability by a COL holder or licensee. Consider establishing consistency in the used of term within ANP-10925, Appendix G, "Suggested Inspections and Tests," and DCD Tier 2, FSAR Chapter 14 use of "Test Abstracts" to describe ITA in support of Tier 1 description of ITAAC (i.e., Inspection, Test, and Analyses).

(U) Regulatory Basis: Same as previously stated (i.e., Subpart B of Title 10 CFR (10 CFR) 52, § 52.47, 10 CFR 52.48, 10 CFR Part 73, and 10 CFR 73.55(b)). Complete and accurate information is required of application for meeting regulatory requirements. Descriptions and discussions in Section 12 and Appendix G of ANP-10295 are intended to describe preliminary or suggested ITA that supports Tier 1 description of ITAAC. The requirement for COL applicant to develop required ITA has been identified as a COL information item in FSAR Chapter 14.3 that a COL applicant that references the U.S. EPR design certification will provide ITAAC for emergency planning, physical security, and site-specific portions of the facility that are not included in the Tier 1 ITAAC associated with the certified design (10 CFR 52.80(a)). Review and verification of adequate analyses from detail design is a method that will be applied by a COL holder to verify ITAAC. Information in Tier 2, supporting Tier 1 description of ITAAC, is required. Specific comments on AREVA descriptions of test abstracts are reviewed under as information submitted for Chapter 14.3.12, physical security ITAAC.

(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 information (RAI) as appropriate to identify SGI (or security-related information) that reveals the specific details of security features incorporated in the US-EPR design. The RAI responses supplementing the DC Tier 1 document must be publicly available.***

Response to Question 13.06-82:

ANP-10295, Section 12.0 has been revised to clarify that acceptance tests in Appendix G were focused on standardized methods of closing ITAAC and is not intended to be an exhaustive list of system acceptance tests for security systems. The title of Appendix G was revised as suggested.

FSAR Impact:

The U.S. EPR FSAR will not be changed as a result of this question.

Technical Report Impact:

ANP-10295 "Security Design Features Technical Report," Revision 1 incorporates the changes as described in the response.

Question 13.06-83:

(U) Appendix A, Vital Equipment List (Pages A-2 through A-33 of ANP-10925, Rev. 0): This RAI restates and/or supplement the request for information previously issued in RAI No. 92, Question No. 13.06-09. Provide descriptions of a complete and accurate list of vital equipment for all plant modes. Specifically provide a complete list of vital equipment based on the following: (a) address all plant modes for the development of vital equipment and identify vital equipment for each plant mode, including cold shutdown and refueling; (b) include in the response identification of all equipment that meets definition of vital equipment for each plant mode; (c) justify any equipment screened from the vital equipment list, if excluded within a plant mode; (d) describe how maintenance conditions were accounted for in the development of the target sets; (e) provide the vital equipment listing using Table 3.2.2-1 of the U.S. EPR FSAR with an additional column that indicates the vital classification and associated plant modes; (f) identify equipment that are screened from the Vital Equipment List because of the NUREG-1178 assumption of "achieving and maintaining hot shutdown for a minimum of 8 hours from the time of reactor trip," and provide justification for removing this equipment (if removed); and (g) clarify whether all 1E cables are considered vital equipment and, if not included, provide technical basis for their exclusion.

(U) Regulatory Basis: Same as previously stated (i.e., Subpart B of Title 10 CFR (10 CFR) 52, § 52.47, 10 CFR 52.48, 10 CFR Part 73, and 10 CFR 73.55(b)). Title 10 CFR 73.2, Definitions, states that vital equipment is any "equipment, system, device, or material, the failure, destruction, or release of which could directly or indirectly endanger the public health and safety by exposure to radiation. Equipment or systems which would be required to function to protect public health and safety following such failure, destruction, or release are also considered to be vital." 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." To adequately protect against the DBT of radiological sabotage at all time, an applicant must first identify a complete and accurate list of vital equipment from identified FSAR SSC based on all pant modes. Subsequent systematic development of a complete and accurate target sets (based on identified vital equipment and as appropriate risk-significant insights information), a design of a physical protection systems and security programs are provided to protect against the DBT and to meet general performance requirements of 10 CFR 73.55.

(U) Development of vital equipment list based only guidance of NUREG-1178, Vital Equipment/Area Guidelines Study: Vital Area Committee Report, published 1988, only partially address vital equipment associated full power plant mode of operations. Protection against the DBT radiological sabotage in accordance with 10 CFR 73.1 is not limit to full power operations plant mode only and a physical protection systems and programs must be provide and maintained at all times. AREVA response to RAI 13.06-09, that only NUREG-1178 was used as the technical basis for development and identify of a complete and accurate list of vital equipment is less than adequate to meet regulatory requirements.

(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 information (RAI) as appropriate to identify SGI (or security-related information) that reveals the specific details of security features incorporated in the US-EPR design. The RAI responses supplementing the DC Tier 1 document must be publicly available.***

Response to Question 13.06-83:

(a) , (b), (c), (e) (Also addressed in Questions 13.06-86, and 13.06-94.)

After further review of NUREG-1178 “Vital Equipment/Area Guidelines Study: Vital Area Committee Report” guidance, AREVA NP agrees that there are certain conditions that NUREG-1178 may require additional modes be addressed, and therefore has expanded the vital equipment list to include all modes. ANP-10295, Appendix A has been revised to incorporate additional equipment to address the additional modes.

(d)

The U.S. EPR incorporates a four safety train design and target sets that include multiple components. The maintenance status of a division of equipment is considered when evaluating the outcome of scenarios to demonstrate that one or more components from a target set remain functional. Normal industry practices for force on force exercises are applied to the scenario process.

Single failure is a philosophy for safety-related system design under 10 CFR 50. Safety-related systems are designed such that no single failure will cause the system to fail to perform its function. Independent of the basis for the design, the vital equipment list is generated from the equipment exists in the final design that is necessary to assure safe shutdown. No equipment otherwise necessary for the safe shutdown was excluded solely due to random failure.

The vital equipment list is a list of equipment required to obtain and maintain a safe operating configuration after an event. This list is subject to a set of criteria established in NUREG-1178. Assumption 9 and the discussion in the last two sentences of NUREG-1178, Section 6.1.9 indicates that it was not the NRC’s intention to include cables or cable trays as vital equipment:

> “Cable runs in trays and conduit need not be protected as vital unless cables necessary for safe shutdown capability are individually identifiable and the identification is reasonably accessible.
>
> The approach that cable runs in trays and conduit need not be protected requires the acceptance of some degree of cable vulnerability. However, damage control can compensate for the loss of cable more readily that it can compensate for the loss of vital equipment served by those cables.”

NUREG-1178 addresses certain types of failures including random failures but does not include adversarial actions as a deterministic factor. Hostile actions as a cause of damage is addressed by the DBT and target sets. Target set component determinations are separate from the vital equipment list component determinations. In SECY 08-09, the Commission confirmed that the vital equipment list relates only to safe shutdown, while protection against the DBT "radiological" sabotage is provided by the protection of target sets:

> **“Comment Summary:**
>
> One commenter at the November 15, 2006, public meeting asked for a clarification of the relationship between target sets and vital equipment. The NRC responded that the difference between vital equipment and target sets would be that target sets include vital

equipment, but vital equipment does not always contain everything that may be part of a target set. Target sets would be the combination of equipment, systems, even personnel, that would need to be disabled or destroyed in order to cause a problem. So, the commenter deduced that vital equipment would be part of the target set, but the target set itself may include additional things to it that would also be protected.

The NRC explained that requiring licensees to protect target sets protects those systems, personnel, or equipment that are necessary for a safe shutdown. The NRC concluded that vital equipment is related to safe shutdown and target sets are related to release. Another commenter at the November 29, 2006, public meeting asked if a licensee can lose vital equipment without either losing the ability for safe shutdown or losing a target set. The NRC responded that yes, it is possible.

NRC Response:

Vital equipment is related to safe shutdown while target sets are related to release of radioactive material (or significant core damage and spent fuel sabotage). Therefore, the physical protection program design criteria in 10 CFR 73.55(b) focuses on prevention of significant core damage and spent fuel sabotage and the ability to effectively implement the protective strategy as performance-criteria resulting from the protection of target sets."

The cabling, while not separately vital equipment, is incorporated as a component of the overall subsystem listed in the target set.

To facilitate the target set development process, AREVA NP chose a timeframe for achieving and maintaining hot shutdown consistent with the assumptions and evaluations performed in the PRA process. This results in a 24-hour timeframe, not an 8-hour timeframe from the time of reactor trip. Because the timeframe was longer than that required by NUREG-1178, the resultant target set exceeds the minimum requirements.

(f)

To facilitate the target set development process, AREVA NP chose a timeframe for achieving and maintaining hot shutdown consistent with the assumptions and evaluations performed in the PRA process. This results in a 24-hour timeframe not an 8-hour timeframe from the time of reactor trip. Because the timeframe was longer than that required by NUREG-1178, the resultant target set exceeds the minimum requirements.

(g)

AREVA NP developed U.S. EPR FSAR Tier 1, Section 3.1 and U.S. EPR FSAR Tier 2, Section 13.6 design certification material based on the required material identified in the August 2007 Draft of Standard Review Plan (SRP) Section 13.6.2, as well as other regulatory guidance such as NUREG-1178, "Vital Equipment/Area Guidelines Study: Vital Area Committee Report."

NUREG-1178 (1980) Section 6.1.9 states:

> "Cable runs in trays and conduit need not be protected as vital unless cables necessary for safe shutdown capability are individually identifiable and the identification is reasonably accessible.
>
> The approach that cable runs in trays and conduit need not be protected requires the acceptance of some degree of cable vulnerability. However, damage control can compensate for the loss of cable more readily that it can compensate for the loss of vital equipment served by those cables."

During the public comment process for the revision to 10 CFR 73, AREVA NP questioned the continued applicability of NUREG-1178 as a basis for vital equipment definition. The NRC responded in SECY 08-09 that the information remains acceptable unless otherwise stated by the Commission. Because the Commission has not stated that NUREG-1178 is not acceptable, AREVA NP considers that the NUREG-1178 remains a valid basis to develop a vital equipment list that complies with 10 CFR 73.55(b)(3)(i). This conclusion is further supported since the Commission has not required operating reactors to backfit existing vital equipment lists.

All equipment in the identified vital areas is not vital equipment. All vital equipment is in a vital area, and all equipment necessary to support the function of the vital equipment is in a vital area. However, there are components that do not meet the definition of vital equipment that are also found in vital areas. Supplemental information will be included in ANP-10295, Appendix A that clarifies whether the specific components are or are not considered vital equipment.

The vital equipment list contains the complete list of equipment whose active function is required to prevent damage to irradiated fuel. Passive equipment that support the operation of the listed vital equipment (e.g., piping, manual valves, pressure relief valves, check valves, control cable, power cables, cable trays, structures) are included in vital areas.

Piping and other passive components defining the pressure boundary between pieces of active equipment listed on the vital equipment list are also considered vital equipment. Portions of a piping system that is normally isolated (e.g., by valves, check valves) and whose failure would not significantly affect the pressure boundary of the system alignment are not considered as vital.

Auxiliaries necessary to support the completion of the vital function (e.g., power, control circuitry, ventilation, cooling water) are considered an integral part of the listed vital equipment. Trip sensors, cabinets housing protective systems, diverse scram systems, pressure retaining components, water sources, valves, pumps, power supplies, and control systems and other related protective system equipment integral to the function of the listed vital equipment are considered vital to the extent necessary to support the completion of the vital equipment's function. Although an exhaustive list of supporting components is not specifically included in the vital equipment list, they are treated as vital.

NUREG-1178 states in assumption 2 that "no credit is given for the protective or mitigating capabilities of the pressure vessel or the containment." During the development of the vital equipment list, containment isolation valves were assumed not to have isolated the system. Containment isolation valves that meet the vital equipment definition are included in the vital equipment list even though their isolation function is not credited.

FSAR Impact:

The U.S. EPR FSAR will not be changed as a result of this question.

Technical Report Impact:

ANP-10295 “Security Design Features Technical Report,” Revision 1 incorporates the changes as described in the response.

Question 13.06-84:

(U) Appendix A, Vital Equipment List (Pages A-2 through A-33 of ANP-10925, Rev. 0): This RAI restates and/or supplement the request for information previously issued in RAI No. 92, Question No. 13.06-11. Describe how single failure, as defined in Appendix A to 10 CFR Part 50, is used in the determination of the Vital Equipment List. Provide descriptions and listing of what FSAR identified SSC were screened from the final vital equipment list and the technical bases for screening out that equipment.

(U) Regulatory Basis: Same as previously stated (i.e., Subpart B of Title 10 CFR (10 CFR) 52, § 52.47, 10 CFR 52.48, 10 CFR Part 73, 10 CFR 73.55(b), 10 CFR 73.2, and Title 10 CFR 73.55(b)(3)(i)). To adequately protect against the DBT of radiological sabotage at all time, an applicant must first identify a complete and accurate list of vital equipment from identified FSAR SSC based on all pant modes. Subsequent systematic development of a complete and accurate target sets (based on identified vital equipment and as appropriate risk-significant insights information), a design of a physical protection systems and security programs are provided to protect against the DBT and to meet general performance requirements of 10 CFR 73.55. AREVA response to RAI 13.6-11 stated that random equipment failures are excluded from consideration as stated in Assumption 7 of NUREG-1178, and disagrees with replacing criteria from the NPP Format and Content Guide. The Nuclear Power Plant Security Assessment Format and Content Guide Sections 7.5 and 7.15 provides the most current recommended guidance applicable to complete and accurate identification vital and safety significant systems (elements of target sets) for subsequent identification of complete and accurate target sets requiring protection from radiological sabotage.

(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 information (RAI) as appropriate to identify SGI (or security-related information) that reveals the specific details of security features incorporated in the US-EPR design. The RAI responses supplementing the DC Tier 1 document must be publicly available.***

Response to Question 13.06-84:

Single failure is a philosophy for safety-related system design under 10 CFR Part 50. Safety-related systems are designed such that no single failure will cause the system to fail to perform its function. Independent of the basis for the design, the vital equipment list is generated from the equipment in the final design that is necessary to perform safe shutdown.

Screening of target set components is addressed in the Response to Question 13.06-92.

FSAR Impact:

The U.S. EPR FSAR will not be changed as a result of this question.

Technical Report Impact:

ANP-10295 “Security Design Features Technical Report,” Revision 1 incorporates the changes as described in the response.

Question 13.06-85:

(U) Appendix A, Vital Equipment List (Pages A-2 through A-33 of ANP-10925, Rev. 0): This RAI restates and/or supplement the request for information previously issued in RAI No. 92, Question No. 13.06-24. In RAI 13.06-24, the staff requested AREVA to discuss how PRA fire scenarios have been considered in the development of the list of vital equipment. The following are supplemental questions based on AREVA response: (a) provide technical basis supporting justifications that a deliberate fire caused by adversaries actions can be defined as a random failure, and (b) Identify equipment that were excluded from the Vital Equipment List based on the assumption of random failure, immediate operator action, and "bounding" assumptions (i.e. flood barriers, pressure boundaries, etc…) and the technical bases for such exclusions.

Regulatory Basis: Same as previously stated (i.e., Subpart B of Title 10 CFR (10 CFR) 52, § 52.47, 10 CFR 52.48, 10 CFR Part 73, 10 CFR 73.55(b), 10 CFR 73.2, and Title 10 CFR 73.55(b)(3)(i)). To adequately protect against the DBT of radiological sabotage at all time, an applicant must first identify a complete and accurate list of vital equipment from identified FSAR SSC based on all pant modes. Subsequent systematic development of a complete and accurate target sets (based on identified vital equipment and as appropriate risk-significant insights information), a design of a physical protection systems and security programs are provided to protect against the DBT and to meet general performance requirements of 10 CFR 73.20, 73.45, and 73.55. AREVA response to RAI 13.06-24, stated that" PRA fire scenarios (U.S. EPR FSAR Tier 2, Table 19.1-66) were evaluated to ensure that "the fire scenarios listed in U.S. EPR FSAR Tier 2, Table 19.1-66 were either bounded by generic Vital Areas (those listed as vital areas without specific equipment being identified), were invalidated by immediate operator actions specified in ANP-10295 (SGI), Appendix C, or were bounded by equipment on the Vital Equipment List.." Equipment meeting vital equipment definition in accordance with 10 CFR 73.2 must be included in the Vital Equipment List. Tier 2 documentations must provide sufficient technical bases and information for all vital equipment to verify and demonstrate that all vital equipment based on all plant modes are within designated VA boundaries

(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 information (RAI) as appropriate to identify SGI (or security-related information) that reveals the specific details of security features incorporated in the US-EPR design. The RAI responses supplementing the DC Tier 1 document must be publicly available.***

Response to Question 13.06-85:

See the Response to Question 13.06-83, Part d.

Question 13.06-86:

(U) Appendix A, Vital Equipment List (Pages A-2 through A-33 of ANP-10925, Rev. 0): This RAI restates and/or supplement the request for information previously issued in RAI No. 92, Question No. 13.06-25. Provide further clarification of the process used to develop a final and complete and accurate list of vital equipment for the standard design in ANP-10295, and describe how it provides assurance that all vital equipment for the US-EPR standard design is identified. Specifically, identify and list all vital equipment for all plant modes.

(U) Regulatory Basis: Same as previously stated (i.e., Subpart B of Title 10 CFR (10 CFR) 52, § 52.47, 10 CFR 52.48, 10 CFR Part 73, and 10 CFR 73.55(b)). Title 10 CFR 73.2, Definitions, states that vital equipment is any "equipment, system, device, or material, the failure, destruction, or release of which could directly or indirectly endanger the public health and safety by exposure to radiation. Equipment or systems which would be required to function to protect public health and safety following such failure, destruction, or release are also considered to be vital." 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." To adequately protect against the DBT of radiological sabotage at all time, an applicant must first identify a complete and accurate list of vital equipment from identified FSAR SSC based on all plant modes. Subsequent systematic development of a complete and accurate target sets (based on identified vital equipment and as appropriate risk-significant insights information), a design of a physical protection systems and security programs are provided to protect against the DBT and to meet general performance requirements of 10 CFR 73.20, 73.45, and 73.55.

(U) Development of vital equipment list based only guidance of NUREG-1178, Vital Equipment/Area Guidelines Study: Vital Area Committee Report, published 1988, only partially address vital equipment associated full power operations plant mode. Protection against the DBT radiological sabotage in accordance with 10 CFR 73.1 is not limit to full power operations plant mode and a physical protection systems and programs must be provided and maintained at all times in accordance with 10 CFR 73.55(b)(3)(i).

(U) In response to RAI 13.06-25, AREVA stated that NUREG-1178 was used to provide the conditions under which the vital equipment list was selected. AREVA then identified equipment required to meet the assumptions of NUREG-1178, which was aided by previous work to identify a safe shutdown list. The safe shutdown list only considered safety-related equipment to support BTP 5-4 requirements. Thermal/hydraulic and safety analysis calculations were reviewed to verify equipment selected was appropriate and capable of meeting the required end state. In addition, the appropriate system description documents (SDD), electrical load listing, electrical one-line diagrams, and P&IDs were used to verify the selected equipment capabilities and features. Supporting systems were identified based on interface documents and were included in the Vital Equipment List. Finally, general arrangement documents along with SDDs were used to identify equipment physical location. The electrical buses identified electrically support the vital equipment identified. Those vital areas that did not have "specific KKS identifiers" address support areas (e.g., main control room) or areas that have other capabilities (e.g., communications). These types of areas are based on the assumptions identified in NUREG-1178. In AREVA response, the staff noted that BTP 5-4, "Design Requirement of the Residual Heat Removal System," addresses residual heat removal system's ability to take the reactor from normal operating conditions to cold shutdown. This BTP does not address the identification of vital equipment for all plant modes. The RAI response was less than adequate.

(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 information (RAI) as appropriate to identify SGI (or security-related information) that reveals the specific details of security features incorporated in the US-EPR design. The RAI responses supplementing the DC Tier 1 document must be publicly available.*

Response to Question 13.06-86:

See the Response to Question 13.06-83.

Question 13.06-87:

(U) Appendix D, Internal Defensive Positions (Pages D-1 through D-11 of ANP-10925, Rev. 0): Provide clarification for the designations of internal defensive positions (e.g., Y, C, N, M, A1, A2, G1, G2, etc.). Describe and illustrate that adversary pathways and deployment of security responders to interdict and neutralize adversaries based on access to the vital island to demonstrate the layered protection provided for defense-in-depth protection of target sets equipment.

(U) Regulatory Basis: Same as previously stated (i.e., Subpart B of Title 10 CFR (10 CFR) 52, § 52.47, 10 CFR 52.48, 10 CFR Part 73, and 10 CFR 73.55(b)). 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. Complete and accurate information is needed in the application for meeting regulatory requirements. Adversary pathways analyzed by AREVA, and resulting standard design for placement of delay barriers and interior DP for deployment of security responders provides demonstration of defense-in-depth and layered-protection provided to interdict and neutralize adversaries.

(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 information (RAI) as appropriate to identify SGI (or security-related information) that reveals the specific details of security features incorporated in the US-EPR design. The RAI responses supplementing the DC Tier 1 document must be publicly available.*

Response to Question 13.06-87:

The designation of internal defensive positions by letter identifier is solely to provide for clearer communication of individual physical locations. A single area may have several defensive positions and unique identifiers were assigned for clarity. In some cases, a number was added to the letter designator as a tool to indicate that several defensive positions are located in close proximity.

Description and illustration of adversary pathways and deployment of security responders to interdict and neutralize adversaries based on access to the vital island and the demonstration the layered protection provided for defense-in-depth protection of target sets equipment is addressed in the site-specific Security Assessment.

FSAR Impact:

The U.S. EPR FSAR will not be changed as a result of this question.

Question 13.06-88:

(U) Appendix D, Internal Defensive Positions (Pages D-1 to D-11): Describe the design and performance requirements for internal DP indicated (i.e., ballistic and blast resistant capabilities). Clarify whether design of fixed DP integrates the ballistic protection capabilities with the delay feature described in Appendix E, specifically associated with the physical barrier to protect against possible hand thrown explosives.

(U) Regulatory Basis: Same as previously stated (i.e., Subpart B of Title 10 CFR (10 CFR) 52, § 52.47, 10 CFR 52.48, 10 CFR Part 73, and 10 CFR 73.55(b)). 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 US-EPR design includes DP and barriers internal of vital structures to protect target sets from the DBT and clarification of how design features provided will protect security responders against explosives within the capabilities of the DBT.

(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 information (RAI) as appropriate to identify SGI (or security-related information) that reveals the specific details of security features incorporated in the US-EPR design. The RAI responses supplementing the DC Tier 1 document must be publicly available.*

Response to Question 13.06-88:

ANP-10295, Section 6.0 has been revised to address ballistic and blast resistant capabilities of the defensive positions.

FSAR Impact:

The U.S. EPR FSAR will not be changed as a result of this question.

Technical Report Impact:

ANP-10295 “Security Design Features Technical Report,” Revision 1 incorporates the changes as described in the response.

Question 13.06-89:

(U) Appendix E, Internal Delay Features (Pages E-1 to E-14): Provide design and performance requirements for location of barriers that protect DP against possible hand thrown explosives. Specifically, if applicable, describe the design requirements for a minimum distance for installing physical barriers that would provide the protection of a security responder behind the types of DP indicated. Also describe assumptions and how explosive effects in interior structures were considered in protecting a security responder.

(U) Regulatory Basis: Same as previously stated (i.e., Subpart B of Title 10 CFR (10 CFR) 52, § 52.47, 10 CFR 52.48, 10 CFR Part 73, and 10 CFR 73.55(b)). 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 US-EPR design incorporates proposed DP and barriers internal of structures to protect target sets from the DBT. Additional information is need for determining assumptions and design basis for physical barriers against hand thrown explosives for protection of security responders.

(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 information (RAI) as appropriate to identify SGI (or security-related information) that reveals the specific details of security features incorporated in the US-EPR design. The RAI responses supplementing the DC Tier 1 document must be publicly available.***

Response to Question 13.06-89:

ANP-10295, Appendix E has been revised to address the design considerations in defensive position resistance to hand thrown explosives.

FSAR Impact:

The U.S. EPR FSAR will not be changed as a result of this question.

Technical Report Impact:

ANP-10295 “Security Design Features Technical Report,” Revision 1 incorporates the changes as described in the response.

Question 13.06-90:

(U) Appendix E, Internal Delay Features (Pages E-1 to E-14): Describe design and performance requirements for the design of plant security system, including interface with plant systems) to provide capabilities to deploy security features (i.e., active barriers, dispensable delay systems, or other systems) and security lock down for access points in response to postulated attack scenarios of the vital structures.

(U) Regulatory Basis: Same as previously stated (i.e., Subpart B of Title 10 CFR (10 CFR) 52, § 52.47, 10 CFR 52.48, 10 CFR Part 73, and 10 CFR 73.55(b)). 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 US-EPR design incorporates proposed delay features as a part of a physical protection system protecting target sets from the DBT. The design and performance requirements for activated barriers and controls are not sufficiently described for detail design or establishing technical basis for ITAAC.

(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 information (RAI) as appropriate to identify SGI (or security-related information) that reveals the specific details of security features incorporated in the US-EPR design. The RAI responses supplementing the DC Tier 1 document must be publicly available.*

Response to Question 13.06-90:

ANP-10295, Appendix E has been revised to address the design considerations in interfacing with the CAS and SAS. The site-specific Security Assessment, Appendix D.13 contains the design criteria for the internal delay features.

FSAR Impact:

The U.S. EPR FSAR will not be changed as a result of this question.

Technical Report Impact:

ANP-10295 “Security Design Features Technical Report,” Revision 1 incorporates the changes as described in the response.

Question 13.06-91:

(U) Appendix Preliminary Target Sets (Pages F-1 to F-9 of ANP-10295): Describe how AREVA will update of the ANP-10295 technical report to evaluate and address final DC that could impact the current physical design of plant layout, the design and configuration of safety-related SSC, and assumptions in ANP-10295 for target sets. Similarly, clarify whether a specific COLA information item will be established to determine final target sets in the appropriate FSAR chapter(s). Clarify whether the information item include an action to assess site specific conditions and design that are currently identified as outside the scope of the DC (i.e., SBODG, or other non-safety-related SSC) to establish a final target sets and actions to address impact of the final target sets on the design security engineered systems.

(U) Regulatory Basis: Same as previously stated (i.e., Subpart B of Title 10 CFR (10 CFR) 52, § 52.47, 10 CFR 52.48, 10 CFR Part 73, and 10 CFR 73.55(b)). 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 descriptions of security features incorporated in the standard US-EPR design provides the technical bases for determining adequacy of a physical protection system that will protect against the DBT and meeting regulatory requirements. However, SSC, layout, and current description of design of the US-EPR may change prior to final design certification and as a result of COL information items requiring final determination of target sets, which may impact design of a physical protection system for protecting against the DBT radiological sabotage.

(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 information (RAI) as appropriate to identify SGI (or security-related information) that reveals the specific details of security features incorporated in the US-EPR design. The RAI responses supplementing the DC Tier 1 document must be publicly available.***

Response to Question 13.06-91:

ANP-10295 is one of the many U.S. EPR design documents formally under configuration control in the AREVA NP Quality Assurance program, which is described in U.S. EPR FSAR Tier 2, Chapter 17.

U.S. EPR FSAR Tier 2, Table 1.8-2, Item 13.6-3 requires the COL applicant to incorporate the U.S. EPR FSAR Tier 2, Section 13.6 criteria including incorporation of ANP-10295, Revision 1. A number of COL applicant responsibilities are clearly described in ANP-10295 and summarized in the Executive Summary. These actions (including assessing site-specific conditions, target sets, and SBODGs) are clearly identified as required to implement ANP-10295, Revision 1.

Target sets were beneficial in establishing an overall defensive strategy during design certification activities. Therefore, target sets were developed to assist AREVA NP personnel in evaluating the defensibility of the site and to assist AREVA NP personnel in evaluating optimal physical locations for defensive positions.

Target sets are an integral component of the security drills and exercise operational program and subject to updating and maintenance over the licensed lifetime of the plant. Target sets also require a comprehensive evaluation of the site, including certain features to be determined by the COL applicant such as supplemental systems or operator actions beyond those credited in the design certification evaluation. Target sets are the responsibility of the COL applicant.

FSAR Impact:

The U.S. EPR FSAR will not be changed as a result of this question.

Technical Report Impact:

ANP-10295 “Security Design Features Technical Report,” Revision 1 incorporates the changes as described in the response.

Question 13.06-92:

(U) Appendix F, Preliminary Target Sets (Pages F-1 to F-9 of ANP-10295, Rev. 0): Clarify whether determination of preliminary target sets indicated in ANP-10295 excluded or eliminated any of the potential target sets (i.e., achievable based on DBT adversarial characteristics). If so, describe the process and criteria by which achievable target sets were reduced to a smaller subset that will be protected. If any potential achievable target sets are eliminated and therefore unprotected, state clearly that a COLA information item will be established to require submission of a request for exemption to 10 CFR 73.1 that requires protection against the DBT to cause radiological sabotage.

(U) Regulatory Basis: Same as previously stated (i.e., Subpart B of Title 10 CFR (10 CFR) 52, § 52.47, 10 CFR 52.48, 10 CFR Part 73, and 10 CFR 73.55(a)).). 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 73.1 requires protection against the DBT from radiological sabotage. All potential target sets that could lead to radiological sabotage must be protected, unless justified by an exemption. Clarification is need for text indicated for accurate and completeness of information in the application.

(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 information (RAI) as appropriate to identify SGI (or security-related information) that reveals the specific details of security features incorporated in the US-EPR design. The RAI responses supplementing the DC Tier 1 document must be publicly available.*

Response to Question 13.06-92:

No target sets were excluded in the determination of target sets for ANP-10295.

FSAR Impact:

The U.S. EPR FSAR will not be changed as a result of this question.

Question 13.06-93:

(U) Appendix F, Preliminary Target Sets (Pages F-1 to F-9 of ANP-10295): Describe how operator actions described in Appendix C will be incorporated into the target set analysis and may be credited as target sets elements. Provide technical bases and assumptions and required equipment for supporting operator actions as available and reliable for elements of target sets. Identify operator actions that are screen out as not reliable or available as element of targets. Clearly state whether this considered within the scope of the DC and whether the COL applicant would address operator actions as credited element of a target sets.

(U) Regulatory Basis: Same as previously stated (i.e., Subpart B of Title 10 CFR (10 CFR) 52, § 52.47, 10 CFR 52.48, 10 CFR Part 73, and 10 CFR 73.55(b)). 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." To adequately protect against the DBT of radiological sabotage at all time, an applicant must first identify a complete and accurate list of vital equipment from identified FSAR SSC based on all pant modes. Subsequent systematic development of a complete and accurate target sets (based on identified vital equipment and as appropriate risk-significant insights information), a design of a physical protection systems and security programs are provided to protect against the DBT and to meet general performance requirements of 10 CFR 73.20, 73.45, and 73.55. Title 10 CFR 73.55(f)(4) requires the development, documentation and periodic re-evaluation of target sets. A complete and accurate target sets is required for adequate protection against DBT to cause radiological sabotage and loss of spent fuel pool cooling. A thorough and systematic approach to development of standard target sets provides assurance of completeness of target sets that must be protected. In Appendix C, "Operator Actions Benefiting Security" of "U.S. EPR Security Design Features Technical Report," ANP-10295, Revision 0, AREVA provides a list of actions credited in the security strategy. The identification of target sets in Appendix F of ANP-10295 did not identify or credit operator actions as target elements.

(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 information (RAI) as appropriate to identify SGI (or security-related information) that reveals the specific details of security features incorporated in the US-EPR design. The RAI responses supplementing the DC Tier 1 document must be publicly available.***

Response to Question 13.06-93:

Target sets are not within the scope of the U.S. EPR design certification. Target sets are an integral component of the security drills and exercise operational program and thus are subject to updating and maintenance over the licensed lifetime of the plant. Target sets also require a comprehensive evaluation of the site, including certain features to be determined by the COL applicant such as supplemental systems or operator actions beyond those credited in the design certification evaluation.

ANP-10295, Appendix C contains a limited number of normal operator actions that have been credited during design certification evaluations as part of the response to an adversarial attack. ANP-10295, Appendix C contains criteria that were met before an operator action was listed. This included criteria for knowledge of the staff to conduct the action and criteria to assure that

adversaries cannot preclude the action. If an assumed operator action, because of its location or timing, was exposed to potential adversarial interference, then including it in the target sets may have been appropriate. However, the operator actions contained in ANP-10295, Appendix C were not exposed to adversarial interference due to their location and timing.

FSAR Impact:

The U.S. EPR FSAR will not be changed as a result of this question.

Technical Report Impact:

ANP-10295 “Security Design Features Technical Report,” Revision 1 incorporates the changes as described in the response.

Question 13.06-94:

(U) Appendix F, Preliminary Target Sets (Pages F-1 to F-9 of ANP-10295): Reconcile the vital equipment and target elements such that they are complete and accurate based on all plant modes. Provide consistent nomenclature used in both list for the identified equipment such that they are the same when referring to the same safety-related SSC or equipment.

(U) Regulatory Basis: Same as previously stated (i.e., Subpart B of Title 10 CFR (10 CFR) 52, § 52.47, 10 CFR 52.48, 10 CFR Part 73, and 10 CFR 73.55(b)). 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." To adequately protect against the DBT of radiological sabotage at all time, an applicant must first identify a complete and accurate list of vital equipment from identified FSAR SSC based on all pant modes. Subsequent systematic development of a complete and accurate target sets (based on identified vital equipment and as appropriate risk-significant insights information), a design of a physical protection system and security programs are provided to protect against the DBT and to meet general performance requirements of 10 CFR 73.20, 73.45, and 73.55. Title 10 CFR 73.55(f)(4) requires the development, documentation and periodic re-evaluation of target sets. A complete and accurate target sets is required for demonstrating adequate protection of safety SSC and risk-significant non-safety systems from the DBT to cause radiological sabotage or the loss of spent fuel pool cooling. In Appendix F, "Preliminary Target Sets'" of "U.S. EPR Security Design Features Technical Report," ANP-10295, Revision 0, AREVA provides the preliminary target sets in Table F-1. The preliminary target sets do not contain all vital equipment or mapped to one or more target sets. A comparison of the Vital Equipment List presented in Section A.6 with the target sets contained in Appendix F reveals that many vital equipment are not included as target elements. It also appears that some target elements that would likely meet the definition for vital equipment are not included on the Vital Equipment List. The process for developing and resulting standard target sets must be systematic and transparent to demonstrate and provides assurance that the complete set of targets that must be protected has been identified.

(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 information (RAI) as appropriate to identify SGI (or security-related information) that reveals the specific details of security features incorporated in the US-EPR design. The RAI responses supplementing the DC Tier 1 document must be publicly available.***

Response to Question 13.06-94:

See the Response to Question 13.06-83.

Question 13.06-95:

(U) Section 1.0, Vital Equipment and Vital Area (Pages 1-2 and 1-3) and Section 7.0, Delay Features (Page 7-1 of ANP-10295, Rev. 0): Provide clarification on how the US-EPR VA barriers [intentionally not stated] are credited to provide security functions .[intentionally not stated] based on the full capabilities of the adversary characteristics of the DBT.

The specific details of this question is security-related and subject to withholding in accordance with 10 CFR 2.390(1)(i). The question was provided to the applicant under a separate transmittal.

(U) Regulatory Basis: Same as previously stated (i.e., Subpart B of Title 10 CFR (10 CFR) 52, § 52.47, 10 CFR 52.48, 10 CFR Part 73, and 10 CFR 73.55(b)). Title 10 CFR 73.55(e)(3)(i) establish requirements for physical barriers. [intentionally not stated] The descriptions and technical bases for the security design and performance requirements of all structural components of the VA barriers provide security functions of delay are within the scope of the DC. Sandia National Laboratories, Sandia Report 2001-2168, “Technology Transfer Manual, Access Delay – Volume 1“ is an NRC accepted reference for characterizing security delay of building structures, assemblies, and systems components.

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 information (RAI) as appropriate to identify SGI (or security-related information) that reveals the specific details of security features incorporated in the US-EPR design. The RAI responses supplementing the DC Tier 1 document must be publicly available.

Response to Question 13.06-95:

See the Response to Question 13.06-35.

Question 13.06-96:

(U) Section 1.0, Vital Equipment and Vital Area (Pages 1-2, 2nd paragraph of ANP-10295, Rev. 0): Indicate the minimum distance that separates VA boundaries from the PA boundary is the minimum distance for meeting 10 CFR 73.55(b)(7)(i)(A) required for the design of an isolation zone. [Intentionally Not Stated] .

The specific details of this question is security-related and subject to withholding in accordance with 10 CFR 2.390(1)(i). The question was provided to the applicant under a separate transmittal.

(U) Regulatory Basis: Same as previously stated (i.e., Subpart B of Title 10 CFR (10 CFR) 52, § 52.47, 10 CFR 52.48, 10 CFR Part 73, and 10 CFR 73.55(b)). The design of capabilities to detect, assess, interdict, and neutralize DBT threat is required by 10 CFR 73.55(b)(3)(i). [Intentionally Not Stated]

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 information (RAI) as appropriate to identify SGI (or security-related information) that reveals the specific details of security features incorporated in the US-EPR design. The RAI responses supplementing the DC Tier 1 document must be publicly available.

Response to Question 13.06-96:

See the Response to RAI 247, Question 13.06.SRI.2.

Question 13.06-97:

(U) Section 1.0, Vital Equipment and Vital Area (Page 1-2, 4th paragraph of ANP-10295, Rev. 0): Provide clarification of what is considered [Intentionally Not Stated] capabilities within the DBT for delay.

The specific details of this question is security-related and subject to withholding in accordance with 10 CFR 2.390(1)(i). The question was provided to the applicant under a separate transmittal.

(U) Regulatory Basis: Same as previously stated (i.e., Subpart B of Title 10 CFR (10 CFR) 52, § 52.47, 10 CFR 52.48, 10 CFR Part 73, and 10 CFR 73.55(b)). Title 10 CFR 73.2, definition for physical barriers requires that "openings in which are secured by grates, doors, or covers of constructions and fastening of sufficient strength such that the integrity of wall [ceilings and floors] is not lessened by any openings." Section 1.0 describes an assumption and design requirements to protect [Intentionally Not Stated]. Additional information is needed to clarify the design and performance requirements for protection of all openings of the structures enclosing the VA against the DBT.

(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 information (RAI) as appropriate to identify SGI (or security-related information) that reveals the specific details of security features incorporated in the US-EPR design. The RAI responses supplementing the DC Tier 1 document must be publicly available.***

Response to Question 13.06-97:

See the Response to RAI 247, Question 13.06.SRI.3.

Question 13.06-98:

(U) Section 1.0, Vital Equipment and Vital Area (Page 1-3, 3rd paragraph of ANP-10295, Rev. 0): Provide clarification on whether the [Intentionally Not Stated] for security response.

The specific details of this question is security-related and subject to withholding in accordance with 10 CFR 2.390(1)(i). The question was provided to the applicant under a separate transmittal.

(U) Regulatory Basis: Same as previously stated (i.e., Subpart B of Title 10 CFR (10 CFR) 52, § 52.47, 10 CFR 52.48, 10 CFR Part 73, and 10 CFR 73.55(b)). The US-EPR standard design describes requirements for security communications. A reliable means of two-way communications in accordance with 10 CFR 73.55(j)(4)(i)**,** with the considerations of the DBT adversaries' capabilities, is required to initiate and maintain command and control for implementing security response.

(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 information (RAI) as appropriate to identify SGI (or security-related information) that reveals the specific details of security features incorporated in the US-EPR design. The RAI responses supplementing the DC Tier 1 document must be publicly available.***

Response to Question 13.06-98:

See the Response to RAI 247, Question 13.06.SRI.4.

Question 13.06-99:

(U) Section 2.0, Security Power System (Page 2-2 of ANP-10295, Rev. 0): Provide clarification on whether the design and performance requirements for [Intentionally Not Stated] includes other security systems providing assessment, controls of active barrier systems, and controls of access doors [Intentionally Not Stated] along with critical security functions indicated on Page 2-2 and. Describe the design and performance requirements for [Intentionally Not Stated] to address safety/security interface.

The specific details of this question is security-related and subject to withholding in accordance with 10 CFR 2.390(1)(i). The question was provided to the applicant under a separate transmittal.

(U) Regulatory Basis: Same as previously stated (i.e., Subpart B of Title 10 CFR (10 CFR) 52, § 52.47, 10 CFR 52.48, 10 CFR Part 73, 10 CFR 73.55(b), and 10 CFR 73.58). Additional clarification is needed on assumptions and design requirements for secondary power supply to ensure continuity of security functions. The safety and security interface, in accordance with 10 CFR 73.58, for securing emergency exits and access point must be considered during design.

(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 information (RAI) as appropriate to identify SGI (or security-related information) that reveals the specific details of security features incorporated in the US-EPR design. The RAI responses supplementing the DC Tier 1 document must be publicly available.***

Response to Question 13.06-99:

See the Response to RAI 247, Question 13.06.SRI.5.

Question 13.06-100:

(U) Section 4.0, Vehicle Barrier System (Pages 4-7, 1st sentences/bullets of ANP-10295, Rev. 0): Provide clarification on whether the [Intentionally Not Stated].

(U) Regulatory Basis: Same as previously stated (i.e., Subpart B of Title 10 CFR (10 CFR) 52, § 52.47, 10 CFR 52.48, 10 CFR Part 73, and 10 CFR 73.55(b)). Title 10 CFR 73.55(e)(10)(i)(A) require the design, construction, installation, and maintenance of a VBS at a stand-off distance adequate to protect personnel, equipment, and systems necessary to prevent radiological sabotage. Section 4.0 describes RSD for vital structures that will provide protection against the DBT vehicle bombs. Clarification is required [Intentionally No t Stated].

The specific details of this question is security-related and subject to withholding in accordance with 10 CFR 2.390(1)(i). The question was provided to the applicant under a separate transmittal.

(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 information (RAI) as appropriate to identify SGI (or security-related information) that reveals the specific details of security features incorporated in the US-EPR design. The RAI responses supplementing the DC Tier 1 document must be publicly available.***

Response to Question 13.06-100:

See the Response to Question 13.06-47.

Question 13.06-101:

(U) Section 4.0, Vehicle Barrier System (Pages 4-7 of ANP-10295, Rev. 0): Provide clarification as to whether [Intentionally Not Stated].

The specific details of this question is security-related and subject to withholding in accordance with 10 CFR 2.390(1)(i). The question was provided to the applicant under a separate transmittal.

(U) Regulatory Basis: Same as previously stated (i.e., Subpart B of Title 10 CFR (10 CFR) 52, § 52.47, 10 CFR 52.48, 10 CFR Part 73, and 10 CFR 73.55(b)). Complete and accurate information is needed in the application for meeting regulatory requirements. Consistency in naming or reference is needed for accurate information.

(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 information (RAI) as appropriate to identify SGI (or security-related information) that reveals the specific details of security features incorporated in the US-EPR design. The RAI responses supplementing the DC Tier 1 document must be publicly available.***

Response to Question 13.06-101:

See the Response to RAI 247, Question 13.06.SRI.7.

Question 13.06-102:

(U) Section 4.0, Vehicle Barrier System (Pages 4-7, Bullet No.1 of ANP-10295, Rev. 0): Provide clarification and state the technical basis supporting the statement in Bullet No.1 that [Intentionally Not Stated] as illustrated for the Reactor Building in FSAR Figure 3.8-11, Reactor Building Section A-A.

The specific details of this question is security-related and subject to withholding in accordance with 10 CFR 2.390(1)(i). The question was provided to the applicant under a separate transmittal.

(U) Regulatory Basis: Same as previously stated (i.e., Subpart B of Title 10 CFR (10 CFR) 52, § 52.47, 10 CFR 52.48, 10 CFR Part 73, and 10 CFR 73.55(b)). Title 10 CFR 73.55(e)(10)(i)(A) requires the design, construction, installation, and maintenance of a VBS at a stand-off distance adequate to protect personnel, equipment, and systems necessary to prevent radiological sabotage. The US-EPR design provides the technical bases for determining adequacy of a physical protection system that will protect against the DBT and meeting regulatory requirements. [Intentionally Not Stated]

(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 information (RAI) as appropriate to identify SGI (or security-related information) that reveals the specific details of security features incorporated in the US-EPR design. The RAI responses supplementing the DC Tier 1 document must be publicly available.***

Response to Question 13.06-102:

See the Response to RAI 247, Question 13.06.SRI.8.

Question 13.06-103:

(U) Section 4.0, Vehicle Barrier System (Pages 4.7, Bullet No.2 of ANP-10295, Rev. 0): Provide technical bases supporting the statement of bullet #2, on page 4-7, that [Intentionally Not Stated] Describe structural design changes required based on the result of AREVA [Intentionally Not Stated]. Provide references to technical documentation (e.g., AREVA 51-90660xx-xxx type technical documents) that provide the technical bases and supports of the conclusions and statements indicated in this section of ANP-10295.

The specific details of this question is security-related and subject to withholding in accordance with 10 CFR 2.390(1)(i). The question was provided to the applicant under a separate transmittal.

(U) Regulatory Basis: Same as previously stated (i.e., Subpart B of Title 10 CFR (10 CFR) 52, § 52.47, 10 CFR 52.48, 10 CFR Part 73, and 10 CFR 73.55(b)). Title 10 CFR 73.55(e)(10)(i)(A) requires the design, construction, installation, and maintenance of a VBS at a stand-off distance adequate to protect personnel, equipment, and systems necessary to prevent radiological sabotage. Bullet No.2 [Intentionally Not Stated] to provide physical protection against the 10 CFR 73.1 [Intentionally Not Stated]. An adequate summary of technical bases and assumptions have not been provided to support the conclusions or statements indicated in the discussion of the subject. No references to technical document (e.g., AREVA 51-90660xx-xxx type technical documents) capturing detailed of [Intentionally Not Stated] have been provided in this section, nor included in the list of references in Section 13 of ANP-10295.

(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 information (RAI) as appropriate to identify SGI (or security-related information) that reveals the specific details of security features incorporated in the US-EPR design. The RAI responses supplementing the DC Tier 1 document must be publicly available.*

Response to Question 13.06-103:

See the Response to RAI 247, Question 13.06.SRI.9.

Question 13.06-104:

(U) Sections 6.0, Defensive Positions (Page 6-2, 2nd paragraph of ANP-10295, Rev. 0): Clarify whether AREVA defensive analyses [Intentionally Not Stated]. Describe how uncertainties for non-equipment failures (i.e., environmental or human factors) were considered for design of and configurations for the DP in Figures 6-1 and 6-2.

The specific details of this question is security-related and subject to withholding in accordance with 10 CFR 2.390(1)(i). The question was provided to the applicant under a separate transmittal.

(U) Regulatory Basis: Same as previously stated (i.e., Subpart B of Title 10 CFR (10 CFR) 52, § 52.47, 10 CFR 52.48, 10 CFR Part 73, and 10 CFR 73.55(b)). 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 US-EPR design includes proposed DP for protection of target sets from the DBT. Human performance is affected by environmental and physical conditions; along with heighten state of stress. Uncertainties are addressed by incorporating margin of time or assuming unavailability or failures as defense-in-depth for response.

(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 information (RAI) as appropriate to identify SGI (or security-related information) that reveals the specific details of security features incorporated in the US-EPR design. The RAI responses supplementing the DC Tier 1 document must be publicly available.***

Response to Question 13.06-104:

See the Response to RAI 247, Question 13.06.SRI.10.

Question 13.06-105:

(U) Appendix A, Vital Equipment List (Pages A-2 through A-33 of ANP-10925, Rev. 0): This RAI restates and/or supplement the request for information previously issued in RAI No. 92, Question No. 13.06-10. [Intentionally Not Stated]

The specific details of this question is security-related and subject to withholding in accordance with 10 CFR 2.390(1)(i). The question was provided to the applicant under a separate transmittal.

(U) Regulatory Basis: : Same as previously stated (i.e., Subpart B of Title 10 CFR (10 CFR) 52, § 52.47, 10 CFR 52.48, 10 CFR Part 73, 10 CFR 73.55(b), 10 CFR 73.2, and Title 10 CFR 73.55(b)(3)(i)). To adequately protect against the DBT of radiological sabotage at all time, an applicant must first identify a complete and accurate list of vital equipment from identified FSAR SSC based on all pant modes. Subsequent systematic development of a complete and accurate target sets (based on identified vital equipment and as appropriate risk-significant insights information), a design of a physical protection systems and security programs are provided to protect against the DBT and to meet general performance requirements of 10 CFR 73.20, 73.45, and 73.55. Response to RAI No.13.6-10 did not address the assumptions stated in Section A.3.1 and Section A.3.2 of ANP-10295. [Intentionally Not Stated]

(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 information (RAI) as appropriate to identify SGI (or security-related information) that reveals the specific details of security features incorporated in the US-EPR design. The RAI responses supplementing the DC Tier 1 document must be publicly available.*

Response to Question 13.06-105:

See the Response to Question 13.06.83(g).

Question 13.06-106:

(U) Appendix A, Vital Equipment List (Pages A-2 through A-33 of ANP-10925, Rev. 0): This RAI restates and/or supplement the request for information previously issued in RAI No. 92, Question No. 13.06-12. Provide technical bases and assumptions justifying the exclusion of protective or mitigating capabilities associated with [Intentionally Not Stated], but meets the definition of vital equipment as defined by 10 CFR 73.2 and technical bases for their exclusion.

The specific details of this question is security-related and subject to withholding in accordance with 10 CFR 2.390(1)(i). The question was provided to the applicant under a separate transmittal.

(U) Regulatory Basis: Same as previously stated (i.e., Subpart B of Title 10 CFR (10 CFR) 52, § 52.47, 10 CFR 52.48, 10 CFR Part 73, 10 CFR 73.55(b), 10 CFR 73.2, and Title 10 CFR 73.55(b)(3)(i)). To adequately protect against the DBT of radiological sabotage at all time, an applicant must first identify a complete and accurate list of vital equipment from identified FSAR SSC based on all pant modes. Subsequent systematic development of a complete and accurate target sets (based on identified vital equipment and as appropriate risk-significant insights information), a design of a physical protection systems and security programs are provided to protect against the DBT and to meet general performance requirements of 10 CFR 73.55. AREVA response to RAI 13.06-12, stated that, consistent with Assumption 2 in NUREG-1178, [Intentionally Not Stated] Application of guidance in accordance with NUREG-1178 is not a justification for not meeting all regulatory requirements or provides justification for an exemption to a regulatory requirement.

(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 information (RAI) as appropriate to identify SGI (or security-related information) that reveals the specific details of security features incorporated in the US-EPR design. The RAI responses supplementing the DC Tier 1 document must be publicly available.***

Response to Question 13.06-106:

See the Response to Question 13.06.83(g).

Question 13.06-107:

(U) Appendix A, Vital Equipment List (Pages A-2 through A-33 of ANP-10925, Rev. 0): This RAI restates and/or supplement the request for information previously issued in RAI No. 92, Question No. 13.06-13. Provide clarification on whether [Intentionally Not Stated]. Include in the response the following: (a) detailed descriptions of the process by which support systems and components to vital equipment are identified and are determined to be vital, and (b) Identify auxiliary equipment on the Vital Equipment List.

The specific details of this question is security-related and subject to withholding in accordance with 10 CFR 2.390(1)(i). The question was provided to the applicant under a separate transmittal.

(U) Regulatory Basis: Same as previously stated (i.e., Subpart B of Title 10 CFR (10 CFR) 52, § 52.47, 10 CFR 52.48, 10 CFR Part 73, 10 CFR 73.55(b), 10 CFR 73.2, and Title 10 CFR 73.55(b)(3)(i)). To adequately protect against the DBT of radiological sabotage at all time, an applicant must first identify a complete and accurate list of vital equipment from identified FSAR SSC based on all pant modes. Subsequent systematic development of a complete and accurate target sets (based on identified vital equipment and as appropriate risk-insights information), a design of a physical protection systems and security programs are provided to protect against the DBT and to meet general performance requirements of 10 CFR 73.55. [Intentionally Not Stated]. Tier 2 documentation must provide sufficient technical basis and information for all vital equipment for verifying and demonstrating that all vital equipment are within VA boundaries of physical security systems and components.

(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 information (RAI) as appropriate to identify SGI (or security-related information) that reveals the specific details of security features incorporated in the US-EPR design. The RAI responses supplementing the DC Tier 1 document must be publicly available.***

Response to Question 13.06-107:

See the Response to Question 13.06.83(g).

Question 13.06-108:

(U) Appendix A, Vital Equipment List (Pages A-2 through A-33 of ANP-10925, Rev. 0): This RAI restates and/or supplement the request for information previously issued in RAI No. 92, Question No. 13.06-14. Provide clarification and assumptions [Intentionally Not Stated] for all systems discussed in the US EPR Vital Equipment List. Include in the response the following: (a) detailed descriptions of the process by which protective systems and components to vital equipment are identified and are determined to be vital and (b) Identify protective equipment on the Vital Equipment List.

The specific details of this question is security-related and subject to withholding in accordance with 10 CFR 2.390(1)(i). The question was provided to the applicant under a separate transmittal.

(U) Regulatory Basis: Same as previously stated (i.e., Subpart B of Title 10 CFR (10 CFR) 52, § 52.47, 10 CFR 52.48, 10 CFR Part 73, 10 CFR 73.55(b), 10 CFR 73.2, and Title 10 CFR 73.55(b)(3)(i)). To adequately protect against the DBT of radiological sabotage at all time, a complete and accurate list of vital equipment from identified FSAR SSC based on all pant modes. A complete and accurate target sets (based on identified vital equipment and as appropriate risk-insights information), a design of a physical protection systems and security programs are provided to protect against the DBT and to meet general performance requirements of 10 CFR 73.55. [Intentionally Not Stated].

(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 information (RAI) as appropriate to identify SGI (or security-related information) that reveals the specific details of security features incorporated in the US-EPR design. The RAI responses supplementing the DC Tier 1 document must be publicly available.***

Response to Question 13.06-108:

See the Response to Question 13.06.83(g).

Question 13.06-109:

(U) Appendix A, Vital Equipment List (Pages A-2 through A-33 of ANP-10925, Rev. 0): This RAI restates and/or supplement the request for information previously issued in RAI No. 92, Question No. 13.06-15. Clarify the apparent discrepancy between the statements in ANP-10295, Section 3.3, [Intentionally Not Stated]

The specific details of this question is security-related and subject to withholding in accordance with 10 CFR 2.390(1)(i). The question was provided to the applicant under a separate transmittal.

(U) Regulatory Basis: Same as previously stated (i.e., Subpart B of Title 10 CFR (10 CFR) 52, § 52.47, 10 CFR 52.48, 10 CFR Part 73, 10 CFR 73.55(b), 10 CFR 73.2, and Title 10 CFR 73.55(b)(3)(i)). To adequately protect against the DBT of radiological sabotage at all time, a complete and accurate list of vital equipment from identified FSAR SSC based on all pant modes. A complete and accurate target sets (based on identified vital equipment and as appropriate risk-insights information), a design of a physical protection systems and security programs are provided to protect against the DBT and to meet general performance requirements of 10 CFR 73.20, 73.45, and 73.55. Tier 2 documentations must provide sufficient technical bases and information for all vital equipment to verify and demonstrate that all vital equipment based on all plant modes are within designated VA boundaries. AREVA response to RAI 13.06-15, indicated that [stated number] train of EFW is sufficient to reach and maintain hot standby with partial cool-down. Fast cool-down (FCD) requires [stated number] trains of EFW in some cases, but FCD is beyond the required safe conditions considered for vital equipment evaluations. AREVA stated that operator and emergency response organization actions are credited to refill EFW suction sources as needed for long term operations. Clarify the apparent discrepancy between the statements in ANP-10295 and additional technical basis for determining vital equipment and credit of operator action is needed.

(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 information (RAI) as appropriate to identify SGI (or security-related information) that reveals the specific details of security features incorporated in the US-EPR design. The RAI responses supplementing the DC Tier 1 document must be publicly available.***

Response to Question 13.06-109:

See the Response to RAI 247, Question 13.06.SRI.15.

Question 13.06-110:

(U) Appendix A, Vital Equipment List (Pages A-2 through A-33 of ANP-10925, Rev. 0): This RAI restates and/or supplement the request for information previously issued in RAI No. 92, Question No. 13.06-16. Describe technical bases and assumptions regarding how [Intentionally Not Stated]. Provide technical basis and justify the exclusion of the MSLB and LOCA events and associated equipment from the Vital Equipment List.

The specific details of this question is security-related and subject to withholding in accordance with 10 CFR 2.390(1)(i). The question was provided to the applicant under a separate transmittal.

(U) Regulatory Basis: Same as previously stated (i.e., Subpart B of Title 10 CFR (10 CFR) 52, § 52.47, 10 CFR 52.48, 10 CFR Part 73, 10 CFR 73.55(b), 10 CFR 73.2, and Title 10 CFR 73.55(b)(3)(i)). To adequately protect against the DBT of radiological sabotage at all time, a complete and accurate list of vital equipment from identified FSAR SSC based on all pant modes. A complete and accurate target sets (based on identified vital equipment and as appropriate risk-insights information), a design of a physical protection systems and security programs are provided to protect against the DBT and to meet general performance requirements of 10 CFR 73.55. Tier 2 documentations must provide sufficient technical bases and information for all vital equipment to verify and demonstrate that all vital equipment based on all plant modes are within designated VA boundaries. Complete and accurate list of vital equipment must be based on all plant modes and associated postulated credible initiating events. Vital equipment as defined by 10 CFR 73.2 does not screen out or exclude selected equipment for reasons such as achievable within the DBT adversarial characteristics in accordance with 10 CFR 73.1.

(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 information (RAI) as appropriate to identify SGI (or security-related information) that reveals the specific details of security features incorporated in the US-EPR design. The RAI responses supplementing the DC Tier 1 document must be publicly available.***

Response to Question 13.06-110:

See the Response to RAI 247, Question 13.06.SRI.16.

Question 13.06-111:

(U) Appendix A, Vital Equipment List (Pages A-2 through A-33 of ANP-10925, Rev. 0): This RAI restates and/or supplement the request for information previously issued in RAI No. 92, Question No. 13.06-17. [Intentionally Not Stated].

The specific details of this question is security-related and subject to withholding in accordance with 10 CFR 2.390(1)(i). The question was provided to the applicant under a separate transmittal.

(U) Regulatory Basis: Same as previously stated (i.e., Subpart B of Title 10 CFR (10 CFR) 52, § 52.47, 10 CFR 52.48, 10 CFR Part 73, 10 CFR 73.55(b), 10 CFR 73.2, and Title 10 CFR 73.55(b)(3)(i)). To adequately protect against the DBT of radiological sabotage at all time, a complete and accurate list of vital equipment from identified FSAR SSC based on all pant modes. A complete and accurate target sets (based on identified vital equipment and as appropriate risk-insights information), a design of a physical protection systems and security programs are provided to protect against the DBT and to meet general performance requirements of 10 CFR 73.55. Tier 2 documentations must provide sufficient technical bases and information for all vital equipment to verify and demonstrate that all vital equipment based on all plant modes are within designated VA boundaries. Complete and accurate list of vital equipment must be based on all plant modes and associated postulated credible initiating events. In response to RAI 13.06-17, AREVA stated [Intentionally Not Stated]. Tier 2 documentation must provide technical bases and information for all vital equipment for verifying and demonstrating that all vital equipment based on all plant mode are within VA boundaries of physical security systems and components.

(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 information (RAI) as appropriate to identify SGI (or security-related information) that reveals the specific details of security features incorporated in the US-EPR design. The RAI responses supplementing the DC Tier 1 document must be publicly available.*

Response to Question 13.06-111:

See the Response to Question 13.06.83(g).

Question 13.06-112:

(U) Appendix A, Vital Equipment List (Pages A-10 of ANP-10925, Rev. 0): This RAI restates and/or supplement the request for information previously issued in RAI No. 92, Question No. 13.06-18. Clarify whether the [Intentionally Not Stated]. Clarify whether the equipment described are specifically identified on the vital equipment list.

The specific details of this question is security-related and subject to withholding in accordance with 10 CFR 2.390(1)(i). The question was provided to the applicant under a separate transmittal.

(U) Regulatory Basis: Same as previously stated (i.e., Subpart B of Title 10 CFR (10 CFR) 52, § 52.47, 10 CFR 52.48, 10 CFR Part 73, 10 CFR 73.55(b), 10 CFR 73.2, and Title 10 CFR 73.55(b)(3)(i)). To adequately protect against the DBT of radiological sabotage at all time, a complete and accurate list of vital equipment from identified FSAR SSC based on all pant modes. A complete and accurate target sets (based on identified vital equipment and as appropriate risk-insights information), a design of a physical protection systems and security programs are provided to protect against the DBT and to meet general performance requirements of 10 CFR 73.20, 73.45, and 73.55. Tier 2 documentations must provide sufficient technical bases and information for all vital equipment to verify and demonstrate that all vital equipment based on all plant modes are within designated VA boundaries. Complete and accurate list of vital equipment must be based on all plant modes and associated postulated credible initiating events. AREVA response RAI 13.06-18 stated that supplemental information was included in ANP-10295 (SGI), Appendix A, [Intentionally Not Stated].

(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 information (RAI) as appropriate to identify SGI (or security-related information) that reveals the specific details of security features incorporated in the US-EPR design. The RAI responses supplementing the DC Tier 1 document must be publicly available.***

Response to Question 13.06-112:

See the Response to Question 13.06.83(g).

Question 13.06-113:

(U) Appendix A, Vital Equipment List (Page A-10, A-16 through A-33 of ANP-10925, Rev. 0): This RAI restates and/or supplement the request for information previously issued in RAI No. 92, Question No. 13.06-19. Clarify whether the [Intentionally Not Stated] on the Vital Equipment List in ANP-10295.

The specific details of this question is security-related and subject to withholding in accordance with 10 CFR 2.390(1)(i). The question was provided to the applicant under a separate transmittal.

(U) Regulatory Basis: Same as previously stated (i.e., Subpart B of Title 10 CFR (10 CFR) 52, § 52.47, 10 CFR 52.48, 10 CFR Part 73, 10 CFR 73.55(b), 10 CFR 73.2, and Title 10 CFR 73.55(b)(3)(i)). To adequately protect against the DBT of radiological sabotage at all time, a complete and accurate list of vital equipment from identified FSAR SSC based on all pant modes. A complete and accurate target sets (based on identified vital equipment and as appropriate risk-insights information), a design of a physical protection systems and security programs are provided to protect against the DBT and to meet general performance requirements of 10 CFR 73.20, 73.45, and 73.55. Tier 2 documentations must provide sufficient technical bases and information for all vital equipment to verify and demonstrate that all vital equipment based on all plant modes are within designated VA boundaries. [Intentionally Not Stated]

(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 information (RAI) as appropriate to identify SGI (or security-related information) that reveals the specific details of security features incorporated in the US-EPR design. The RAI responses supplementing the DC Tier 1 document must be publicly available.***

Response to Question 13.06-113:

See the Response to Question 13.06.83(g).

Question 13.06-114:

(U) Appendix A, Vital Equipment List (Pages A-2 through A-33 of ANP-10925, Rev. 0): This RAI restates and/or supplement the request for information previously issued in RAI No. 92, Question No. 13.06-21. The RAI asked how equipment identified in the risk-significant internal events cut sets in the US-EPR DCD FSAR Chapter 19 are addressed or used to develop and identify vital equipment. The following supplement RAI 13.06-21 based on review response in ANP-10295: (a) Assumption 2: [Intentionally Not Stated] ; (b) Assumption 6: [Intentionally Not Stated]; (c) Assumption 8: [Intentionally Not Stated]; (d) Assumption 9: [Intentionally Not Stated]; and (e) Assumption 10: [Intentionally Not Stated]. In addition describe justification of how indicated electrical system and equipment would not be identified as vital equipment in accordance with 10 CFR 73.2. In the discussion of target sets, clearly identify the credited operator actions and eliminated electrical systems. Include these actions and piping as target elements.

The specific details of this question is security-related and subject to withholding in accordance with 10 CFR 2.390(1)(i).

The question was provided to the applicant under a separate transmittal.

(U) Regulatory Basis: Same as previously stated (i.e., Subpart B of Title 10 CFR (10 CFR) 52, § 52.47, 10 CFR 52.48, 10 CFR Part 73, 10 CFR 73.55(b), 10 CFR 73.2, and Title 10 CFR 73.55(b)(3)(i)). To adequately protect against the DBT of radiological sabotage at all time, a complete and accurate list of vital equipment from identified FSAR SSC based on all pant modes. A complete and accurate target sets (based on identified vital equipment and as appropriate risk-insights information), a design of a physical protection systems and security programs are provided to protect against the DBT and to meet general performance requirements of 10 CFR 73.20, 73.45, and 73.55. Complete and accurate list of vital equipment must be based on all plant modes and associated postulated credible initiating events. All SSC meeting definition in accordance with 10 CFR 73.2 must be identified as vital equipment. Title 10 CFR 73.2 does not screen out or exclude selected equipment for reasons such as operator actions. Tier 2 documentations must provide sufficient technical bases and information for all vital equipment to verify and demonstrate that all vital equipment based on all plant modes are within designated VA boundaries.

(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 information (RAI) as appropriate to identify SGI (or security-related information) that reveals the specific details of security features incorporated in the US-EPR design. The RAI responses supplementing the DC Tier 1 document must be publicly available.*

Response to Question 13.06-114:

See the Response to RAI 247, Question 13.06.SRI.20.

Question 13.06-115:

(U) Appendix A, Vital Equipment List (Pages A-2 through A-33 of ANP-10925, Rev. 0): Provide clarification for the following: (a) Assumptions 9 – [Intentionally Not Stated]; (b) Assumptions 12 and Section A.4.17 - [Intentionally Not Stated]; and (c) Page A-6, Section A.3.3 – [Intentionally Not Stated]; Address considerations in Section F.4 (Bullets 3 and 4 on Page F-3).

The specific details of this question is security-related and subject to withholding in accordance with 10 CFR 2.390(1)(i). The question was provided to the applicant under a separate transmittal.

(U) Regulatory Basis: Same as previously stated (i.e., Subpart B of Title 10 CFR (10 CFR) 52, § 52.47, 10 CFR 52.48, 10 CFR Part 73, 10 CFR 73.55(b), 10 CFR 73.2, and Title 10 CFR 73.55(b)(3)(i)). To adequately protect against the DBT of radiological sabotage at all time, an applicant must first identify a complete and accurate list of vital equipment from identified FSAR SSC based on all pant modes**.** [Intentionally Not Stated]. Revised 10 CFR 73.55(b)(9*)*, Vital Areas, designated the spent fuel pool as a vital area.

(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 information (RAI) as appropriate to identify SGI (or security-related information) that reveals the specific details of security features incorporated in the US-EPR design. The RAI responses supplementing the DC Tier 1 document must be publicly available.***

Response to Question 13.06-115:

See the Response to RAI 247, Question 13.06.SRI.21.

Question 13.06-116:

(U) Appendix A, Vital Equipment List , (Pages A-2 through A-33 of ANP-10925, Rev. 0): This RAI restates and/or supplement the request for information previously issued in RAI No. 92, Question No. 13.06-22. In RAI 13.06-22, the staff asked AREVA to discuss how PRA flood scenarios have been considered in the development of the list of vital equipment. The following are supplemental questions based on AREVA response:[intentionally Not Stated].

The specific details of this question is security-related and subject to withholding in accordance with 10 CFR 2.390(1)(i). The question was provided to the applicant under a separate transmittal.

(U) Regulatory Basis: Same as previously stated (i.e., Subpart B of Title 10 CFR (10 CFR) 52, § 52.47, 10 CFR 52.48, 10 CFR Part 73, 10 CFR 73.55(b), 10 CFR 73.2, and Title 10 CFR 73.55(b)(3)(i)). To adequately protect against the DBT of radiological sabotage at all time, an applicant must first identify a complete and accurate list of vital equipment from identified FSAR SSC based on all pant modes. Subsequent systematic development of a complete and accurate target sets (based on identified vital equipment and as appropriate risk-significant insights information), a design of a physical protection systems and security programs are provided to protect against the DBT and to meet general performance requirements of 10 CFR 73.20, 73.45, and 73.55. [Intentionally Not Stated]. Equipment meeting vital equipment definition in accordance with 10 CFR 73.2 must be included in the Vital Equipment List. Application of guidance in accordance with NUREG-1178 is not a justification for not meeting all regulatory requirements or provides justification for an exemption from regulatory requirements. Tier 2 documentations must provide sufficient technical bases and information for all vital equipment to verify and demonstrate that all vital equipment based on all plant modes are within designated VA boundaries.

(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 information (RAI) as appropriate to identify SGI (or security-related information) that reveals the specific details of security features incorporated in the US-EPR design. The RAI responses supplementing the DC Tier 1 document must be publicly available.***

Response to Question 13.06-116:

See the Response to Question 13.06.83(d).

Question 13.06-117:

(U) Appendix A, Vital Equipment List (Pages A-2 through A-33 of ANP-10925, Rev. 0): This RAI restates and/or supplement the request for information previously issued in RAI No. 92, Question No. 13.06-23. In RAI 13.06-23, the staff asked AREVA to clarify whether [Intentionally Not Stated].

The specific details of this question is security-related and subject to withholding in accordance with 10 CFR 2.390(1)(i). The question was provided to the applicant under a separate transmittal.

(U) Regulatory Basis: Same as previously stated (i.e., Subpart B of Title 10 CFR (10 CFR) 52, § 52.47, 10 CFR 52.48, 10 CFR Part 73, 10 CFR 73.55(b), 10 CFR 73.2, and Title 10 CFR 73.55(b)(3)(i)). To adequately protect against the DBT of radiological sabotage at all time, an applicant must first identify a complete and accurate list of vital equipment from identified FSAR SSC based on all pant modes. Subsequent systematic development of a complete and accurate target sets (based on identified vital equipment and as appropriate risk-significant insights information), a design of a physical protection systems and security programs are provided to protect against the DBT and to meet general performance requirements of 10 CFR 73.20, 73.45, and 73.55. Complete and accurate list of vital equipment must be based on all plant modes and associated postulated credible initiating events. All SSC meeting definition in accordance with 10 CFR 73.2 must be identified as vital equipment.

(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 information (RAI) as appropriate to identify SGI (or security-related information) that reveals the specific details of security features incorporated in the US-EPR design. The RAI responses supplementing the DC Tier 1 document must be publicly available.***

Response to Question 13.06-117:

See the Response to Question 13.06.83(g).

Question 13.06-118:

(U) Appendix A, Vital Equipment List (Pages A-2 through A-33 of ANP-10925, Rev. 0): This RAI restates and/or supplement the request for information previously issued in RAI No. 92, Question No. 13.06-24. In RAI 13.06-24, the staff requested AREVA to discuss how PRA fire scenarios have been considered in the development of the list of vital equipment. The following are supplemental questions based on AREVA response: (a) provide technical basis supporting justifications that a deliberate fire caused by adversaries actions can be defined as a random failure, and (b) Identify equipment that were excluded from the Vital Equipment List based on the assumption of random failure, immediate operator action, and "bounding" assumptions (i.e. flood barriers, pressure boundaries, etc…) and the technical bases for such exclusions.

(U) Regulatory Basis: Same as previously stated (i.e., Subpart B of Title 10 CFR (10 CFR) 52, § 52.47, 10 CFR 52.48, 10 CFR Part 73, 10 CFR 73.55(b), 10 CFR 73.2, and Title 10 CFR 73.55(b)(3)(i)). To adequately protect against the DBT of radiological sabotage at all time, an applicant must first identify a complete and accurate list of vital equipment from identified FSAR SSC based on all pant modes. Subsequent systematic development of a complete and accurate target sets (based on identified vital equipment and as appropriate risk-significant insights information), a design of a physical protection systems and security programs are provided to protect against the DBT and to meet general performance requirements of 10 CFR 73.20, 73.45, and 73.55. [Intentionally Not Stated]. Equipment meeting vital equipment definition in accordance with 10 CFR 73.2 must be included in the Vital Equipment List. Tier 2 documentations must provide sufficient technical bases and information for all vital equipment to verify and demonstrate that all vital equipment based on all plant modes are within designated VA boundaries.

The specific details of this question (and regulatory basis) is security-related and subject to withholding in accordance with 10 CFR 2.390(1)(i). The question was provided to the applicant under a separate transmittal.

(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 information (RAI) as appropriate to identify SGI (or security-related information) that reveals the specific details of security features incorporated in the US-EPR design. The RAI responses supplementing the DC Tier 1 document must be publicly available.***

Response to Question 13.06-118:

See the Response to Question 13.06-85.

Question 13.06-119:

(U) Appendix C, Operator Actions Benefiting Security (Page C-2 of ANP-10925, Rev. 0): Describe the technical basis for choosing [Intentionally Not Stated].

The specific details of this question is security-related and subject to withholding in accordance with 10 CFR 2.390(1)(i). The question was provided to the applicant under a separate transmittal.

(U) Regulatory Basis: Same as previously stated (i.e., Subpart B of Title 10 CFR (10 CFR) 52, § 52.47, 10 CFR 52.48, 10 CFR Part 73, and 10 CFR 73.55(b)). 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(f)(4) requires the development, documentation and periodic re-evaluation of target sets. A complete and accurate target sets is required for adequate protection against DBT to cause radiological sabotage and loss of spent fuel pool cooling. A thorough and systematic approach to development of standard target sets provides assurance of completeness of target sets that must be protected. Elements of a target set may include operator actions.

(U) AREVA Technical Report ANP-10295, states that operators are capable of [Intentionally Not Stated]. Clarification is needed for the technical basis supporting indicated operator actions for a security event.

(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 information (RAI) as appropriate to identify SGI (or security-related information) that reveals the specific details of security features incorporated in the US-EPR design. The RAI responses supplementing the DC Tier 1 document must be publicly available.***

Response to Question 13.06-119:

See the Response to RAI 247, Question 13.06.SRI.25.

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Table 1.6-1—Reports Referenced
Sheet 2 of 4

Report No. (See Notes 1, 2, and 3)	Title	Date Submitted to NRC	FSAR Section Number(s)
ANP-10285P ANP-10285NP	U.S. EPR Fuel Assembly Mechanical Design Topical Report	10/02/07	4
ANP-10286P ANP-10286NP	U.S. EPR Rod Ejection Accident Methodology Topical Report	11/20/07	4.3 and 15
ANP-10287P ANP-10287NP	Incore Trip Setpoint and Transient Methodology for U.S. EPR Topical Report	11/27/07	4, 6, 7, and 15
ANP-10288P ANP-10288NP	U.S. EPR Post-LOCA Boron Precipitation and Boron Dilution Technical Report	12/6/07	15
ANP-10290, Revision 1	AREVA NP Environmental Report Standard Design Certification	12/6/07	19.2
ANP-10291P ANP-10291NP	Small Break LOCA and Non-LOCA Sensitivity Studies and Methodology Technical Report	5/09	15
ANP-10292, Revision 1	U.S. EPR Conformance with Standard Review Plan (NUREG-0800) Technical Report	5/09	1.9
ANP-10293	U.S. EPR Design Features to Address GSI-191 Technical Report	2/08	15.6.5.4.3
ANP-10294, Revision 1	U.S. EPR Reactor Coolant Pump Motor Flywheel Structural Analysis Technical Report	3/09	5.4.1.6.6
ANP-10295, Revision 1	U.S. EPR Security Design Features	10/09	13.6
ANP-10296	U.S. EPR Design Features that Enhance Security	12/08	13.6
ANP-10304	U.S. EPR Instrumentation and Control Diversity and Defense in Depth Methodology Technical Report	5/09	
BAW-10132-A	Analytical Methods Description – Reactor Coolant System Hydrodynamic Loadings During a Loss-of-Coolant Accident	7/20/79	App. 3C
BAW-10133P-A BAW-10133-A Revision 1, Addendum 1 and 2	Mark-C Fuel Assembly LOCA-Seismic Analysis	10/30/00	4.2

13.06-28

13.6 Security

The physical security program provides physical features to detect, delay, assist response to, and defend against the design basis threat (DBT) for radiological sabotage.

13.06-28

Technical Report ANP-10295, "U.S. EPR Security Features," (Reference 14) provides safeguards and security related infromation that describe security design bases and requirements for system and components incorporated into the U.S. EPR standard design. The standard design features of the U.S. EPR that enhance security can be found in Technical Report ANP-10296, "U.S. EPR Design Features that Enhance Security." (Reference 15)

A COL applicant that references the U.S. EPR design certification will provide a site-specific security assessment that adequately demonstrates how the performance requirements of 10 CFR 73.55(a) are met for the initial implementation of the security program. The Security Assessment is Safeguards Information (SGI) and therefore is restricted from public release under 10 CFR 73.21. The site specific Security Assessment addresses identification of vital equipment, development of target sets, vulnerability assessments, defensive analyses, design features to enhance security, ~~the portions of the NRC orders to the current operating plants that impact U.S. EPR design,~~ and the other security features of the U.S. EPR that establish the security system design.

13.06-29

A COL applicant that references the U.S. EPR design certification will provide a security plan to the NRC to fulfill the requirements of 10 CFR 52.79(a)(35). The security plan consists of the Physical Security Plan (PSP), the guard force training and qualification (T&Q) plan, and the safeguards contingency plan. The security plan is SGI and therefore is restricted from public release under 10 CFR 73.21.

A COL applicant that references the U.S. EPR design certification will provide a cyber security plan consistent with 10 CFR 73.54.

A COL applicant that references the US EPR design certification will provide a security program, through the PSP and supporting documents such as the Vital Equipment List and the Vital Areas list, that incorporates the following security features:

13.6.1 Protected Area and Vital Areas

1. Vital equipment is located only within a Vital Area. Vital Areas boundaries are physical barriers with access controls provided for each of the points of entry.

2. Locations of vital equipment have been identified in the Vital Equipment List as found in Appendix A of Technical Report ANP-10295, "U.S. EPR Security Features." This document is Safeguards Information (SGI) and therefore is restricted from public release under 10 CFR 73.21.

3. Access to vital equipment requires passage through at least two physical barriers as defined in 10 CFR 73.2(a). The first substantial barrier between an adversary and a Vital Area is the Protected Area boundary which is described by the COL applicant in the site-specific PSP. The second substantial boundary is the Vital Area boundary. The description of the Vital Area boundary, and minimum separation between Vital Area and Protected Area boundary, can be found in Section 1.0 of Technical Report ANP-10295, "U.S. EPR Security Features." The COL applicant will describe the Protected Area boundary in the site-specific PSP.

4. Physical barriers for Protected Area perimeter are not also part of Vital Area boundary. The COL applicant will demonstrate that the Protected Area boundary is separate from the Vital Area boundaries in the site-specific PSP.

5. Isolation zones are maintained in outdoor areas adjacent to the Protected Area boundary which permits observation of 20 feet on either side of the boundary. Where permanent buildings do not allow a 20 foot observation distance on the inside of the Protected Area, the building walls are immediately adjacent to, or an integral part of, the Protected Area barrier. The COL applicant will describe the Isolation Zones in the site-specific PSP.

13.06-30

6. The external walls, doors, windows, ceiling, and floors in the main control room, central alarm station, secondary alarm station, and the last access control function for access to the Protected Area are bullet resistant to at least a UL Level 4 round. Descriptions of the applicable sections of walls, floors and ceilings of the main control room, central alarm station, and secondary alarm station ~~and the central alarm station~~ as well as the minimum concrete thickness for bullet resistance to a UL Level 4 round are found in Section 3.0 of Technical Report ANP-10295, "U.S. EPR Security Features." Doors into the main control room, central alarm station, and secondary alarm station ~~and the central alarm station~~ are UL rated as resistant to at a least a Level 4 round. The interior of the ~~CAS~~central alarm station and secondary alarm station cannot be observed from the Protected Area perimeter.

13.06-30 & 13.06-78

7. The walls, ceiling, and floor of the last access control function for access to the Protected Area are commensurate with the minimum concrete thickness listed in Section 3.0 of Technical Report ANP-10295, "U.S. EPR Security Features." Doors and windows into the last access control function for access to the Protected Area are UL rated as resistant to at a least a Level 4 round.

8. The secondary alarm station will be functionally equivalent to the central alarm station. The central alarm station and the secondary alarm station will be protected, designed, and equipped to equivalent standards.

13.6.2 Security Power System

1. The secondary security power supply system for alarm annunciator equipment and non-portable communications equipment is located within a Vital Area. The description of the Security Power System can be found in Section 2.0 of Technical Report ANP-10295, "U.S. EPR Security Features."

14. ANP-10295, Revision 1, "U.S. EPR Security Design Features," AREVA NP Inc., October 2009.

15. ANP-10296, Revision 0, "U.S. EPR Design Features that Enhance Security," AREVA NP Inc., December 2008.

13.06-28