

KHNPDCDRAIsPEm Resource

From: Ward, William
Sent: Wednesday, March 02, 2016 3:55 PM
To: apr1400rai@khnp.co.kr; KHNPDCDRAIsPEm Resource; daegeun.ahn@gmail.com; Andy Jiyong Oh; Mannon, Steven (steven.mannon@aecom.com)
Cc: Lee, Samuel; Ciocco, Jeff; Lee, Pete; Huyck, Doug; Vera, John
Subject: APR1400 Design Certification Application RAI 428-8412 (13.6 - Physical Security)
Attachments: APR1400 DC RAI 428 NSIR 8412.pdf

KHNP,

The attachment contains the subject request for additional information (RAI). This RAI was sent to you in draft form. Your licensing review schedule assumes technically correct and complete responses within 30 days of receipt of RAIs. However, KHNP requests, and we grant, 60 days to respond to this RAI. We may adjust the schedule accordingly.

Please submit your RAI response to the NRC Document Control Desk.

Thank you,

William R. Ward, P.E.
Senior Project Manager
U.S. Nuclear Regulatory Commission
m/s T6-D38M
Washington, DC, 20555-0001
NRO/DNRL/Licensing Branch 2
ofc T6-D31
ofc (301) 415-7038

U.S. NRC PROTECTING PEOPLE AND THE ENVIRONMENT
Please consider the environment before printing this email.

Hearing Identifier: KHNP_APR1400_DCD_RAI_Public
Email Number: 477

Mail Envelope Properties (278d9958e7384868adcb1bee8f5958f6)

Subject: APR1400 Design Certification Application RAI 428-8412 (13.6 - Physical Security)
Sent Date: 3/2/2016 3:54:42 PM
Received Date: 3/2/2016 3:54:44 PM
From: Ward, William

Created By: William.Ward@nrc.gov

Recipients:

"Lee, Samuel" <Samuel.Lee@nrc.gov>
Tracking Status: None
"Ciocco, Jeff" <Jeff.Ciocco@nrc.gov>
Tracking Status: None
"Lee, Pete" <Pete.Lee@nrc.gov>
Tracking Status: None
"Huyck, Doug" <Doug.Huyck@nrc.gov>
Tracking Status: None
"Vera, John" <John.Vera@nrc.gov>
Tracking Status: None
"apr1400rai@khnp.co.kr" <apr1400rai@khnp.co.kr>
Tracking Status: None
"KHNPDCDRAIsPEM Resource" <KHNPDCDRAIsPEM.Resource@nrc.gov>
Tracking Status: None
"daegeun.ahn@gmail.com" <daegeun.ahn@gmail.com>
Tracking Status: None
"Andy Jiyong Oh" <jiyong.oh5@gmail.com>
Tracking Status: None
"Mannon, Steven (steven.mannon@aecom.com)" <steven.mannon@aecom.com>
Tracking Status: None

Post Office: HQPWMSMRS05.nrc.gov

Files	Size	Date & Time
MESSAGE	778	3/2/2016 3:54:44 PM
APR1400 DC RAI 428 NSIR 8412.pdf		233761

Options

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

REQUEST FOR ADDITIONAL INFORMATION 428-8412

Issue Date: 03/02/2016

Application Title: APR1400 Design Certification Review – 52-046

Operating Company: Korea Hydro & Nuclear Power Co. Ltd.

Docket No. 52-046

Review Section: 13.06 - Physical Security

Application Section: Tier 1, Tier 2 FSAR Section 13.6, TR APR1400-D-A-NR-14002-P-SGI

QUESTIONS

13.06-5

Regulatory Basis:

Subpart B of 10 CFR 52, § 52.47, requires that information submitted for a design certification 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 52.47(b)(1) requires that the application must contain proposed inspections, tests, analyses, and acceptance criteria. Title 10 CFR 52.48 requires the applications filed will be reviewed for compliance with the standards set out in 10 CFR Part 73.

Tier 1, Section 2.12, Physical Security Hardware (Page 2-12-1), Tier 2 Section 13.6, Physical Security (Pages 13.6-1 to 13.6-3), and TR APR1400-E-A-NR-14002-P, “Physical Security Design Features”: The following general comments apply to information currently in the application and technical report incorporated by reference:

- (a) Provide, in Tier 2, FSAR Section 13.6, design descriptions of physical security systems, features, and hardware (referred to hereon as security structures, systems, and components (SSCs)) for the APR1400 standard design certification. Include, the general descriptions (non-SGI) of physical security systems and hardware that correspond with those identified as physical security ITAAC, Table 2.12-1 in Tier 1 of the DCD.
- (b) Provide design descriptions of how security SSCs will be designed and configured in the nuclear island structures, buildings and plant area of the APR1400 standard design. Specifically, the combination of information presented in Tier 2 FSAR and TR APR1400-E-A-NR-14002-P, supporting Tier 1 descriptions of designs must provide sufficient information on what and how engineered security SSCs will be configured and constructed/installed (e.g., shown using plan views, section views, block diagrams, design detail, material standards, etc.) in the layout of the APR1400 buildings and plant area, along with design criteria or requirements that are described. Include sufficient detail to show the redundancies, separations, and diversity of systems for achieving intended security functions and the final detailed design, construction, and installation will meet requirements of 10 CFR 73.55.
- (c) Revise Tier 2 FSAR Section 13.6 of the application and referenced safeguards technical report (FSAR Section 13.6.8, Reference No.3) to identify the descriptions of security SSCs within the scope of the APR-1400 standard plant and the descriptions of security SSCs that are site-specific (i.e., not within the scope of the DC) information to be provided by a COL applicant that references the APR1400 design.

REQUEST FOR ADDITIONAL INFORMATION 428-8412

Tier 2, Section 13.6, did not discuss or describe specifics of security SSCs for the APR1400 standard design certification or provide general (non-SGI) design descriptions that support the systems and hardware identified in Tier 1, Table 2.12-1, physical security ITAAC. The detailed descriptions of design performance, specifications, and configurations must support the design features and physical security ITAAC identified in Tier 1. The level of detail supporting design descriptions for how physical security systems will be designed should conform to RG 1.206, Figure 1, Combined License Application Referencing a Certified Design,” showing acceptable level of detail based on design completions for design certification finality.

Also, the stating of design criteria (prescriptive or performance requirements) in the application does not provide sufficient details for how the design of a security system, feature, or hardware will achieve a stated design criteria or requirement. Additional information that provides sufficient detail of how security SSCs will be designed, constructed, or installed are needed for the Commission’s finding that certified standard design is such that a facility will be constructed and operated in conformity with the design certification, the provisions of the Act, and the Commission's rules and regulations.

The specific information on design of security SSCs are captured under the APR1400 standard design certification and those that are site-specific (reserved for a COL applicant) must be completely and accurately described in the basis for the Commission’s finding in 10 CFR 52.47(b)(1).

Note: The information addressing specific details related to security features which is safeguards information (SGI) must be marked and protected in accordance with 10 CFR 73.21. The applicant should portion mark the text in the response to request for additional information (RAI) to appropriately identify SGI that reveals the specific details of security features incorporated in the APR1400 design. Other security-related or sensitive information should be identified and protected as required.

13.06-6

Regulatory Basis:

Subpart B of 10 CFR 52, § 52.47, requires that information submitted for a design certification 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 52.47(b)(1) requires that the application must contain proposed inspections, tests, analyses, and acceptance criteria. Title 10 CFR 52.48 requires the applications filed will be reviewed for compliance with the standards set out in 10 CFR Part 73.

Tier 2 (FSAR), Section 2.1.12.9, Communications Systems (Page 1.2-33), Section 9.5.2, Communications Systems (Pages 9.5-28 to 9.5-35), Section 13.6, Physical Security (Page 13.6-1), and Technical Report - APR1400-E-A-NR-14002-P, Rev 0: Provide the following additional information:

- (a) Describe how plant communications systems (described in Tier 2, FSAR Section 9.5.2) and dedicated security communications systems, or a combination of both, are relied on to achieve the design criteria identified in Section 9.5.2.1(e), Items 1 through 4. Specifically, describe how engineered communications systems (individually or in-

REQUEST FOR ADDITIONAL INFORMATION 428-8412

combinations) provide for redundancy and diversity for continuity of two-way security communications within and between buildings (e.g., Reactor Containment, Auxiliary Building, Emergency Generator Buildings, Turbine Generator Building, Compound Building, Main Access Control Building, CAS, SAS, etc.) and plant areas, including the designs for security communications at all levels and consideration of loud noise and dead spots;

- (b) Describe the plant communications systems that will be relied on and explain how they are integrated to allow for continuous on-site communications at all times between security force personnel (fixed and mobile) and each alarm station and other required communications (e.g., Main Control Room, off-site law enforcement assistance);
- (c) Describe how uninterruptible power supply and secondary power supply systems will be designed to provide sufficient capacity to meet power requirements and specific durations for dedicated security and/or plant communications systems without interruptions of functions;
- (d) Describe how the designs of the communication systems protect, detect, and/or monitor for continuity of communications, systems failures or troubled conditions of communications equipment and components, to assure performance of intended functions; and
- (e) Describe how the designs for on-site and off-site security communication systems provide redundancy, separation, and diversity for the assuring reliability and availability of communications in situations where malevolent acts may interrupt (e.g., radio frequency jamming, loss of off-site power, etc.) or interfere with on-site or off-site security communications.

The KHNP Physical Security Design Features report, APR1400-E-A-NR-14002-P, Rev 0, did not describe the design of security SSCs dedicated and/or plant systems credited for security communications. Specifically, Section 5, "Other Information to Address Known Potential RAI," states that Security communications will support security functions and criteria for design. However, it does not provide sufficient details for how the designs will achieve the stated design criteria and how continuous communications may be achieved through dedicated or a combination of plant communication systems. Stating design criteria are not sufficient design detail of how the engineered systems meet design criteria.

Tier 1, Section 2.6.9, "Communication Systems," describes plant communications systems as non-safety-related systems that provide effective intra-plant and plant-to-offsite communications and types of independent communications sub-systems. However, this section does not describe how the designs of security communications systems (dedicated and combination of plant communications systems) will be relied-on for security communications or how the designs provide effective means to communicate as stated.

Sections 9.5.2.1, Item e, restates the 10 CFR 73.55(j) performance requirement for security communications, but does not describe what or how the engineered dedicated security and/or plant communication systems are relied on to achieve the performance requirements. Additional information is needed to provide design bases for how the engineered systems and hardware (i.e., combined) are redundant, separated, and diverse to achieve the performance requirement of 10 CFR 73.55(j), and how the communications will be reliable and available to provide security communications at all times.

REQUEST FOR ADDITIONAL INFORMATION 428-8412

Note: The information addressing specific details related to security features which is safeguards information (SGI) must be marked and protected in accordance with 10 CFR 73.21. The applicant should portion mark the text in the response to request for additional information (RAI) to appropriately identify SGI that reveals the specific details of security features incorporated in the APR1400 design. Other security-related or sensitive information should be identified and protected as required.

13.06-7

Regulatory Basis:

Subpart B of 10 CFR 52, § 52.47, requires that information submitted for a design certification 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 52.47(b)(1) requires that the application must contain proposed inspections, tests, analyses, and acceptance criteria. Title 10 CFR 52.48 requires the applications filed will be reviewed for compliance with the standards set out in 10 CFR Part 73.

Tier 2 (FSAR), Section 9.5.3.2, System Descriptions (Page 9.5), Section 9.5.3.2.c, Security Lighting (Page 9.5-40), Table 1.8-2, Combined License Information Items, (Page 16 of 29), and Section 5, "Other Information to Address Know/Potential RAIs," Technical Report - APR1400-E-A-NR-14002-P, Rev 0 (Page15): Resolve and provide clarification for the statements in Section 9.5.3.2 and COL Item found in Table 1.8-2 in Section 1.8.1. Specifically:

- (a) Verify and indicate whether the COL Information Item No. 9.5(14) and reference to COL applicant action in Section 9.5.3.2.c only apply to the primary electrical power supply for normal security lighting. The COL Information Item No. 9.5(14) is currently not consistent with the statements that normal lighting, emergency AC lighting that will be provided by "480V AC buses through dry-type 480-208/120V transformers" and statements in Section 9.5.3 and Technical Report - APR1400-E-A-NR-14002-P which indicate that the secondary power supply in case of a LOOP or SBO is a power source included in the APR1400 standard plant.
- (b) Indicate, if applicable, that COL Information Item No. 9.5(14) is specifically for normal or primary electrical power supply and not applicable to the design for secondary power (backed up in LOOP or SOB) for security lighting, which is not a site-specific design for a COL applicant, and is included in the APR1400 standard design certification.

Clarifications and revisions are needed for information in the application Section 9.5.3.2.c, which states that "[t]he security lighting is power from offsite and backed up by the AAC source upon loss of offsite power." COL Information Item No. 9.5(14) states that "[t]he COL applicant is to provide electrical power for security lighting system," which is consistent with the previous statement only for electrical power for security lighting that will be provided from off-site sources.

Note: The information addressing specific details related to security features which is safeguards information (SGI) must be marked and protected in accordance with 10 CFR 73.21. The applicant should portion mark the text in the response to request for additional information (RAI) to appropriately identify SGI that reveals the specific details

REQUEST FOR ADDITIONAL INFORMATION 428-8412

of security features incorporated in the APR1400 design. Other security-related or sensitive information should be identified and protected as required.

13.06-8

Regulatory Basis:

Subpart B of 10 CFR 52, § 52.47, requires that information submitted for a design certification 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 52.47(b)(1) requires that the application must contain proposed inspections, tests, analyses, and acceptance criteria. Title 10 CFR 52.48 requires the applications filed will be reviewed for compliance with the standards set out in 10 CFR Part 73.

Tier 2, Section 9.5.3.2.c, Security Lighting (Page 9.5-40) and Chapter 13, Section 13.6.2.4 (Page 13-6.4): Describe the design and performance requirements for the secondary power supply for the reliability and availability of plant security lighting for illumination required for performing security. Provide additional information addressing the following:

- (a) Describe the design of systems for minimum illumination required within the APR1400 buildings and structures to perform security functions (i.e., relied on to provide assessment and target discrimination for security response). Specify, whether the minimum illumination of 0.2 foot-candles for the exterior plant area or the minimum of 0.1 foot-candles for illumination for emergency lighting is the design criteria that is applied for interior security lighting;
- (b) Describe the technical basis regarding the adequacy of minimum hour durations for the capacity of secondary power supply for security systems in TR APR1400-E-A-NR-14002-P (Sections 3.7 and 5). Indicate whether supply capacity for secondary power is designed to accommodate electrical power demand to maintain all or only certain engineered security systems to continue their intended functions,(e.g., security lighting, intrusion detection, assessment, communications, access controls, physical barrier systems, alarm station functions, search train, lighting, etc.) and for how long a duration; and
- (c) Clarify whether this minimum power supply described in TR APR1400-E-A-NR-14002-P (Sections 3.7 and 5) are in addition to security lighting system supplied from offsite and backed up by AAC source upon loss of offsite power stated in Tier 2, Section 9.5.3.2.c.

The security systems and features incorporated in the APR1400 standard plant provides the technical basis for determining adequacy of a physical protection system that will meet regulatory requirements. A reliable secondary power supply and uninterrupted transfer from primary to secondary is required for assuring reliability and availability of physical security systems to perform their intended functions. Specifically, the combination of information presented in Tier 2 FSAR and TR APR1400-E-A-NR-14002-P (containing Safeguards Information) descriptions of designs must provide sufficient information to show how systems and components and interfaces will be configured (e.g., plan views, section views, block diagrams, design detail, material standards, etc.), along with design criteria or requirements

REQUEST FOR ADDITIONAL INFORMATION 428-8412

described in the application, to describe how the designs of security SSCs will provide redundancies, separations, and diversity to achieve intended security functions.

Note: The information addressing specific details related to security features which is safeguards information (SGI) must be marked and protected in accordance with 10 CFR 73.21. The applicant should portion mark the text in the response to request for additional information (RAI) to appropriately identify SGI that reveals the specific details of security features incorporated in the APR1400 design. Other security-related or sensitive information should be identified and protected as required.

13.06-9

Regulatory Basis:

Subpart B of 10 CFR 52, § 52.47, requires that information submitted for a design certification 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 52.47(b)(1) requires that the application must contain proposed inspections, tests, analyses, and acceptance criteria. Title 10 CFR 52.48 requires the applications filed will be reviewed for compliance with the standards set out in 10 CFR Part 73.

Tier 2, Section 9.5.3.2, Lighting System, Section 9.5.3.2, Security Lighting System (Page 9.5-40) and Section 13.6.2 (Page 13.6-1): Indicate whether the design of security systems for the APR1400 standard plant will include the application of fixed engineered systems applying low-light technology (i.e., low-light, thermal, infrared, or other imaging camera for assessment and target discrimination) as an alternative or supplement to providing minimum illumination needed for security functions within the building and structures or exterior plant areas of the APR1400 standard plant. If engineered low-light technology will be applied, provide in TR APR1400-E-A-NR-14002-P, Rev 0, the design and performance requirements, along with the how the designs and configurations will achieve those requirements, and how the combination of plant security lighting system (normal and/or emergency lighting) and low-light technology system will provide reliability and availability of security lighting to perform intended security functions. Include specific design bases for how the plant lighting system and/or low light technology are credited for closed circuit television network system assessment, monitoring of locations, and assessment for security response.

Note: The information addressing specific details related to security features which is safeguards information (SGI) must be marked and protected in accordance with 10 CFR 73.21. The applicant should portion mark the text in the response to request for additional information (RAI) to appropriately identify SGI that reveals the specific details of security features incorporated in the APR1400 design. Other security-related or sensitive information should be identified and protected as required.

REQUEST FOR ADDITIONAL INFORMATION 428-8412

13.06-10

Regulatory Basis:

Subpart B of 10 CFR 52, § 52.47, requires that information submitted for a design certification 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 52.47(b)(1) requires that the application must contain proposed inspections, tests, analyses, and acceptance criteria. Title 10 CFR 52.48 requires the applications filed will be reviewed for compliance with the standards set out in 10 CFR Part 73.

FSAR Tier 2, Section 13.6, "Physical Security," (Page 13.6-1): Provide design descriptions (non-SGI) of engineered security SSCs (e.g., physical barriers for vital areas, security power system, lighting system, alarm system, communications system, and access control system, systems and features relied-on facilitating interior security responses and protecting responders, respectively). The descriptions must be sufficient to describe the designs and bases to support the Tier 1 Section 2.12, "Physical Security Hardware," physical security ITAAC and security systems and features that are within the buildings, structures, and plant areas. The descriptions in Tier 2 FSAR should include non-SGI design descriptions as publically available information, such as the prescriptive or performance requirements for designs of security SSCs to meet 10 CFR 73.55.

Tier 2, FSAR Section 13.6, "Physical Security," does not contain any descriptions of security systems, features, or hardware, design descriptions or design bases supporting Tier 1 physical security ITAAC that are not SGI and should be publically available information on the docket for the certification. The reference to TR APR1400-E-A-NR-14002-P, with design descriptions that is SGI, is not a justification for omitting non-SGI information in Tier 2 FSAR Section 13.6 that support Tier 1 information for certification

Note: The information addressing specific details related to security features which is safeguards information (SGI) must be marked and protected in accordance with 10 CFR 73.21. The applicant should portion mark the text in the response to request for additional information (RAI) to appropriately identify SGI that reveals the specific details of security features incorporated in the APR1400 design. Other security-related or sensitive information should be identified and protected as required.

13.06-11

Regulatory Basis:

Subpart B of 10 CFR 52, § 52.47, requires that information submitted for a design certification 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 52.47(b)(1) requires that the application must contain proposed inspections, tests, analyses, and acceptance criteria. Title 10 CFR 52.48 requires the applications filed will be reviewed for compliance with the standards set out in 10 CFR Part 73.

REQUEST FOR ADDITIONAL INFORMATION 428-8412

TR - APR1400-E-A-NR-14002-P, Rev 0 (Cover page, Title, and Header): Correct the document title. Revise the title of the safeguards technical report to match FSAR Section 13.6 (Page 13.6-3) Reference No. 3, which is “APR 1400 E-A-NR-14002-P-**SGI**, Rev. 0,” to clearly distinguish between the previously submitted security-related technical report, “APR 1400-E-A-NR-14002-P, Rev. A,” dated December 2014 and the same TR that was submitted September 2015. The corrected title in the document should indicate in the header and in this document “APR 1400 E-A-NR-14002-P-**SGI**, Rev. 0.”

Note: The information addressing specific details related to security features which is safeguards information (SGI) must be marked and protected in accordance with 10 CFR 73.21. The applicant should portion mark the text in the response to request for additional information (RAI) to appropriately identify SGI that reveals the specific details of security features incorporated in the APR1400 design. Other security-related or sensitive information should be identified and protected as required.

13.06-12

Regulatory Basis:

Subpart B of 10 CFR 52, § 52.47, requires that information submitted for a design certification 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 52.47(b)(1) requires that the application must contain proposed inspections, tests, analyses, and acceptance criteria. Title 10 CFR 52.48 requires the applications filed will be reviewed for compliance with the standards set out in 10 CFR Part 73.

Technical Report - APR1400-E-A-NR-14002-P, Rev 0, Section 3, “Design Features of Physical Security Systems within the Nuclear Island and Structures,” (Page 3): Confirm that the scope of security for the APR1400 standard design certification includes the stand-alone buildings referenced in Section 3.1, paragraphs 2 and 3 on Page 3 of TR APR1400-E-A-NR-14002-P, which are not described in Tier 2 FSAR Chapter 1 for the APR1400 standard plant. Identify any additional buildings and plant areas (e.g., PA, isolations zone) that are within the scope of security APR1400 standard design certification.

Additional information is needed to establish clearly what is in the scope for security designs for the APR1400 standard design certification that is requested for certification. The applicant describes security systems or features (e.g., CAS, SAS, bullet-resistance, single acts, alarm station, vital area, barriers, etc.) in both Sections 3 and 4 of TR, using the term “voluntary physical security element” in Section 4. The term “voluntary” implies that security systems, structures, or components are not needed, therefore leads to a lack of clarity of whether they are or they are not included in the scope for certifying the APR1400 standard design.

Guidance for staff was revised in NUREG-0800, SRP 13.6.2, Revision 2, to ensure that the applicant provides designs of security SSCs, at a minimum include all security SSCs that are within the buildings and structures for the scope of the APR1400 standard plant. Revision 2 reduces what the staff will review and should simplify what an applicant submits for review. Although the applicant is not required to use revision 2, staff suggests that the applicant consider it in this case. As stated in revision 2, staff's review is limited to the design of physical security systems within the nuclear power plant, and structures and plant areas included in the

REQUEST FOR ADDITIONAL INFORMATION 428-8412

scope of a DC. The applicant may include additional security SSCs other than those listed in SRP 13.6.2, Table 13.6.2-1, provided that they are clearly identified as within the scope for certification accordance with 10 CFR 52, Subpart B.

Note: The information addressing specific details related to security features which is safeguards information (SGI) must be marked and protected in accordance with 10 CFR 73.21. The applicant should portion mark the text in the response to request for additional information (RAI) to appropriately identify SGI that reveals the specific details of security features incorporated in the APR1400 design. Other security-related or sensitive information should be identified and protected as required.

13.06-13

Regulatory Basis:

Subpart B of 10 CFR 52, § 52.47, requires that information submitted for a design certification 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 52.47(b)(1) requires that the application must contain proposed inspections, tests, analyses, and acceptance criteria. Title 10 CFR 52.48 requires the applications filed will be reviewed for compliance with the standards set out in 10 CFR Part 73.

Technical Report - APR1400-E-A-NR-14002-P, Rev. 0, Section 3.1, Vital Area and Equipment (Element 1) (Page 3) and Appendix A, Vital Area Figures (Pages A-1 to A-20): For the buildings identified as CAS and SAS housing the alarm stations, incorporate in Appendix A, "Vital Area Figures," and in TR - APR1400-E-A-NR-14002-P, the site drawing showing the location of these buildings (e.g., the figure in Appendix C, "Perimeter Security Fence General Layout,") to clearly establish that additional buildings and plant areas are included in the scope of the APR1400 standard design certification. Also, provide in Appendix A, the plan and section views showing the locations and the configurations of the alarm stations within the CAS and SAS and identify the security SSCs and material construction designed to meet the requirements in 10 CFR 73.55.

Note: The information addressing specific details related to security features which is safeguards information (SGI) must be marked and protected in accordance with 10 CFR 73.21. The applicant should portion mark the text in the response to request for additional information (RAI) to appropriately identify SGI that reveals the specific details of security features incorporated in the APR1400 design. Other security-related or sensitive information should be identified and protected as required.

13.06-14

Regulatory Basis:

Subpart B of 10 CFR 52, § 52.47, requires that information submitted for a design certification 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

REQUEST FOR ADDITIONAL INFORMATION 428-8412

52.47(b)(1) requires that the application must contain proposed inspections, tests, analyses, and acceptance criteria. Title 10 CFR 52.48 requires the applications filed will be reviewed for compliance with the standards set out in 10 CFR Part 73.

Technical Report - APR1400-E-A-NR-14002-P, Rev. 0, Section 3.1, Vital Area and Equipment (Element 1), (Page 3) and Appendix A, vital Area Figures on Page A-9: Provide the following additional information with respect to designation of vital area and its boundaries:

- (a) Indicate, on the plan view for the elevation indicated on Page A-9, the portion of the structure that forms the vital area boundary for the Spent Fuel Pool. The caption provided in the plan view on Page A-9 does not show that it applied to the areas of the structures between column lines 23 and 25 for the Spent Fuel Pool.
- (b) Describe the spent fuel pool as a vital area in Section 3.1 to clarify whether the boundaries (sides walls and floor/bottom) of the spent fuel pool forms the vital area boundaries (where there are no access or openings) and confirm whether additional vital area boundaries, identified in figures on Pages A-4 through A-7, encompass the spent fuel pool to provide an additional vital area barrier controlling access to areas adjacent to the spent fuel pool (side walls and bottom/floor).

The information provided must be sufficient detailed to describe the designs and design bases for security systems and features of the APR1400 standard design. The spent fuel pool, designated as vital area in accordance with requirement of 10 CFR 73.55(e)(9), is six-sided pool with VA boundaries for control of access to the top-side. The description does not establish whether the remaining sides serve as VA boundaries and whether additional VA boundaries are established for the remaining sides and bottom/floor of the spent fuel pool as show in designated vital areas at various elevations in Appendix A.

Note: The information addressing specific details related to security features which is safeguards information (SGI) must be marked and protected in accordance with 10 CFR 73.21. The applicant should portion mark the text in the response to request for additional information (RAI) to appropriately identify SGI that reveals the specific details of security features incorporated in the APR1400 design. Other security-related or sensitive information should be identified and protected as required.

13.06-15

Regulatory Basis:

Subpart B of 10 CFR 52, § 52.47, requires that information submitted for a design certification 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 52.47(b)(1) requires that the application must contain proposed inspections, tests, analyses, and acceptance criteria. Title 10 CFR 52.48 requires the applications filed will be reviewed for compliance with the standards set out in 10 CFR Part 73.

Technical Report - APR1400-E-A-NR-14002-P, Rev. 0, Section 3.1, Vital Area and Equipment (Element 1), (Page 3) and Appendix A, vital Area Figures on Page A-9: Provide the following additional information:

REQUEST FOR ADDITIONAL INFORMATION 428-8412

- (a) Show the boundaries (walls, floor, ceiling) for the secondary power supply room for annunciation equipment that has been designated as a vital area (figure on page A-4) and identify on the elevation as described in Section 3.1;
- (b) Verify and confirm that the design of the alarm system is such that the secondary power supply for annunciation equipment will be at a remote location from the location identified or whether there is a different secondary power supply for the alarm stations equipped with alarm system central processing units and displays for performing security functions;
- (c) Describe how the design of the alarm systems are redundant, reliable and available with a single point failure at the source of secondary power supply. Include description of how the design will provide continuity of power for the alarm system and sub-systems and components in the alarm station without disruptions to alarm systems and other security controls and system intended functions; and
- (d) Describe design requirements for the capacity of secondary power supply for continuity of security SSCs' intended security functions and the design basis for the minimum durations for a sustained secondary power supply to allow for reconstitution of primary power supply.

The information provided must be sufficient detailed to describe the designs and design bases for security systems and features of the APR1400 standard design. Additional information is needed to establish clearly the vital areas and sufficient design details of dedicated security SSCs and/or safety SSCs relied-on for secondary power supply for security systems for the APR1400 standard design certification.

Note: The information addressing specific details related to security features which is safeguards information (SGI) must be marked and protected in accordance with 10 CFR 73.21. The applicant should portion mark the text in the response to request for additional information (RAI) to appropriately identify SGI that reveals the specific details of security features incorporated in the APR1400 design. Other security-related or sensitive information should be identified and protected as required.

13.06-16

Regulatory Basis:

Subpart B of 10 CFR 52, § 52.47, requires that information submitted for a design certification 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 52.47(b)(1) requires that the application must contain proposed inspections, tests, analyses, and acceptance criteria. 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 73.2, "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

REQUEST FOR ADDITIONAL INFORMATION 428-8412

required to function to protect public health and safety following such failure, destruction, or release are also considered to be vital.”

Technical Report - APR1400-E-A-NR-14002-P, Rev. 0, Section 3.1, Vital Area and Equipment (Element 1), (Page 5, first ending paragraph):

- (a) Clarify whether Reference (5) refers to SANDIA Report No. SAND2008-5644, “Vital Area Identification for U.S. Nuclear Regulatory Commission Nuclear Power Reactor Licensee and New Reactor Applicants,” or NUREG-1178, “Vital Equipment/Area Guidelines Study: Vital Area Committee Report.”
- (b) Describe how Reference (5) was applied for determining “SSC that are important to safety based on the function it performs, and it was directly or indirectly related to responding to a hostile attack on the plant.”

The identification of vital equipment must be in accordance with 10 CFR 73.2. The guidance in the referenced NUREG-1178 or SAND2008-5644 are not substitute to the regulation. The NUREG-1178 assumptions are not specifically intended for identifying vital equipment as defined by 10 CFR 73.2. The study documented in NUREG-1178 was an attempt, in the pre-September 11, 2001, environment, by the NRC staff to establish an approach for determining what safety functions and associated SSC should be protected against the DBT for radiological sabotage in the 1980s. For example, Assumptions 3, 5, and 9 in NUREG-1178, “NUREG-1178, “Vital Equipment/Area Guidelines Study: Vital Area Committee Report” are contrary to 10 CFR 73.2 that defines vital equipment. The remaining assumptions are related to: core damage, protecting the control room, unavailability of offsite power, conditions leading to a radiological release exceeding the exposure threshold of 10 CFR Part 100, use of explosives by saboteurs in the pre-September 11, 2001, environment, equipment not located in vital areas, protecting the SFP, backup power, and operator or adversary actions. The application of NUREG-1178 does not satisfy regulatory requirements defining vital equipment in 10 CFR 73.2 for identification of vital equipment.

Section 5.1.2 of Regulatory Guide 5.81, “Target Set Identification and Development for Nuclear Power Reactors,” issued November 2010, specifically provide guidance that states, “[t]he technical recommendations in NUREG 1178, “Vital Equipment/Area Guidelines Study: Vital Area Committee Report,” published in 1988 should not be utilized for the identification of vital equipment as the assumptions in this document do not consider all equipment that should be identified as vital in accordance with in 10 CFR 73.2.” Similarly, guidance in SAND2008-5644 Report for designating vital areas based on assessment of radiological sabotage risk is not a substitute or does not supersedes regulations defining vital equipment or designation of vital areas.

Note: The information addressing specific details related to security features which is safeguards information (SGI) must be marked and protected in accordance with 10 CFR 73.21. The applicant should portion mark the text in the response to request for additional information (RAI) to appropriately identify SGI that reveals the specific details of security features incorporated in the APR1400 design. Other security-related or sensitive information should be identified and protected as required.

REQUEST FOR ADDITIONAL INFORMATION 428-8412

13.06-17

Regulatory Basis:

Subpart B of 10 CFR 52, § 52.47, requires that information submitted for a design certification 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 52.47(b)(1) requires that the application must contain proposed inspections, tests, analyses, and acceptance criteria. Title 10 CFR 52.48 requires the applications filed will be reviewed for compliance with the standards set out in 10 CFR Part 73.

Technical Report - APR1400-E-A-MR-14002- P, Rev. 0, Section 3.3, Bullet-Resistance of the Main Control Rom (Element 3) (Page 6): Indicate the specific section or sections of UL 752, "Standard for Bullet-Resistance Equipment," (Reference 6) that will be applied as the design standard for qualifying (or listing) the construction of walls, floors, and ceiling structural assemblies to meet the minimum bullet-resisting capability stated in Section 3.3. Include the following additional information for the design and design bases for bullet-resistance:

- (a) Provide plan and section views for the configuration and construction of bullet-resistance structural assemblies, including how the design protects penetrations into Main Control Room for a design and construction that meets the UL standard;
- (b) Describe how the design and construction material of walls, floors, and ceiling for the buildings will be relied on to meet minimum bullet-resistance requirement
- (c) Identify any margin or defense-in-depth that may be credited based on the design and construction of the credited MCR structure that exceeds the required dimensions and material construction for minimum bullet-resistance function;
- (d) Describe the designs for protection of openings and penetrations, such as doors, windows, HVAC, control cables, and utilities, through the walls, floors, or ceiling enclosing the MCR for bullet resistance functions; and
- (e) Delete statement "or other NRC approved equivalent" and indicate specific standard, section, and descriptions (e.g., Department of Justice's) that may be applied by the applicant for the design and construction of bullet-resistance barriers to MCR.

The APR1400 design incorporates design commitments and requirements in UL 752 for listing or qualifying construction assemblies to be bullet-resistance. Additional information is needed for how the designs and constructions of walls, floors, and ceiling of the APR1400 standard plant can be relied-on to perform security functions. The certification of standard design cannot be contingent on "or other NRC approve equivalent," that is not described for meeting specific regulatory requirement.

Note: The information addressing specific details related to security features which is safeguards information (SGI) must be marked and protected in accordance with 10 CFR 73.21. The applicant should portion mark the text in the response to request for additional information (RAI) to appropriately identify SGI that reveals the specific details of security features incorporated in the APR1400 design. Other security-related or sensitive information should be identified and protected as required.

REQUEST FOR ADDITIONAL INFORMATION 428-8412

13.06-18

Regulatory Basis:

Subpart B of 10 CFR 52, § 52.47, requires that information submitted for a design certification 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 52.47(b)(1) requires that the application must contain proposed inspections, tests, analyses, and acceptance criteria. Title 10 CFR 52.48 requires the applications filed will be reviewed for compliance with the standards set out in 10 CFR Part 73.

Technical Report - APR1400-E-A-NR-14002- P, Rev. 0, Section 3.4, Vital Area Barriers (Architectural Features) (Element 4) (Pages 5-6): For the physical barriers described and identified for the buildings in Section 3.4, provide the design basis assumptions (i.e., delay times) for the walls, floors, ceiling and doors to functions as security feature for delay. Specifically, where these physical barriers are credited to provide delay functions for security response, specify the minimum delay times based mechanical and explosive breaching and defeat of protected openings to identify the least delay time for feature on the structure assembly (e.g., doors, windows, vents).

The information provided must be sufficient detailed to describe the designs and design bases for security systems and features of the APR1400 standard design. Additional information is needed to establish sufficient design details of dedicated security SSCs and/or safety SSCs relied-on as vital areas barriers for the APR1400 standard design certification.

Note: The information addressing specific details related to security features which is safeguards information (SGI) must be marked and protected in accordance with 10 CFR 73.21. The applicant should portion mark the text in the response to request for additional information (RAI) to appropriately identify SGI that reveals the specific details of security features incorporated in the APR1400 design. Other security-related or sensitive information should be identified and protected as required.

13.06-19

Regulatory Basis:

Subpart B of 10 CFR 52, § 52.47, requires that information submitted for a design certification 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 52.47(b)(1) requires that the application must contain proposed inspections, tests, analyses, and acceptance criteria. Title 10 CFR 52.48 requires the applications filed will be reviewed for compliance with the standards set out in 10 CFR Part 73.

Technical Report - APR1400-E-A-NR-14002- P, Rev. 0, Section 3.5, "Vital Area Physical Barriers (Penetration Features) (Element 5)," (Page 6): Indicate the specific guidance from Regulatory Guide 5.65, "Vital Area Access Control, Protection of Physical Security Equipment, and Key and Lock Controls," (Reference 7) that will be applied in the designs of security systems or hardware for the APR1400 standard design certification. Indicate specific sections

REQUEST FOR ADDITIONAL INFORMATION 428-8412

of RG 5.65 and provide descriptions of the design requirements and specific methods or approaches that will be included as part of the design bases for the APR1400 standard design certification. RGs provide guidance for meeting regulations, but are not requirements.

The information provided must be sufficient in detailed to establish the designs and design bases for security systems and features that are in the scope of the APR1400 standard design. RGs provide guidance for meeting regulations, but are not requirements. The applicant did not state that RG 5.65 is incorporated by reference (in whole or in parts) as the design bases for security SSCs for the design certification.

Note: The information addressing specific details related to security features which is safeguards information (SGI) must be marked and protected in accordance with 10 CFR 73.21. The applicant should portion mark the text in the response to request for additional information (RAI) to appropriately identify SGI that reveals the specific details of security features incorporated in the APR1400 design. Other security-related or sensitive information should be identified and protected as required.

13.06-20

Regulatory Basis:

Subpart B of 10 CFR 52, § 52.47, requires that information submitted for a design certification 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 52.47(b)(1) requires that the application must contain proposed inspections, tests, analyses, and acceptance criteria. Title 10 CFR 52.48 requires the applications filed will be reviewed for compliance with the standards set out in 10 CFR Part 73.

Technical Report - APR1400-E-A-NR-14002- P, Rev. 0, Section 3.6, "Vital Area Portal Egress (Element 6)," (Pages 6 and 7): Provide design descriptions, including plan and section views and figures, for how vital area portals will be designed and constructed to meet the criteria that it will "provide delay to force entry and resistant to mechanical breaching using various method," as stated in this section. Describe the specific systems or features that are relied on to provide delay functions, specify the minimum delay time required or provided by design of the vital area portals, and indicate whether the delay time will be equivalent, less than, or greater than the specific delay times associated with the vital area barriers (e.g., walls, floors, ceiling construction). Confirm that the designs of vital area portals that are integral to the nuclear island and structures accounts for structural seismic protection.

The information provided must be sufficient detailed to describe the designs and design bases for security systems and features of the APR1400 standard design. Additional information is needed to establish sufficient design details of dedicated security SSCs and/or safety SSCs relied-on as vital areas barriers for the APR1400 standard design certification.

Note: The information addressing specific details related to security features which is safeguards information (SGI) must be marked and protected in accordance with 10 CFR 73.21. The applicant should portion mark the text in the response to request for additional information (RAI) to appropriately identify SGI that reveals the specific details

REQUEST FOR ADDITIONAL INFORMATION 428-8412

of security features incorporated in the APR1400 design. Other security-related or sensitive information should be identified and protected as required.

13.06-21

Regulatory Basis:

Subpart B of 10 CFR 52, § 52.47, requires that information submitted for a design certification 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 52.47(b)(1) requires that the application must contain proposed inspections, tests, analyses, and acceptance criteria. Title 10 CFR 52.48 requires the applications filed will be reviewed for compliance with the standards set out in 10 CFR Part 73.

Technical Report - APR1400-E-A-NR-14002- P, Rev. 0, Section 3.7, "Control of Unoccupied Vital Area (Element 7). (Page 7): Provide the following additional information:

- (a) Describe how the design of security systems will meet the stated design criteria that doors are tamper alarmed such that "if someone does not use the card reader to enter or exit the door, an alarm is received in both the CAS and SAS." Clarify whether the design is such that access authorization device (e.g. card readers, biometric, or other hardware) are supervised and tamper protected for indications of device trouble and alarm annunciations at the alarm stations when someone does not use the card reader;
- (b) Describe the safety and/or non-safety SSCs of the APR1400 standard design that will be relied on to provide the independent secondary security power supply for dedicated security SSCs for performing security functions. Discuss the design assumptions regarding the durations of secondary power supply needed until plant conditions or security actions could allow for conduct of operations onsite and/or offsite support to restore primary power; and
- (c) Provide design descriptions of dedicated security systems, plant systems, or a combination of systems for providing uninterruptable power secondary power supply to security SSCs described in TR APR1400-E-A-NR-14002-P, including the security lighting described in Tier 2 FSAR Section 9.5.3.2.c.

The description for design of security systems and features state the criteria, but does not describe how the design will achieve the stated design criteria or performance requirement. The information provided must be sufficient detailed to describe the designs and design bases for security systems and features relied-on for control of vital areas for the APR1400 standard design.

Note: The information addressing specific details related to security features which is safeguards information (SGI) must be marked and protected in accordance with 10 CFR 73.21. The applicant should portion mark the text in the response to request for additional information (RAI) to appropriately identify SGI that reveals the specific details of security features incorporated in the APR1400 design. Other security-related or sensitive information should be identified and protected as required.

REQUEST FOR ADDITIONAL INFORMATION 428-8412

13.06-22

Regulatory Basis:

Subpart B of 10 CFR 52, § 52.47, requires that information submitted for a design certification 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 52.47(b)(1) requires that the application must contain proposed inspections, tests, analyses, and acceptance criteria. Title 10 CFR 52.48 requires the applications filed will be reviewed for compliance with the standards set out in 10 CFR Part 73.

Technical Report - APR1400-E-A-NR-14002- P, Rev. 0, Section 3.7, "Control of Unoccupied Vital Area (Element 7)," (Page 7): Provide the following on the designs and configurations of engineered security SSCs relied on for controlling access to unoccupied vital areas:

- (a) Illustrate how the primary and secondary power supply will be configured for security systems, including how the power supplies are independent of primary and secondary power supply to alarm systems to maintain security functions in the event of a LOOP. Clarify whether access control systems and hardware rely on the same secondary power supply;
- (b) Describe how the design will provide the minimum duration indicated for secondary power;
- (c) Specify the design requirements for the devices' operational conditions upon the loss of primary and the loss of secondary power (e.g., remain active or locked position, deactivate or unlock, capability for manual overrides, etc.);
- (d) Illustrate how power supplies and means of power and alarm transmissions to security devices are configured to protect against tampering or by-pass (e.g., located inside the vital area and not accessible from outside of the vital area, conductors in conduits, etc.);
- (e) Confirm whether tamper and supervision of locking device on security doors are designed to provide system trouble and alarm indications at the CAS and SAS;
- (f) Describe the means for data communication to "the computer" for determining access modes and information (last paragraph in this Section on Page 7); and
- (g) Provide security systems block diagrams, along with design requirements described, to illustrate how the design of the access control system, sub-systems, components, and devices that will interface with each other and interface with other security systems or components (e.g., security alarm system at the CAS and SAS, other locations, primary and secondary power supply, engineered delay barriers, etc.).

The descriptions for designs of security systems and features capture certain design criteria or performance requirements, but does not describe how the design will achieve the stated design criteria or performance requirement. Additional information is needed to illustrate how the design of security systems and features interfaces and are integrated with other engineered security systems to provide intended functions for intrusion detection/assessment and delay of

REQUEST FOR ADDITIONAL INFORMATION 428-8412

access, and provide emergency egress, through doors and access portals for vital areas of the APR1400 standard plant.

Note: The information addressing specific details related to security features which is safeguards information (SGI) must be marked and protected in accordance with 10 CFR 73.21. The applicant should portion mark the text in the response to request for additional information (RAI) to appropriately identify SGI that reveals the specific details of security features incorporated in the APR1400 design. Other security-related or sensitive information should be identified and protected as required.

13.06-23

Regulatory Basis:

Subpart B of 10 CFR 52, § 52.47, requires that information submitted for a design certification 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 52.47(b)(1) requires that the application must contain proposed inspections, tests, analyses, and acceptance criteria. Title 10 CFR 52.48 requires the applications filed will be reviewed for compliance with the standards set out in 10 CFR Part 73.

Technical Report - APR1400-E-A-MR-14002- P, Rev. 0, Section 3.4, Vital Area Barriers (Architectural Features) (Element 4) (Pages 5-6); Section 3.5, "Vital Area Physical Barriers (Penetration Features) (Element 5)," (Page 6); Section 3.6, "Vital Area Portal Egress (Element 6)," (Pages 6 and 7); and Appendix A, "Vital Area Figures," (Pages A-1 to A-20): Provide plan and sections views illustrating the typical or specific protection of openings through the vital areas (e.g., door installation and construction, location of intrusion detection, and locking devices and features described in Sections 3.4 through 3.7, and their locations on the vital area boundaries identified in Appendix A.). Also address the following for the design of security SSCs to perform intended security functions:

- (a) Describe how the doors (for occupied or unoccupied) for controlling access into the vital areas will be designed. Include the design requirements for construction material (e.g., steel doors, vault type construction; etc.);
- (b) Describe the design requirements for status or condition of door or locking devices upon loss of power to locking devices; and any design capabilities for remote controlling and monitoring access;
- (c) Describe how the design will provide for rapid emergency egress that satisfies both security and safety requirements;
- (d) Describe how the designs of engineered hardware for protecting penetrations achieve the criteria stated in Section 3.5 and allows utilities (specifically HVAC) through the vital areas walls, floors, or ceilings to perform or meet their intended safety functions; and
- (e) Describe how the proposed design of security systems, features, and hardware that will protect penetrations (above and below ground) at the VA boundary, will maintain a continuous physical barrier.

REQUEST FOR ADDITIONAL INFORMATION 428-8412

The descriptions for designs of security systems and features capture certain design criteria or performance requirements, but does not describe how the design will achieve the stated design criteria or performance requirements. Additional information, such as “Key Door Locations,” illustrated in Pages 32-49 of TR ARP1400-E-A-NR-14001-P-SGI (not IBR), are needed to illustrate how the designs of security SSCs interfaces and are integrated in the APR1400 standard design for construction and installation.

Note: The information addressing specific details related to security features which is safeguards information (SGI) must be marked and protected in accordance with 10 CFR 73.21. The applicant should portion mark the text in the response to request for additional information (RAI) to appropriately identify SGI that reveals the specific details of security features incorporated in the APR1400 design. Other security-related or sensitive information should be identified and protected as required.

13.06-24

Regulatory Basis:

Subpart B of 10 CFR 52, § 52.47, requires that information submitted for a design certification 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 52.47(b)(1) requires that the application must contain proposed inspections, tests, analyses, and acceptance criteria. Title 10 CFR 52.48 requires the applications filed will be reviewed for compliance with the standards set out in 10 CFR Part 73.

The term “voluntary” is not within the 10 CFR Part 73 nor in 10 CFR Part 52, and it is used, in part, when referencing commitments that are not legally binding and not subject to established regulatory change control processes. Revision 1 of SRP 13.6.2, which the applicant is using, includes discussion on voluntary physical security elements. However, the descriptions of physical security systems within the scope of the standard certification being characterized as “voluntary,” implies that they are not a required for or a part of the design certification. Revision 2 to SRP 13.6.2, dated June 2015, specifically deleted the use of the term “voluntary” for clarity of information provided on the docket to support design certification. As discussed in revision 2, staff’s review will be limited and will not include the review of voluntary elements. Remove any information describing physical security systems that are not in the scope of the APR1400 standard design.

Technical Report - APR1400-E-A-NR-14002- P, Rev. 0, Section 4, Voluntary Physical Security Element (Pages 9 through 14), Section 2, “Scope,” (Page 2):

- (a) Identify clearly any additional buildings, structures, or specific physical security systems, features, or hardware that are not within or integral to the plant structures listed above, but the applicant has chosen to include for the certification of the APR1400 standard design (i.e., within the scope of the design certification).
- (b) Provide descriptions for designs of all physical security systems and features (e.g., delay gates, vault doors, protected fighting positions, access control to vital areas, internal

REQUEST FOR ADDITIONAL INFORMATION 428-8412

surveillance, etc. and others engineered features) that are integral to the following (as described in Chapter 1) for the APR1400 standard plant:

- Reactor containment building
 - Auxiliary building including two emergency diesel generator rooms
 - Turbine generator building
 - Compound building
 - Emergency diesel generator building with two emergency diesel generator rooms
 - Alternate alternating current gas turbine generator building
 - Essential service water intake structure and ultimate heat sink related structure
 - Component cooling water heat exchanger building
- (c) Remove the term “voluntary,” for any descriptions for designs of physical security systems that are within the scope of the APR1400 standard design certification.

The Tier 2 FSAR and TR - APR1400-E-A-NR-14002-P-SGI, incorporated by reference, must clearly establish physical security systems or features that are a part of the APR1400 standard plant certification and include sufficient detailed design descriptions as standard for security design within the scope for Commission certification under Subpart B of 10 CFR Part 52. The design descriptions for physical security systems within the scope for design certification (i.e., constructed or installed within or on these structures of the Power Block) are not “voluntary,” and descriptions are required for certification according to requirements of Subpart B of 10 CFR Part 52.

Note: The information addressing specific details related to security features which is safeguards information (SGI) must be marked and protected in accordance with 10 CFR 73.21. The applicant should portion mark the text in the response to request for additional information (RAI) to appropriately identify SGI that reveals the specific details of security features incorporated in the APR1400 design. Other security-related or sensitive information should be identified and protected as required.

13.06-25

Regulatory Basis:

Subpart B of 10 CFR 52, § 52.47, requires that information submitted for a design certification 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 52.47(b)(1) requires that the application must contain proposed inspections, tests, analyses, and acceptance criteria. Title 10 CFR 52.48 requires the applications filed will be reviewed for compliance with the standards set out in 10 CFR Part 73.

Technical Report - APR1400-E-A-NR-14002-P, Rev 0, Section 4, “Voluntary Physical Security Element,” (Pages 9 through 14), and Section 2, Scope (Page 2): Provide additional information to address security SSCs described in Section 4:

REQUEST FOR ADDITIONAL INFORMATION 428-8412

- (a) Confirm that identified and described security SSCs in Section 4 (e.g., alarm stations, secondary power supply, bullet-resistance of CAS,SAS, and Last Access Control Location, single act, alarm station equivalency and redundancy, requirement for passage through to barriers, separation of VA and PA barriers, locking devices, PA barrier, protection of penetrations, protection of unattended openings, isolation zone, intrusion detection and assessment and backup power, and security fighting positions) are within the scope of the APR1400 standard design certification for security;
- (b) Provide descriptions, including their locations to distinguish clearly the site-specific design from the standard design certification, that are subject of COL information items or COL applicant's designs (i.e., Sections 4.6, 4.9, 4.10, 4.11);
- (c) For the design descriptions provided in Section 4, provide additional detail sufficient to describe how security SSCs will be designed and configured, constructed, and/or installed to meet the design criteria and requirements stated in Section 4.
- (d) Incorporate the information found in TR ARP1400-E-A-NR-14001-P-SGI, Rev. 0, on descriptions of design details and illustrates the security SSCs configurations for the APR1400 standard design certification into TR ARP1400-E-A-NR-14002-P that is incorporated by reference.
- (e) For the physical security systems identified in Section 4, Pages 9 through 16, that will be included within the scope the APR1400 standard design certification, revise Tier 2, FSAR Section 13.6, to incorporate the descriptions of security systems and features in Section 4, along with Section 3 of TR APR1400-E-A-MR-14002- P, Rev. 0. The revision to Section 13.6 must indicate the additional buildings, structures, and/or plant areas that are included in the APR1400 standard design certification for security design, but are not reflected in the descriptions for buildings and structures identified in FSAR Chapter 1.

Section 4 of TR APR1400-E-A-NR-14002-P described design requirements that are identified as "voluntary," which implies that these descriptions need not be included for considerations in the design certification of the APR1400 standard design certification. Additional information is needed to establish the design and design bases for security systems, features, or hardware that are relied-on to perform security functions for the APR1400 standard design.

Note: The information addressing specific details related to security features which is safeguards information (SGI) must be marked and protected in accordance with 10 CFR 73.21. The applicant should portion mark the text in the response to request for additional information (RAI) to appropriately identify SGI that reveals the specific details of security features incorporated in the APR1400 design. Other security-related or sensitive information should be identified and protected as required.

13.06-26

Regulatory Basis:

Subpart B of 10 CFR 52, § 52.47, requires that information submitted for a design certification 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

REQUEST FOR ADDITIONAL INFORMATION 428-8412

52.47(b)(1) requires that the application must contain proposed inspections, tests, analyses, and acceptance criteria. Title 10 CFR 52.48 requires the applications filed will be reviewed for compliance with the standards set out in 10 CFR Part 73.

Technical Report - APR1400-E-A-NR-14002- P, Rev. 0, Section 4.1, "Vital Areas and Equipment Not within the Scope of the Standard Design (Voluntary Element 1)," (Page 9): Provide descriptions of the safety-related systems (and risk-significant non-safety related systems if applicable) that are considered outside the scope for the APR1400 standard plant, which will be addressed by a COL applicant. Provide general descriptions of site specific safety SSCs not included in the APR1400 standard design that would be justified as site-specific information outside the scope for certification.

Note: The information addressing specific details related to security features which is safeguards information (SGI) must be marked and protected in accordance with 10 CFR 73.21. The applicant should portion mark the text in the response to request for additional information (RAI) to appropriately identify SGI that reveals the specific details of security features incorporated in the APR1400 design. Other security-related or sensitive information should be identified and protected as required.

13.06-27

Regulatory Basis:

Subpart B of 10 CFR 52, § 52.47, requires that information submitted for a design certification 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 52.47(b)(1) requires that the application must contain proposed inspections, tests, analyses, and acceptance criteria. Title 10 CFR 52.48 requires the applications filed will be reviewed for compliance with the standards set out in 10 CFR Part 73.

Technical Report - APR1400-E-A-NR-14002-P-SGI, Section 4.2, "Definition of Alarm Stations and Secondary Power Supplies as Vital Areas (Voluntary Element 2)," (Page 9): Provide design descriptions (i.e., plan and section views) illustrating the configurations of the alarm stations within the building identified as CAS and SAS, with the design details showing how physical security systems and components described in Section 3 and Section 4 for meeting requirements of 10 CFR 73.55 (e.g., bullet-resistance, access controls, locks and alarms, etc.) are integrated in the security design for certification. Include specific configurations of engineered security systems and components for providing primary and secondary power supply, lighting, and security communications, intrusion (interior and exterior) detection and assessment systems, physical barriers, access controls, and others that are required for performing alarm station functions.

Note: The information addressing specific details related to security features which is safeguards information (SGI) must be marked and protected in accordance with 10 CFR 73.21. The applicant should portion mark the text in the response to request for additional information (RAI) to appropriately identify SGI that reveals the specific details of security features incorporated in the APR1400 design. Other security-related or sensitive information should be identified and protected as required.

REQUEST FOR ADDITIONAL INFORMATION 428-8412

13.06-28

Regulatory Basis:

Subpart B of 10 CFR 52, § 52.47, requires that information submitted for a design certification 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 52.47(b)(1) requires that the application must contain proposed inspections, tests, analyses, and acceptance criteria. Title 10 CFR 52.48 requires the applications filed will be reviewed for compliance with the standards set out in 10 CFR Part 73.

Technical Report - APR1400-E-A-NR-14002-P-SGI, Section 4.2, "Definition of Alarm Stations and Secondary Power Supplies as Vital Areas (Voluntary Element 2)," (Page 9): Provide the following for the designs and design bases of alarm stations:

- (a) Illustrate on figure on Page A-4, the locations of secondary power supplies;
- (b) Provide plan and section views for the construction of the enclosure of the alarm station designated as a vital area and show how the design, construction, and installation of barriers, protection of penetrations, and systems and hardware to meet the requirements of 10 CFR 73.55 for a vital area boundary; and
- (c) Indicate on the plan view the conceptual design for equipment that will be installed (as described in Sections 4.4 and 4.5) for redundancies in the designs of security SSCs to perform required alarm station functions.

Note: The information addressing specific details related to security features which is safeguards information (SGI) must be marked and protected in accordance with 10 CFR 73.21. The applicant should portion mark the text in the response to request for additional information (RAI) to appropriately identify SGI that reveals the specific details of security features incorporated in the APR1400 design. Other security-related or sensitive information should be identified and protected as required.

13.06-29

Regulatory Basis:

Subpart B of 10 CFR 52, § 52.47, requires that information submitted for a design certification 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 52.47(b)(1) requires that the application must contain proposed inspections, tests, analyses, and acceptance criteria. Title 10 CFR 52.48 requires the applications filed will be reviewed for compliance with the standards set out in 10 CFR Part 73.

Technical Report – APR1400-E-A-NR-14002-P-SGI, Section 4.3, "Bullet-Resistant of the CAS, SAS, and Last Access Control Location (Voluntary Element 3)," (Page 9): Provide the design basis for the statement in Section 4.3 that a certain thickness of the reinforced concrete will meet a UL 752 category bullet resistant category stated in this section. Indicate whether the

REQUEST FOR ADDITIONAL INFORMATION 428-8412

construction of walls, floors, or ceiling exceed the minimum thickness for material and construction needed, and how it may provide additional design margin greater than the bullet resistant category stated. Address the following additional information:

- (a) Confirm that the structural construction of the ceiling of the stand-alone buildings and enclosure for the last access control will be constructed of reinforced concrete of the thickness as specified;
- (b) For the Last Access Control Location, describe the design for protection of penetrations or openings into the enclosures, such as HVAC penetrations such as ventilation pathways or openings that provides a pathway through walls or floors;
- (c) Illustrate how windows, if constructed within the bullet-resistant walls or doors, will be designed to achieve bullet-resistance equivalent to the walls, ceilings, or floors that enclose the alarm stations and the Last Access Control Location;
- (d) Clarify whether the building identified as CAS and SAS or the alarm stations (Central and Secondary) within their respective buildings are designated as vital area. Is an exemption to the requirement being sought to designate the building housing the alarm stations as a vital areas instead of the boundaries of the alarm stations within the building housing as vital areas?

Note: The information addressing specific details related to security features which is safeguards information (SGI) must be marked and protected in accordance with 10 CFR 73.21. The applicant should portion mark the text in the response to request for additional information (RAI) to appropriately identify SGI that reveals the specific details of security features incorporated in the APR1400 design. Other security-related or sensitive information should be identified and protected as required.

13.06-30

Regulatory Basis:

Subpart B of 10 CFR 52, § 52.47, requires that information submitted for a design certification 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 52.47(b)(1) requires that the application must contain proposed inspections, tests, analyses, and acceptance criteria. Title 10 CFR 52.48 requires the applications filed will be reviewed for compliance with the standards set out in 10 CFR Part 73.

Technical Report – APR1400-E-A-NR-14002-P, Revision 0, Section 4.3, “Bullet-Resistance of the CAS, SAS, and Last Access Control Location (Voluntary Element 3).” (Page 9): Provide the design requirements and design bases for the Last Access Control Location. Include the following to address the design and design bases:

- (a) Provide plan and sections views showing the location, construction and installation of the LACL enclosure within the Main Access Control Building.

REQUEST FOR ADDITIONAL INFORMATION 428-8412

- (b) Describe the design of security systems and hardware for protecting and providing required security functions performed in the Last Access Control Location.
- (c) Describe the interfaces and controls of security systems and components from the Last Access Control Location and the access authorization and control systems in the Main Access Control Building. Describe the design requirements for protection of openings (i.e., for viewing or any other features for responding to threats) and the configuration of the enclosure to allow for performing the last access control functions.
- (d) Show how the Last Access Control Location provides control functions with respect to the search train and physical barriers within the Main Access Control Building and the PA barriers that prevents by-pass into the protected area.

Note: The information addressing specific details related to security features which is safeguards information (SGI) must be marked and protected in accordance with 10 CFR 73.21. The applicant should portion mark the text in the response to request for additional information (RAI) to appropriately identify SGI that reveals the specific details of security features incorporated in the APR1400 design. Other security-related or sensitive information should be identified and protected as required.

13.06-31

Regulatory Basis:

Subpart B of 10 CFR 52, § 52.47, requires that information submitted for a design certification 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 52.47(b)(1) requires that the application must contain proposed inspections, tests, analyses, and acceptance criteria. Title 10 CFR 52.48 requires the applications filed will be reviewed for compliance with the standards set out in 10 CFR Part 73.

Technical Report – APR1400-E-A-NR-14002-P, Revision 0, Section 4.4, “Single Act Requirement (Voluntary Element 4),” (Pages 9 -10): Based on locations of CAS and SAS, provide the design bases for how the “Single Act Requirement” was met with the quantities of DBT explosives at the minimum safe standoff distances. Address the following:

- (a) Provide locations of the CAS and SAS on the site plan showing adequate separation (described in Section 4.5 and shown in figure of site layout on Page C-1);
- (b) Indicate the minimum distances on the site map, similar to that shown in Appendix C, to show that DBT vehicle-borne explosives at a distance nearly equal between the buildings designated CAS and SAS will not result in the loss of both alarm station functions;
- (c) Provide the results for required minimum safe stand-off distance(s) for the CAS and SAS buildings;
- (d) Confirm that NUREG-6190 was used and how it was applied to evaluate the CAS and SAS buildings to withstand explosive effect at minimum safe stand-off distances; and

REQUEST FOR ADDITIONAL INFORMATION 428-8412

- (e) Specify the minimum stand-off distance(s) for the CAS and SAS that was evaluated and indicate that the distances equally between the CAS and the SAS at the minimum distance for the VBS exceeds or equal to the required minimum safe stand-off distances determined for the alarm stations or structures housing the alarm stations.
- (f) In addition, provide addition detail summarizing how the structural and construction of the buildings of the APR1400 standard design (i.e., Reactor containment building, Auxiliary building including two emergency diesel generator rooms, Turbine generator building, Compound building, Emergency diesel generator building with two emergency diesel generator rooms, Alternate alternating current gas turbine generator building, Essential service water intake structure and ultimate heat sink related structure, Component cooling water heat exchanger building) were credited and evaluated in determining required minimum safe stand-off distances. Specify and demonstrated in the design bases that each of the required minimum safe stand-off distance are bounded for the location of a vehicle barrier system (i.e., identified in TR ARP1400-E-A-MR-14001, Revision 0).

The locations of the alarm stations in the CAS and SAS are evaluated based on the possibility for the DBT to simultaneously affect the performance of security alarm station functions. The protection of the nuclear island and structures from the blast effects of the DBT land- and water-borne explosive threats relies on establishing a bounding minimum safe stand-off distance to ensure that safety of the nuclear power plant. Additional information is needed to establish the design bases for a bounding minimum safe standoff distance identified in the TR ARP1400-E-A-MR-14001.

Note: The information addressing specific details related to security features which is safeguards information (SGI) must be marked and protected in accordance with 10 CFR 73.21. The applicant should portion mark the text in the response to request for additional information (RAI) to appropriately identify SGI that reveals the specific details of security features incorporated in the APR1400 design. Other security-related or sensitive information should be identified and protected as required.

13.06-32

Regulatory Basis:

Subpart B of 10 CFR 52, § 52.47, requires that information submitted for a design certification 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 52.47(b)(1) requires that the application must contain proposed inspections, tests, analyses, and acceptance criteria. Title 10 CFR 52.48 requires the applications filed will be reviewed for compliance with the standards set out in 10 CFR Part 73.

Technical Report - APR1400-E-A-NR-14002-P, Revision 0, Section 4.5, "Alarm Station Equivalency and Redundancy (Voluntary Element 5)," (Pages 10 -11): Provide block diagrams to show how the design and configurations of engineered security SSCs for the alarm stations provide equivalent and redundant alarm system functions with independence, separation, and

REQUEST FOR ADDITIONAL INFORMATION 428-8412

diversity. Include the following additional information for the design and design bases of the alarm stations:

- (a) Describe how the alarm system computers for the primary and secondary alarm station in CAS and SAS buildings are standalone systems, independent of other computer or digital systems, such that the local area network is air gapped or does not interconnect with other LANs, nor can be access externally, and will operate independently to provide intrusion detection and assessment between the primary and secondary alarm stations at CAS and SAS buildings, respectively;
- (b) Describe how the systems describe in the last paragraph of Page 10 will be design with independent and diverse systems that are complementary to one another to provide assurance of intended security functions;
- (c) Provide block diagrams to show all the security sub-systems and components that interfaces with the alarm systems;
- (d) Provide specific section(s) of guidance in document W-A-00450B (GSA-FSS), "Interim Federal Specification: Alarm Systems, Interior, Security, Components for," February 1973 (Reference 10), along with the design descriptions, that will be applied for the designs and configurations and construction or installation of the systems, subsystems, components, for security functions meet the requirements of 10 CFR 73.55.

Additional information are needed to establish sufficient details of the design and design bases for security SSCs that are relied-on to perform alarm station functions.

Note: The information addressing specific details related to security features which is safeguards information (SGI) must be marked and protected in accordance with 10 CFR 73.21. The applicant should portion mark the text in the response to request for additional information (RAI) to appropriately identify SGI that reveals the specific details of security features incorporated in the APR1400 design. Other security-related or sensitive information should be identified and protected as required.

13.06-33

Regulatory Basis:

Subpart B of 10 CFR 52, § 52.47, requires that information submitted for a design certification 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 52.47(b)(1) requires that the application must contain proposed inspections, tests, analyses, and acceptance criteria. Title 10 CFR 52.48 requires the applications filed will be reviewed for compliance with the standards set out in 10 CFR Part 73.

Technical Report - APR1400-E-A-NR-14002-P-SGI, Section 4.6, "Vital Area Physical Barriers not Within the Standard Design Scope (Architectural Features) (Voluntary Element 6)," Section 4.9, "Protection of Penetrations of Openings (Voluntary Element 9)," Section 4.10, "Vital Area Portal Egress Not within the Standard Design Scope (Voluntary Element 10)," and Section 4.11, "Control of Unoccupied Vital Areas Not Within the Standard Design Scope (Voluntary Element

REQUEST FOR ADDITIONAL INFORMATION 428-8412

11).”: Based on the site-layout provided in Appendix C, specify what are the vital areas and barriers that will be addressed by a COL applicant. Illustrate clearly using plant layout (such as figure shown in Appendix C), the vital areas and barriers within the PA that are in the scope of the APR1400 standard design certification and identify the VA and barriers that are not within the scope, and specify what are the vital areas and barriers that will be addressed by a COL applicant. Provide a general description in each of the sections identified as to what are the site-specific vital areas and associated access portals, intrusion detection, locks, access controls, and emergency exits that are not included in the APR1400 standard design certification.

Note: The information addressing specific details related to security features which is safeguards information (SGI) must be marked and protected in accordance with 10 CFR 73.21. The applicant should portion mark the text in the response to request for additional information (RAI) to appropriately identify SGI that reveals the specific details of security features incorporated in the APR1400 design. Other security-related or sensitive information should be identified and protected as required.

13.06-34

Regulatory Basis:

Subpart B of 10 CFR 52, § 52.47, requires that information submitted for a design certification 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 52.47(b)(1) requires that the application must contain proposed inspections, tests, analyses, and acceptance criteria. Title 10 CFR 52.48 requires the applications filed will be reviewed for compliance with the standards set out in 10 CFR Part 73.

Technical Report - APR1400-E-A-NR-14002-P-SGI, Section 4.7, “Confirmation of Access to Vital Equipment Requiring Passage through Two Barriers (Voluntary Element 7),” and Section 4.8, “Separation of VA and PA Barrier (Voluntary Element 8),” (Page 11): Include figure shown in Appendix C, “Perimeter Security Fence General Layout,” to illustrate that the PA barrier, with the designated VA barriers in Appendix A, meets the requirement that access to vital equipment is through passage through two barriers. Identify on the figure the representation of the PA barriers, along with the isolation zone in the PA boundary, that establish the second physical barrier that is separate from the vital area barriers.

Note: The information addressing specific details related to security features which is safeguards information (SGI) must be marked and protected in accordance with 10 CFR 73.21. The applicant should portion mark the text in the response to request for additional information (RAI) to appropriately identify SGI that reveals the specific details of security features incorporated in the APR1400 design. Other security-related or sensitive information should be identified and protected as required.

REQUEST FOR ADDITIONAL INFORMATION 428-8412

13.06-35

Regulatory Basis:

Subpart B of 10 CFR 52, § 52.47, requires that information submitted for a design certification 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 52.47(b)(1) requires that the application must contain proposed inspections, tests, analyses, and acceptance criteria. Title 10 CFR 52.48 requires the applications filed will be reviewed for compliance with the standards set out in 10 CFR Part 73.

Technical Report - APR1400-E-A-NR-14002-P, Revision 0, Section 4.13, Protected Area Barrier Description (Voluntary Element 13) (Page 12, Second to the last paragraph in this section) (Page 12): Provide the following additional information on the how the designs and configurations of physical barriers, intrusion detection and assessment systems and components will provide security functions meeting requirements of 10 CFR 73.55:

- (a) Provide plan and section views for the typical design and configuration of the PA, to show how the physical security SSCs (e.g., intrusion detection systems, assessment systems, minimum dimensions and configurations of physical barriers, location of isolation zone, and other features described in Sections 3 and 4) are integrated to provide security functions meeting requirements of 10 CFR 73.55.
- (b) Specify the design bases for the physical barriers that are installed at the PA, with respect to minimum and maximum delay times based on mechanical or explosive breaching or other means of by-pass for credited delay functions. If physical barriers are not required in the configuration of the PA for delay or cannot be credited for delay in security response (i.e., prior to intrusion detection), indicate that they are not credited for delays.
- (c) Provide illustrations of the how design and configurations of the security SSCs will provide detection and assessment functions for portion of the Main Access Control Building that will be continuous and uninterrupted detection and assessment capabilities at the PA. Indicate whether any delay functions credited for the physical configurations of the Main Access Control Building. Show the design configurations for the interface between the PA and Main Access Control Building that provide detection and assessment functions required at the PA.
- (d) Provide the technical basis for the design criteria stated in Section 4.13 that “[b]oundary building roofs and/or opening in building walls that are [intentionally not stated] ft. or less from ground level will be protected against the possibility of exploitation to gain undetected or unauthorized access into the PA.” Specifically describe how the stated design criteria provide detection and assessment of unauthorized access into PA and how the height (beyond that stated above ground in Section 4.13) is justified as “protected against the possibility of exploitation.” Justify the assumption that the stated height above the ground is not scalable (i.e., based on reasonable possible methods or approaches, including the use of a ladder of greater height or using climbing equipment readily available and accessible) or explosively breached (i.e., not exploitable).

REQUEST FOR ADDITIONAL INFORMATION 428-8412

The design descriptions in this section and other sections state the design criteria or requirements, but does not describe how the design and/or configuration of physical security systems, features, and hardware will meet the design requirements or address the redundancy, separations, or diversity of security systems and structures to achieve intended security functions. Also the design basis or assumption that above a height of physical barrier stated in Section 4.13 is not exploitable is unreasonable and design descriptions did not address provisions for continuous detection and assessment at the PA boundary that interfaces with other structures.

Note: The information addressing specific details related to security features which is safeguards information (SGI) must be marked and protected in accordance with 10 CFR 73.21. The applicant should portion mark the text in the response to request for additional information (RAI) to appropriately identify SGI that reveals the specific details of security features incorporated in the APR1400 design. Other security-related or sensitive information should be identified and protected as required.

13.06-36

Regulatory Basis:

Subpart B of 10 CFR 52, § 52.47, requires that information submitted for a design certification 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 52.47(b)(1) requires that the application must contain proposed inspections, tests, analyses, and acceptance criteria. Title 10 CFR 52.48 requires the applications filed will be reviewed for compliance with the standards set out in 10 CFR Part 73.

Technical Report - APR1400-E-A-NR-14002-P, Revision 0, Section 4.14, "Protection of Penetrations through the PA (Voluntary Element 14)," and Technical Report - APR1400-E-A-NR-14002-P-SGI, Section 4.15, Protection of Unattended Openings (Voluntary Element 15)." (Page 12): Provide the following additional information for the design and design bases for security SSCs protecting penetrations and unattended openings:

- (a) Describe, or incorporate previously discussed designs for protecting penetrations, how designs of security SSCs will protect penetrations through the PA.
- (b) Illustrate, in plan and section views and figures, how the design and configurations of security SSCs will protect penetrations at the PA (e.g., emergency rapid exits of similar construction of the PA barriers, piping or utilities chases below ground or utilities above the PA barriers, etc.);
- (c) Provide specific section(s) of guidance in RG 5.12, along with specific descriptions, that will be applied for the design, and configurations, construction, or installation of locking devices; and
- (d) Describe how physical barriers are designed to protect openings or penetrations (including unattended openings) and how security SSCs are integrated and designed for available and reliable to perform intended security functions that prevent, detect, assessment, and monitor penetration of the PA.

REQUEST FOR ADDITIONAL INFORMATION 428-8412

Design requirements or criteria are stated in various sections of the TR APR1400-E-A-NR-14002-P, but additional information is needed with respect to how the designs and its configurations will provide all required protection of penetrations of a physical barrier credited at the PA for meeting requirements of 10 CFR 73.55. The reference to RG 5.12 does not specify what is applicable to the design and the RG 5.12, in whole or parts, is not identified as being incorporated by reference for the designs of locking devices for the PA.

Note: The information addressing specific details related to security features which is safeguards information (SGI) must be marked and protected in accordance with 10 CFR 73.21. The applicant should portion mark the text in the response to request for additional information (RAI) to appropriately identify SGI that reveals the specific details of security features incorporated in the APR1400 design. Other security-related or sensitive information should be identified and protected as required.

13.06-37

Regulatory Basis:

Subpart B of 10 CFR 52, § 52.47, requires that information submitted for a design certification 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 52.47(b)(1) requires that the application must contain proposed inspections, tests, analyses, and acceptance criteria. Title 10 CFR 52.48 requires the applications filed will be reviewed for compliance with the standards set out in 10 CFR Part 73.

Technical Report - APR1400-E-A-NR-14002-P-SGI, Section 4.16, "Isolation Zone (Voluntary Element 16)," (Page 13): Provide the plan and section views showing minimum dimensions for the design configurations of the isolation zone (i.e., supplementing the Appendix C, Perimeter Security Fence General Layout), and the design configuration integrating the isolation zone with configuration of the PA boundary and security SSCs in the perimeter intrusion detection/assessment system to provide intended monitoring, surveillance, and assessment functions.

The information provided must be sufficient detailed to describe the design and design bases for security systems and features of the APR1400 standard design. Additional information is needed to establish details for the design and design bases of security systems, features, or hardware of the APR1400 standard design and how they are relied-on to perform security functions.

Note: The information addressing specific details related to security features which is safeguards information (SGI) must be marked and protected in accordance with 10 CFR 73.21. The applicant should portion mark the text in the response to request for additional information (RAI) to appropriately identify SGI that reveals the specific details of security features incorporated in the APR1400 design. Other security-related or sensitive information should be identified and protected as required.

REQUEST FOR ADDITIONAL INFORMATION 428-8412

13.06-38

Regulatory Basis:

Subpart B of 10 CFR 52, § 52.47, requires that information submitted for a design certification 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 52.47(b)(1) requires that the application must contain proposed inspections, tests, analyses, and acceptance criteria. Title 10 CFR 52.48 requires the applications filed will be reviewed for compliance with the standards set out in 10 CFR Part 73.

Technical Report - APR1400-E-A-NR-14002-P, Section 4.17, "Intrusion Detection and Assessment Systems (Voluntary Element 17)," and Section 4.18, "Backup Power for Intrusion Detection and Assessment Systems," (Page 13): Described how security SSCs will be design to provide intrusion and detection assessment as stated in this section. Provide the following for the design of the security SSCs for performing intended security functions:

- (a) Provide plan and section views showing the design of detection and assessment systems for the coverage of exterior plant areas and design and configuration for detection and assessment internal to the buildings and structures;
- (b) Provide block-diagram showing the IDS and assessment systems design and configuration of subsystems, components and devices for providing intrusion detection and assessment functions, design interfaces with the alarm stations, primary and secondary power supplies, uninterruptable power supply, and lighting for continuous detection and assessment function;
- (c) Address how power supplies and communication signals will be designed for reliability and availability of security functions;
- (d) Provide coverage maps of IDS and assessment systems devices of plant areas (interior and exterior) for the design for redundancy and overlapping detection and assessment capabilities; and
- (e) Provide design descriptions and figures for the typical designs of assessment systems and how they are configured with the design of security lighting to provide assurance for assessment.

The information provided must be sufficient detailed to describe the design and design bases for security systems and features of the APR1400 standard design. Additional information is needed to establish details for the design and design bases of security systems, features, or hardware for the APR1400 standard design and how they are relied-on to perform security functions.

Note: The information addressing specific details related to security features which is safeguards information (SGI) must be marked and protected in accordance with 10 CFR 73.21. The applicant should portion mark the text in the response to request for additional information (RAI) to appropriately identify SGI that reveals the specific details of security features incorporated in the APR1400 design. Other security-related or sensitive information should be identified and protected as required.

REQUEST FOR ADDITIONAL INFORMATION 428-8412

13.06-39

Regulatory Basis:

Subpart B of 10 CFR 52, § 52.47, requires that information submitted for a design certification 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 52.47(b)(1) requires that the application must contain proposed inspections, tests, analyses, and acceptance criteria. Title 10 CFR 52.48 requires the applications filed will be reviewed for compliance with the standards set out in 10 CFR Part 73.

Technical Report - APR1400-E-A-NR-14002-P-SGI, Section 4.19, "Descriptions of Security Fighting Positions (Voluntary Element 19)," (Pages 13-14): Provide design and design bases for security fighting positions integral and within the buildings and plant areas that are within the scope of the ARP1400 standard design certification:

- (a) Describe how fixed bullet-resistance enclosures and protected fighting positions, which are built into or integral to the structure of buildings, will be designed to achieve the intended functions to "limit the exposure of security personnel to attack." Identify whether the security fighting positions are designed to withstand blasts. Indicate whether the specification for minimum design requirements for bullet-resistance discussed in Section 3 for MCR, CAS, or SAS apply to security fighting positions and how that will be achieved by design;
- (b) Provide plan and section views for the configurations of fighting positions showing how the intended functions can be achieved (blast and/or bullet resistance, firing ports, material construction, fully or partially enclosed to protect of security personnel to attack, person or only body of mass, blast protection, environmental controls and protection, lighting, communications, etc.).
- (c) Based on locations of fixed and deployable fighting positions, provide lines of sight, overlapping fields of fire maps for plant exterior and interior and defense-in-depth by redundancies of capabilities for neutralization functions. Include the lines of sight from the fighting positions on the roof or walls of buildings to the PA boundary, delay fences, vehicle barrier system, building perimeters, access portals, exits, and other plant areas, accounting for obstructions between the firing ports and listed plant areas. Describe how firing ports are designed and configured to provide lines of sight for acquiring target and performing neutralization functions.

Also, address the following for the designs of security SSCs:

- (d) Describe whether the weight of the hardened fighting positions will required special considerations for additional structural load to the design of building floors or roofs, and walls at locations of security fighting positions. Describe how the design of fighting positions account for necessary precautions for possible effect on safety-related systems and the performance of their intended functions (i.e., are not located such that safety systems and functions may be collateral damaged in a security event).
- (e) Incorporate the design information of locations of security fighting positions shown in TR APR1400-E-A-NR-14001-P-SGI into TR APR1400-E-A-NR-14002-P. Specifically,

REQUEST FOR ADDITIONAL INFORMATION 428-8412

information found in TR APR1400-E-A-NR-14002-P-SGI, Section 5.2.2, “APR1400 Security Force Armed Response Team and Fields of Fire,” (from last paragraph on Page 19 to last paragraph of Section 5.2.2 on Page 22), External Armed Response Positions (Pages 27), and Internal Armed Response Positions (Pages 28-31) showing specific locations for security fighting positions (fixed and deployable) that are integral to the APR1400 standard design.

- (f) Delete reference to RG 5.76 (Reference 8), which was not included in Commission authorized SGI to KHNP. RG 5.76 contains SGI and was not provided by the Commission to the applicant. The descriptions of how security SSCs will be designed, constructed, or installed should be described without reference to RG 5.76.

The information provided must be sufficient detailed to describe the designs and design bases for security systems and features of the APR1400 standard design. Additional information is needed to establish details for the designs and design bases of security systems, features, or hardware for the APR1400 standard design and how they are relied-on to perform security functions.

Note: The information addressing specific details related to security features which is safeguards information (SGI) must be marked and protected in accordance with 10 CFR 73.21. The applicant should portion mark the text in the response to request for additional information (RAI) to appropriately identify SGI that reveals the specific details of security features incorporated in the APR1400 design. Other security-related or sensitive information should be identified and protected as required.

13.06-40

Regulatory Basis:

Subpart B of 10 CFR 52, § 52.47, requires that information submitted for a design certification 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 52.47(b)(1) requires that the application must contain proposed inspections, tests, analyses, and acceptance criteria. Title 10 CFR 52.48 requires the applications filed will be reviewed for compliance with the standards set out in 10 CFR Part 73.

Technical Report - APR1400-E-A-NR-14002-P-SGI, Section 5, “Other Information to Addresses Known/Potential RAI (Page 15- 16): The information in Section 5 describes designs of systems applicable to descriptions of security SSCs in Sections 3 and 4. Incorporate the descriptions of design and design bases for security SSCs in Section 5 into appropriate Sections 3 and 4 that describe the designs of security SSCs (e.g., access control system, UPS, secondary power supply, alarm controls, tamper device, line supervisions, security communications, etc.). Revise Sections 3 and 4 accordingly.

Note: The information addressing specific details related to security features which is safeguards information (SGI) must be marked and protected in accordance with 10 CFR 73.21. The applicant should portion mark the text in the response to request for additional information (RAI) to appropriately identify SGI that reveals the specific details

REQUEST FOR ADDITIONAL INFORMATION 428-8412

of security features incorporated in the APR1400 design. Other security-related or sensitive information should be identified and protected as required.

13.06-41

Regulatory Basis:

Subpart B of 10 CFR 52, § 52.47, requires that information submitted for a design certification 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 52.47(b)(1) requires that the application must contain proposed inspections, tests, analyses, and acceptance criteria. Title 10 CFR 52.48 requires the applications filed will be reviewed for compliance with the standards set out in 10 CFR Part 73.

Technical Report APR1400-E-A-NR-14001-P-SGI, Revision 0: Incorporate the design descriptions of SSCs and related design basis assumptions found in TR ARP1400-E-A-NR-14001-P-SGI into the appropriate sections of TR APR1400-E-A-NR-14002, which incorporated by reference for standard design certification. Incorporate and provide the following additional information of SSCs for the APR1400 standard design certification:

- (a) Incorporate information found in Section 5.2.2, APR1400 Security Armed Response Team and Field of Fire (Pages 19 – 22), which describes the security fighting positions fixed and integral to structures) that are relied-on to protect security responders and facilitate effectiveness of neutralization functions;
- (b) Incorporate figures shown on Page 26 through 59, that include Site Plot Layout (Page 26), external armed responder positions (Page 27), internal armed response positions (Pages 28 – 31), key door locations (Pages 32-49), and other security systems, features and hardware that are relied-on for security responses for scenarios analyzed (Pages 50-59).
- (c) Incorporated selected information shown on Table (Section 2.1, Pages 71-72) that address the design basis assumptions for actions/tasks specific to minimum times for mechanical and explosive breaching of physical barriers.
- (d) Provide the locations of security fighting positions, internal and external of buildings and structures, to include graphical presentation (i.e., map) of overlapping fields of fire on a site plan accounting buildings and structures that allows or interferes with lines of sights where fight positions will be constructed or installed for security responses external to the buildings and structures.
- (e) Provide graphical representations of interior overlapping fields of fire for security fighting positions (fixed or deployable) of systems and hardware designed to provide protection and security response for neutralizing adversary.
- (f) Provide locations of internal and external security fighting positions and associated fields of fire where security fighting positions (fixed and deployable) that are not described on Pages 26-59 for the designs, construction and installations of security systems, features, and hardware (fighting positions, delay barriers, grenade netting, etc.) to facilitate

REQUEST FOR ADDITIONAL INFORMATION 428-8412

security responses to neutralize adversary (e.g., buildings shown on Page 2 and elevations not addressed, elevations 55'-0", 120'-0", 174'-0", 195'-0", 215'-0" of Auxiliary Building, all elevations of the Compound Building, all elevations of the Turbine Building, other buildings shown on Page 27).

The information provided must be sufficiently detailed to describe the designs and design bases for security systems and features of the APR1400 standard design. Additional information are needed to establish details for designs and design bases for security systems, features, or hardware that are relied-on to perform security functions for the certification of the APR1400 standard design. The information describing the designs and configurations of security SSCs in Technical Report APR1400-E-A-NR-14001-P-SGI, Revision 0, in part, address additional information that is being requested to address design details for APR1400 standard design certification.

Note: The information addressing specific details related to security features which is safeguards information (SGI) must be marked and protected in accordance with 10 CFR 73.21. The applicant should portion mark the text in the response to request for additional information (RAI) to appropriately identify SGI that reveals the specific details of security features incorporated in the APR1400 design. Other security-related or sensitive information should be identified and protected as required.

13.06-42

Regulatory Basis:

Subpart B of 10 CFR 52, § 52.47, requires that information submitted for a design certification 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 52.47(b)(1) requires that the application must contain proposed inspections, tests, analyses, and acceptance criteria. Title 10 CFR 52.48 requires the applications filed will be reviewed for compliance with the standards set out in 10 CFR Part 73.

Address the following:

- (a) Tier 2, FSAR Section 1.9, "Conformance with Regulatory Criteria, Table 1.9-2 (Page 1.9-28), Section 13.6.8, "References," (Page 13.6-3), Technical Report - APR1400-E-A-NR-14002-P, Rev 0, Abstract and References, (Page iii and Page 17), and TR APR1400-E-A-NR-14002-P-SGI, Rev 0 (Page 17): References should be revised to include SRP 13.6.2 Revision 2, June 2015, which superseded SRP 13.6.2 Revision 1 dated October, 2010. Staff understands the applicant's intention to use revision 1 based on other guidance regarding which revision of applicable guidance an applicant may use. However, staff recommends following revision 2 as discussed below.

The applicant, in TR APR1400-E-A-MR-14001-P-SGI, Revision 0, provides a cross reference between Revision 1 and Revision 2 of NUREG-0800 SRP Section 13.6.2, addressing conformance to guidance in both versions of SRP 13.6.2. Since the applicant addressed guidance in both versions, the latest revision of SRP 13.6.2 should also be referenced.

REQUEST FOR ADDITIONAL INFORMATION 428-8412

In addition, the Revision 2 to the SRP 13.6.2 updates Revision 1, dated October 2010, to clarify the scope of a design certification review and identify those regulatory requirements applicable in such a review and incorporated changes among others that specifically clarified the scope for a design certification review and level of details for designs of physical security systems, removed from the guidance to the staff the review of administrative controls, programs, and management systems, which are addressed in the review of a COL, eliminated the term “voluntary,” and removed guidance related to target sets and other regulatory requirements that do not apply to the design of physical security systems. As stated in revision 2, staff’s review will be limited and will not include voluntary elements. Staff believes that this approach is better for the applicant and for the staff.

Information provided in the DCD (Tier 1 and Tier 2) and the technical report that are not specific to designs or design bases for security SSCs identified in the scope of the APR1400 standard design certification are not reviewed for Commission’s certification. The TR APR1400-E-A-NR-14001-P (i.e., KHNP’s TR that is not incorporated by references) provides “Cross-References Information,” which shows the considerations of guidance found in SRP 13.6.2, Revision 2.

- (b) FSAR Tier 2, Section 1.8.1, “COL Information Items,” FSAR Tier 2, Table 1.8-1, “Combined License Information Items,” COL Information Item 14.3(3) (Page 1.8-29): Revise the proposed COL Information Item No. 14.3(3) to indicate that the COL applicant is to provide the proposed ITAAC for the site-specific facility’s physical security hardware that are identified in Tier 2 FSAR Section 14.3.2.12.

The COL information Item only applies to the site-specific physical security ITAACs for systems and hardware that are not within the scope of the APR1400 standard plant.

- (c) FSAR Tier 2, Section 13.6, “Physical Security;” Section 13.6.1, “Physical Security – Combined License;” Section 13.6.3, “Physical Security – Early Site Permit;” Section 13.6.4, “Access Authorization – Operational Program;” (Pages 13.6-1 and 13.6-2): Delete sub-sections that discuss COL, ESP, and security programs (Access Authorization and Cyber Security Plan) in Section 13.6 of the Tier 2 FSAR for the design certification.

The descriptions addressing COL and ESP applications and operational programs are not applicable to the design certification of the APR1400 standard plant under Subpart B of 10 CFR Part 52. The requirements of Subpart B of 10 CFR Part 52 do not require that the DCD address Subparts A or C of 10 CFR Part 52 for an early site permit and COL applications, respectively, or required descriptions for complying with 10 CFR Part 73 requirements for security programs (Access Authorization or Cyber Security programs).

- (d) Technical Report - APR1400-E-A-NR-14002-P, Rev 0, Section 2, “Scope” (Page 2):

- (1) Delete “[t]his information should be superseded by other Section of the DCD, where a contradiction exists.” in Section 2, which states “[a]ll architectural design information (walls/ceiling/floor thickness) in this document is for reference only, and was included to verify concurrence with requirements from the SRP. **This information should be superseded by other Section of the DCD, where a contradiction exists.**”

REQUEST FOR ADDITIONAL INFORMATION 428-8412

- (2) Provide clarifying statements to indicate that figures show locations of physical barriers credited to provide security functions and the specifics of design and performance requirements, including dimensions and material constructions, establish the design bases for performing security functions are not superseded by information found in other sections of the DCD, when there is a contradiction. Include appropriate text to indicate that where a contradiction exists, both the design bases for engineered systems and features relied-on for security functions identified and described in the TR and the design bases for safety SSCs must be met, and neither descriptions for designs of safety or security SSCs may supersede each other.

The statement identified in Section 2, indicates that the design bases for certification and finality of the design of security systems and features can be superseded by other Sections of the DCD where there are “contradictions.” This implies that the technical report contains governing architectural information with respect to the representation of design and configurations of security SSCs for certification as standard design can be changed and does not provide finality of design. Example: A thickness and material construction of a wall is specified in this section to provide bullet-resistance may be superseded by a thickness or construction of material in other section of the DCD that is less than or different material construction from the design requirements and basis for security SSCs needed for meeting security function. This is not an acceptable assumption with respect to the representation of design and configurations of security SSCs for certification as standard design. The Commission’s certification of the APR1400 standard plant design is, in part, based on the information in the TR APR1400-E-A-NR-14002-P that is incorporated by reference, and the information may not be simply superseded by other sections of the DCD where a conflict exists.

- (e) Technical Report - APR1400-E-A-NR-14002-P, Rev 0, Section 3, “Design Features of Physical Security Systems within the Nuclear Island and Structures,” (Page 3): Indicate that the scope of security for the APR1400 standard design certification includes the stand-alone buildings referenced in Section 3.1, paragraphs 2 and 3 on Page 3 of TR APR1400-E-A-NR-14002-P, which are not described in Tier 2 FSAR Chapter 1 for the APR1400 standard plant. Also, Identify any additional buildings and plant areas (e.g., PA, isolations zone) where the design of security SSCs are describe for APR1400 standard design certification.

Additional information is needed to establish clearly what is in the scope for security designs for the APR1400 standard design certification that is requested for certification. The applicant describes security systems or features (e.g., CAS, SAS, bullet-resistance, single acts, alarm station, vital area, barriers, etc.) in both Sections 3 and 4 of TR, using the term “voluntary physical security element” in Section 4. The term “voluntary” implies that security systems, structures, or components are not needed, therefore leads to a lack of clarity of whether they are or they are not included in the scope for certifying the APR1400 standard design. Guidance for staff was revised in NUREG-0800, SRP 13.6.2, Revision 2, to ensure that the applicant provides designs of security SSCs, at a minimum include all security SSCs that are within the buildings and structures for the scope of the APR1400 standard plant. The applicant may include additional security SSCs other than those listed in SRP 13.6.2, Table 13.6.2-1, provided that they are clearly identified as within the scope for certification accordance with 10 CFR 52, Subpart B.

REQUEST FOR ADDITIONAL INFORMATION 428-8412

- (f) Technical Report - APR1400-E-A-MR-14002- P, Rev. 0, Section 3.4, Vital Area Barriers (Architectural Features) (Element 4) (Page 5): Resolve an apparent conflict for the statement in this section that “the secondary power supply room for alarm annunciation equipment and the non-portable communication equipment are located in the CAS and [as indicated] building, respectively” and the descriptions for locations of secondary power supply in Section 3.1 and shown in Appendix A (e.g., Page A-10). Confirm whether the specific location on figure on Page A-10 as Communication Power Supply Room, in Appendix A to Technical Report - APR1400-E-A-NR-14002-P, is another power supply for non-portable communications different from that of the CAS. Resolution is needed for what appears to be contradicting information that shows one source of secondary power supply, but two different locations.

- (g) Technical Report - APR1400-E-A-NR-14002- P, Rev. 0, Section 3.8, “ITAAC (Element 8)” (Page 8): Delete this section.

The TR incorporated by reference does not provide any new or additional information on physical security ITAAC that is provided in Tier 1 and Tier 2 of the DCD and reference is not needed. Physical Security ITAAC is addressed in Tier 1 Section 2.12 and Tier 2, Section 14.3.12 and does not need to be reiterated in a TR intended to provide the detail designs and design bases for security SSCs. RAI No. 8176, Question No. 14.03.12-27704 requested information related to physical security ITAAC, descriptions of processes for performing and assuring ITA necessary for verifying security systems and hardware are installed and constructed as intended by design and will meet their intended security functions.

- (h) Technical Report - APR1400-E-A-NR-14002-P-SGI, Section 4.20, “Target Sets (Voluntary Element 20)” (Page 14): Delete this section, as target sets are not included in the scope for standard design certification.

Target sets, what must be protected for radiological sabotage, are addressed in a COL application. The certification of standard design only addresses design of engineered security systems, features, and hardware.

- (i) Technical Report - APR1400-E-A-NR-14002-P-SGI, Section 4.21, “ITAAC Not within the Standard Design Scope (Voluntary Element 21),” (Page 14): Delete this section.

Physical Security ITAAC, which is address in Tire 1 Section 2.12 and Tier 2, Section 14.3.12. The TR incorporated by references does not provide any new or additional information on physical security ITAAC that is not already found in Tier 1 and Tier 2 of the DCD and a reference is not needed.

- (j) Technical Report - APR1400-E-A-NR-14002-P-SGI, Section 6, “References” (Page 17): Delete the Reference No. 5, “NUREG-1178, “Vital Area Identification for U.S. Nuclear Regulatory Commission Nuclear Power Reactor Licensees and New Reactor Applicants,” Sandia National Laboratories, September 2008,” Reference No. 8, RG 5.76, “Physical Protection Programs at Nuclear Power Reactor,” U.S. Nuclear Regulatory Commission, July 2007. Update the reference list to include NUREG-0800, SRP 13.6.2, Revision 2 dated June 2015.

REQUEST FOR ADDITIONAL INFORMATION 428-8412

The identification of vital equipment is in accordance with the definition of 10 CFR 73.2, where compliance to regulation is required and the guidance in the reference (NUREG-1178 or SAND2008-5644) are not substitute to the regulation. Section 5.1.2 of Regulatory Guide 5.81, specifically states, “[t]he technical recommendations in NUREG 1178, as the assumptions in this document do not consider all equipment that should be identified as vital in accordance with in 10 CFR 73.2.” RG 5.76 contains SGI and was not provided by the Commission to the applicant. The descriptions of how security SSCs will be designed, constructed, or installed should be described without a reference to RG 5.76.

The applicant, in TR APR1400-E-A-MR-14001-P-SGI, Revision 0, provides a cross reference between Revision 1 and Revision 2 of NUREG-0800 SRP Section 13.6.2, addressing conformance to guidance in both versions of SRP 13.6.2. Since the applicant addressed guidance in both versions, the latest revision of SRP 13.6.2 should also be referenced.

Note: The information addressing specific details related to security features which is safeguards information (SGI) must be marked and protected in accordance with 10 CFR 73.21. The applicant should portion mark the text in the response to request for additional information (RAI) to appropriately identify SGI that reveals the specific details of security features incorporated in the APR1400 design. Other security-related or sensitive information should be identified and protected as required.