



Westinghouse Electric Company
Nuclear Power Plants
P.O. Box 355
Pittsburgh, Pennsylvania 15230-0355
USA

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

Direct tel: 412-374-6206
Direct fax: 724-940-8505
e-mail: sisk1rb@westinghouse.com

Your ref: Docket No. 52-006
Our ref: DCP_NRC_002719

December 16, 2009

Subject: AP1000 Response to Request for Additional Information (SRP 14)

Westinghouse is submitting a response to the NRC request for additional information (RAI) on SRP Section 14. This RAI response is submitted in support of the AP1000 Design Certification Amendment Application (Docket No. 52-006). The information included in this response is generic and is expected to apply to all COL applications referencing the AP1000 Design Certification and the AP1000 Design Certification Amendment Application.

Enclosure 1 provides the response for the following RAI(s):

RAI-SRP 14.3.12-NSIR-07 R1

Questions or requests for additional information related to the content and preparation of this response should be directed to Westinghouse. Please send copies of such questions or requests to the prospective applicants for combined licenses referencing the AP1000 Design Certification. A representative for each applicant is included on the cc: list of this letter.

Very truly yours,

A handwritten signature in black ink, appearing to read 'Robert Sisk', written over a white background.

Robert Sisk, Manager
Licensing and Customer Interface
Regulatory Affairs and Standardization

/Enclosure

1. Response to Request for Additional Information on SRP Section 14

*DDG 3
NRD*

cc: D. Jaffe - U.S. NRC 1E
E. McKenna - U.S. NRC 1E
P. Kallen - U.S. NRC 1E
T. Spink - TVA 1E
P. Hastings - Duke Power 1E
R. Kitchen - Progress Energy 1E
A. Monroe - SCANA 1E
P. Jacobs - Florida Power & Light 1E
C. Pierce - Southern Company 1E
E. Schmiech - Westinghouse 1E
G. Zinke - NuStart/Entergy 1E
R. Grumbir - NuStart 1E
J. DeBlasio - Westinghouse 1E

ENCLOSURE 1

Response to Request for Additional Information on SRP Section 14

AP1000 TECHNICAL REPORT REVIEW

Response to Request For Additional Information (RAI)

RAI Response Number: RAI-SRP 14.3.12-NSIR-07
Revision: 1

Question:

(U) The AP1000 Westinghouse physical security hardware ITAAC addressed 10 CFR 73.55 prior to May 26, 2009. May 26, 2009, Part 73, "Power Reactor Security Requirements" Final Rule became effective for all designs that were not certified. Please submit the AP1000 ITAAC that addresses the Part 73 Power Reactor Security Requirements Final Rule.

(U) Regulatory Basis: 10 CFR 52.47(b)(1) requires a DC application to contain the proposed inspections, tests, analyses, and acceptance criteria (ITAAC) that are necessary and sufficient to provide reasonable assurance that, if the inspections, tests, and analyses are performed and the acceptance criteria are met, a plant that incorporates the design certification is built and will operate in conformity with the design certification.

Westinghouse Response: (Revision 0)

The AP1000 Security ITAACs have been revised since the submittal of Revision 17 of the DCD based on RAIs. The latest AP1000 security ITAACs were submitted to the Staff in RAI-SRP-14.3.12-NSIR-06 (Reference 1). Westinghouse understands that additional adjustments in the security ITAACs are necessary based on industry interaction with the Staff and the revised 10 CFR 73.55.

The markup of the AP1000 security ITAACs is provided below in the DCD Markup section. The latest security ITAACs as submitted in Reference 1 are used as the baseline for any new revisions.

Changes, if necessary, to ITAACs associated with draft SRP 14.3.12 ITAACs number 2, 3, 4, 9, and the protected area portion of number 15 will be addressed by the COL applicant. The ITAACs corresponding to these items are contained in the COL application.

No corresponding ITAAC has been provided for SRP 14.3.12 ITAAC number 11(d). The information contained in SRP ITAAC number 11(d) is redundant to existing ITAACs. AP1000 security ITAAC numbers 1, 4, 5(a), 5(b), 5(c), 13, and 15(b) demonstrate that the central and secondary alarm stations are constructed, located, protected, and equipped to the standards for the central alarm station.

AP1000 TECHNICAL REPORT REVIEW

Response to Request For Additional Information (RAI)

Westinghouse Additional Response: (Revision 1)

Based on a closed meeting on November 24, 2009 between Westinghouse and the NRC, Westinghouse is revising the AP1000 security ITAACs in Section 2.6.9 of the DCD to align with the available SRP guidance as shown below.

- Westinghouse security ITAAC number 1 is being revised to specify the minimum level of bullet resistance for the main control room, central alarm station, and secondary alarm station. This change also affects Section 3.3 and Table 3.3-6 of the DCD as shown.
- AP1000 security ITAAC number 5(a) is being revised to indicate that video assessment information is *displayed* concurrently in the central and secondary alarm stations. Additional text has also been added to ITAAC number 5(a) to address video image recording with playback capability.
- AP1000 security ITAAC number 7(b) is being revised to indicate that access to vital equipment requires passage through the vital area barrier. The second barrier that protects the vital equipment is the protected area barrier, and the protected area barrier is included in the COL applicant's scope. Therefore, it is inappropriate to include the second barrier as part of the ITAACs for design certification.
- AP1000 security ITAAC number 9 is being revised to remove reference to the protected area barrier since the design of the protected area barrier is included in the COL applicant's scope.
- AP1000 security ITAAC number 13 is being revised to align with the available guidance in the SRP. This includes the addition of ITAAC 13(c) and the modification of ITAAC 13(a) to include communication with the main control room.

Additionally, the COL action item in Section 13.6 of the DCD has been expanded to specifically note that applicant should address site specific security ITAACs.

References

1. RAI-SRP14.3.14-NSIR-06 R1, "AP1000 Response to Request for Additional Information (SRP 14)", DCP/NRC2506, June 4, 2009

AP1000 TECHNICAL REPORT REVIEW

Response to Request For Additional Information (RAI)

Design Control Document (DCD) Revision: (Revision 0 in black, Revision 1 in red)

2.6.9 Plant Security System

Design Description

The physical security system provides physical features to detect, delay, assist response to, and defend against the design basis threat (DBT) for radiological sabotage. The physical security system consists of physical barriers and an intrusion detection system. The details of the physical security system are categorized as Safeguards Information. The physical security system provides protection for vital equipment and plant personnel.

1. The external walls, doors, ceiling, and floors in the main control room, ~~and~~ the central alarm station, and the secondary alarm station are bullet-resistant to at least Underwriters Laboratory Ballistic Standard 752, level 4.
2. Not used
3. Secondary security power supply system for alarm annunciator equipment and non-portable communications equipment is located within a vital area.
4. Vital areas are locked and alarmed with active intrusion detection systems that annunciate in the central and secondary alarm stations upon intrusion into a vital area.
5.
 - a) Security alarm annunciation and video assessment information is displayed concurrently ~~occurs in~~ the central alarm station and the secondary alarm station, and the video image recording with real time playback capability can provide assessment of activities before and after each alarm annunciation within the perimeter barrier. ~~in at least one other continuously manned station not necessarily onsite.~~
 - b) The central and secondary alarm stations are located inside the protected area, and the interior of each alarm station is not visible from the perimeter of the protected area.
 - c) The central and secondary alarm stations are designed and equipped such that, in the event of a single act, in accordance with the design basis threat of radiological sabotage, the design enables the survivability of equipment needed to maintain the functional capability of either alarm station to detect and assess alarms and communicate with onsite and offsite response personnel.
6. The vehicle barrier system is installed and located at the necessary stand-off distance to protect against the DBT vehicle bombs.
7.
 - a) Vital equipment is located only within a vital area.
 - b) Access to vital equipment requires passage through the vital area barrier ~~at least two physical barriers.~~

AP1000 TECHNICAL REPORT REVIEW

Response to Request For Additional Information (RAI)

8. Isolation zones and exterior areas within the protected area are provided with illumination to permit observation of abnormal presence or activity of persons or vehicles.
9. Emergency exits through the ~~protected area perimeter and the vital area boundaries are~~ locked, and alarmed and emergency exits through the protected area perimeter and vital area boundaries are equipped with a crash bar to allow for emergency egress.
10. Not used
11. Not used
12. Not used
13.
 - a) The central and secondary alarm stations have conventional (landline) telephone service with the main control room and other communication capabilities with local law enforcement authorities.
 - b) The central and secondary alarm stations are capable of continuous communications with security personnel.
 - c) Non-portable communication equipment in the central and secondary alarm stations remain operable from an independent power source in the event of loss of normal power.
14. Not used
15.
 - a) Security alarm devices including transmission lines to annunciators are tamper indicating and self-checking (e.g., an automatic indication is provided when failure of the alarm system or a component occurs, or when on standby power). Alarm annunciation shall indicate the type of alarm (e.g., intrusion alarms and emergency exit alarm) and location.
 - b) Intrusion detection and assessment systems concurrently provide visual displays and audible annunciation of alarms in the central and secondary alarm stations.
16. Equipment exists to record onsite security alarm annunciation, including the location of the alarm, false alarm, alarm check, and tamper indication; and the type of alarm, location, alarm circuit, date, and time.

Inspections, Tests, Analyses, and Acceptance Criteria

Table 2.6.9-1 specifies the inspections, tests, analyses, and associated acceptance criteria for the physical security system.

AP1000 TECHNICAL REPORT REVIEW

Response to Request For Additional Information (RAI)

Table 2.6.9-1 Inspections, Tests, Analyses, and Acceptance Criteria		
Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
1. The external walls, doors, ceiling, and floors in the main control room, the central alarm station, and the <u>secondary alarm station</u> are bullet-resistant <u>to at least Underwriters Laboratory Ballistic Standard 752, level 4.</u>	See Tier 1 Material, Table 3.3-6, item 14.	See Tier 1 Material, Table 3.3-6, item 14.
2. Not used		
3. Secondary security power supply system for alarm annunciator equipment and non-portable communications equipment is located within the vital area.	See Tier 1 Material, Table 3.3-6, item 16.	See Tier 1 Material, Table 3.3-6, item 6.
4. Vital areas are locked and alarmed with active intrusion detection systems that annunciate in the central and secondary alarm stations upon intrusion into a vital area.	See Tier 1 Material, Table 3.3-6, item 17.	See Tier 1 Material, Table 3.3-6, item 17.
5. a) Security alarm annunciation <u>and video assessment information is displayed concurrently</u> occurs in the central alarm station and <u>the secondary alarm station, and the video image recording with real time playback capability can provide assessment of activities before and after alarm annunciation within the perimeter area barrier, in</u> at least one other continuously manned station not necessarily onsite.	Test, inspection, or a combination of test and inspections of the installed systems will be performed to ensure that security alarms annunciate in the central alarm station and in at least one other continuously manned station.	Security <u>alarm annunciation and video assessment information is displayed concurrently</u> in the continuously manned central alarm station <u>and the secondary alarm station, and the video image recording with real time and playback capability provides assessment of activities before and after alarm annunciation within the perimeter barrier, located within the protected area and in at least one other continuously manned station.</u>

AP1000 TECHNICAL REPORT REVIEW

Response to Request For Additional Information (RAI)

Table 2.6.9-1 Inspections, Tests, Analyses, and Acceptance Criteria		
Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
5. b) <u>The central and secondary alarm stations are located inside the protected area, and the interior of each alarm station is not visible from the perimeter of the protected area.</u>	<u>Inspections of the central and secondary alarm stations will be performed.</u>	<u>The central and secondary alarm stations are located inside the protected area and the interior of each alarm station is not visible from the perimeter of the protected area.</u>
5. c) <u>The central and secondary alarm stations are designed and equipped such that, in the event of a single act, in accordance with the design basis threat of radiological sabotage, the design enables the survivability of equipment needed to maintain the functional capability of either alarm station to detect and assess alarms and communicate with onsite and offsite response personnel.</u>	<u>Inspections and/or analysis of the central and secondary alarm station will be performed.</u>	<u>The central and secondary alarm stations are designed and equipped such that, in the event of a single act, in accordance with the design basis threat of radiological sabotage, equipment needed to maintain the functional capability of either alarm station to detect and assess alarms and communicate with onsite and offsite response personnel exists.</u>
6. The vehicle barrier system is installed and located at the necessary stand-off distance to protect against the DBT vehicle bombs.	Type test, analysis, or a combination of type test and analysis <u>Inspections and analysis</u> will be performed for the vehicle barrier system to ensure it will protect against the DBT vehicle bombs based upon the stand-off distance for the system.	A report exists and concludes that The vehicle barrier system will protect against the DBT vehicle bombs based upon the stand-off distance of the system.
7.a) Vital equipment is located only within a vital area.	Inspection will be performed to confirm that vital equipment is located within a vital area.	Vital equipment is located only within a vital area.
7.b) Access to vital equipment requires passage through <u>the vital area barrier, at least two physical barriers.</u>	Inspection will be performed to confirm that access to vital equipment requires passage through <u>the vital area barrier, at least two physical barriers.</u>	<u>Vital equipment is located within a protected area such that access to vital equipment requires passage through the vital area barrier, at least two physical barriers.</u>

AP1000 TECHNICAL REPORT REVIEW

Response to Request For Additional Information (RAI)

Table 2.6.9-1 Inspections, Tests, Analyses, and Acceptance Criteria		
Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
8. Isolation zones and exterior areas within the protected area are provided with illumination to permit observation of abnormal presence or activity of persons or vehicles.	Inspection of the illumination in the isolation zones and external areas of the protected area will be performed to confirm sufficient illumination to permit observation.	The illumination in isolation zones and exterior areas within the protected area is 0.2 foot candles measured horizontally at ground level or, alternatively, sufficient to permit observation.
9. Emergency exits through the protected area perimeter and the vital area boundaries are locked, and alarmed, and emergency exits through the protected area perimeter and vital area boundaries are equipped with a crash bar to allow for emergency egress.	Test, inspection, or a combination of tests and inspections of the emergency exits through the protected area perimeter and the vital area boundaries are alarmed will be performed.	The emergency exits through the protected area perimeter and the vital area boundaries are locked, alarmed, and alarmed and emergency exits through the vital area boundaries are equipped with a crash bar to allow for emergency egress.
10. Not used		
11. Not used		
12. Not used		
13 a). The central and secondary alarm stations have conventional (landline) telephone service <u>with the main control room and other communication capabilities with local law enforcement authorities.</u>	Tests, inspections, analysis, or a combination of tests <u>and inspections and analysis of the central and secondary alarm stations' conventional telephone services will be performed.</u> to verify that the alarm stations: i) Are equipped with conventional (landline) telephone service with and other capability to communicate with local law enforcement authorities, and	A report exists and concludes that the alarm stations: i) The central and secondary alarm stations are equipped with conventional (landline) telephone service with the main control room and other capability to communicate with local law enforcement authorities.

AP1000 TECHNICAL REPORT REVIEW

Response to Request For Additional Information (RAI)

Table 2.6.9-1 Inspections, Tests, Analyses, and Acceptance Criteria		
Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
<p><u>13. b) The central and secondary alarm stations are capable of continuous communication with security personnel.</u></p>	<p><u>Tests, inspections or a combination of tests and inspections of the central and secondary alarm stations' continuous communication capabilities will be performed.</u></p> <p>ii) Are equipped with the capability to continuously communicate with each security officer, watchman, or armed response individual, or any security personnel that have responsibilities during a contingency event.</p>	<p><u>The central and secondary alarm stations are equipped with the capability to continuously communicate with each security officers, watchmen, armed response individuals, or any security personnel that have responsibilities during a contingency event.</u></p>
<p><u>13. c) Non-portable communication equipment in the central and secondary alarm stations remain operable from an independent power source in the event of loss of normal power.</u></p>	<p><u>Tests, inspections or a combination of tests and inspections of the non-portable communications equipment will be performed.</u></p>	<p><u>Non-portable communication devices (including conventional telephone systems) in the central and secondary alarm stations are wired to an independent power supply that enables the system to remain operable in the event of loss of normal power.</u></p>
<p>14. Not used</p>		
<p>15. a) Security alarm devices, including transmission lines to annunciators, are tamper indicating and self-checking (e.g., an automatic indication is provided when failure of the alarm system or a component occurs, or when on standby power). Alarm annunciation shall indicate the type of alarm (e.g., intrusion alarms and emergency exit alarm) and location.</p>	<p>A test will be performed to verify that security alarms, including transmission lines to annunciators, are tamper indicating and self-checking (e.g., an automatic indication is provided when failure of the alarm system or a component occurs, or when on standby power) and that alarm annunciation indicates the type of alarm (e.g., intrusion alarms and emergency exit alarms) and location.</p>	<p>A report exists and concludes that security alarm devices, including transmission lines to annunciators, are tamper indicating and self-checking (e.g., an automatic indication is provided when failure of the alarm system or a component occurs, or when the system is on standby power) and that alarm annunciation indicates the type of alarm (e.g., intrusion alarms and emergency exit alarms) and location.</p>

AP1000 TECHNICAL REPORT REVIEW

Response to Request For Additional Information (RAI)

Table 2.6.9-1 Inspections, Tests, Analyses, and Acceptance Criteria		
Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
<p>15. b) <u>Intrusion detection and assessment systems concurrently provide visual displays and audible annunciation of alarms in the central and secondary alarm stations.</u></p>	<p><u>Test will be performed on intrusion detection and assessment equipment.</u></p>	<p><u>The intrusion detection system concurrently provides visual displays and audible annunciations of alarms in both the central and secondary alarm stations.</u></p>
<p>16. Equipment exists to record onsite security alarm annunciation, including the location of the alarm, false alarm, alarm check, and tamper indication; and the type of alarm, location, alarm circuit, date, and time.</p>	<p>Test, analysis, or a combination of test and analysis will be performed to ensure that equipment is capable of recording each onsite security alarm annunciation, including the location of the alarm, false alarm, alarm check, and tamper indication; and the type of alarm, location, alarm circuit, date, and time.</p>	<p>A report exists and concludes that equipment is capable of recording each onsite security alarm annunciation, including the location of the alarm, false alarm, alarm check, and tamper indication; and the type of alarm, location, alarm circuit, date, and time.</p>

AP1000 TECHNICAL REPORT REVIEW

Response to Request For Additional Information (RAI)

3.3 Buildings

14. The external walls, doors, ceiling, and floors in the main control room, the central alarm station, and the secondary alarm station are bullet-resistant to at least Underwriters Laboratory Ballistic Standard 752, level 4.

Table 3.3-6 Inspections, Tests, Analyses, and Acceptance Criteria		
Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
<p>14. The <u>external walls, doors, ceiling, and floors in the main control room, and the central alarm station, and the secondary alarm station</u> are bullet-resistant to at least <u>Underwriters Laboratory Ballistic Standard 752, level 4.</u></p>	<p>Type test, analysis, or a combination of type test and analysis will be performed for the <u>external walls, doors, ceilings, and floors in the main control room, and the central alarm station, and the secondary alarm station.</u></p>	<p>A report exists and concludes that the <u>external walls, doors, ceilings, and floors in the main control room, and central alarm station, and the secondary alarm station</u> are bullet-resistant to at least <u>Underwriters Laboratory Ballistic Standard 752, level 4.</u></p>

13.6.1 Combined License Information Item

Combined License applicants referencing the AP1000 certified design will address site-specific information related to the security, contingency, and guards training plans. The Combined License applicant will develop the Physical Security Plan, the Training and Qualification Plan, and the Safeguards Contingency Plan. Combined License applicants will address site-specific security ITAACs as applicable.

The Combined License holder will develop and implement a Cyber Security Program.

PRA Revision: None

Technical Report (TR) Revision: None