



UNITED STATES  
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

October 31, 1994

APPLICANT: Westinghouse Electric Corporation

FACILITY: AP600

SUBJECT: SUMMARY OF MEETING TO DISCUSS SECURITY FOR THE AP600 DESIGN

On October 25, 1994, representatives of the Nuclear Regulatory Commission (NRC), Westinghouse Electric Corporation (Westinghouse), and the Advisory Committee for Reactor Safeguards met to discuss a conceptual security design for the AP600 design. Enclosure 1 is the list of attendees. Enclosure 2 is conceptual information that was presented by Westinghouse for discussion at this meeting.

Westinghouse proposed to reduce the security area for a plant referencing the AP600 design because all of the equipment needed for safe shutdown of the facility is located in a smaller protected area. Then Westinghouse discussed the layout of the plant, the proposed placement of the security forces and equipment, and the differences from currently operating plants. The applicant pointed out that the design significantly reduces the number of doors into the secure areas of the plant, therefore making access by a security threat more difficult.

Westinghouse indicated that they did not intend to provide any special security for systems identified as important through the process on the regulatory treatment of non-safety-related systems.

The staff indicated that, by collapsing the security perimeter, Westinghouse may have reduced the time for responders to recognize and respond to a security threat. The staff stated that Westinghouse should provide a vulnerability analysis (as requested in Q920.1 and Q920.5). Westinghouse should use the AP600 probabilistic risk assessment (PRA) to determine the level of importance of equipment and its relative affect on the core damage frequency, and incorporate this information into the analyses.

The staff requested Westinghouse to

- provide details of access points, including doors and hatches
- provide justification for unusual features of the security design, including any necessary exemptions from the regulations or deviations from regulatory guidance

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Westinghouse agreed to look at the PRA, perform the independent target analysis, and perform a vulnerability analysis for both an external and internal adversary.

**Original Signed By:**

Thomas J. Kenyon, Project Manager  
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Docket No. 52-003

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As stated

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Docket No. 52-003

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WESTINGHOUSE AP600  
AP600 SECURITY PLAN  
MEETING ATTENDEES  
OCTOBER 25, 1994

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## AP 600 Security Design Criteria

### Security Hardened Walls, Floors, & Ceiling

This criteria applies to all accessible and unmonitored portions of walls, floors, and ceilings which constitute a barrier to a Vital Area. Accessible is defined as those external walls where the surface of the wall to a height of 15 feet can be reached by normal means of walking, climbing fixed ladders, or using hand carried step-up devices. Inside accessible are defined as the wall surface, floor surface, or ceiling surface that can be reached by normal means of climbing fixed ladders, walking, or readily available climbing aids. Unmonitored is defined as not being visible to a continuously manned location or intrusion detection alarms and CCTV coverage.

The following parameters are based on the test data contained in Sandia Report SAND87-1926/1 • UC-515 "Access Delay Technology Transfer Manual" by extrapolating test configurations to configurations that would maintain equivalent delays. The minimum security hardened wall is constructed of 18 inch reinforced 4000 psi concrete with 3 layers of No. 6 rebar at 6" centers both ways. The height of the hardening is 15 feet above accessible surface areas with normal reinforced concrete above the 15 feet. Other acceptable walls of greater thickness are 24" thick with 2 layers of No. 6 at 6" centers, 36" thick with 2 layers of No. 8 at 12" centers, and 48" with 2 layers of No. 8 at 12" centers. Floors are a minimum of 8 inch reinforced concrete with 1 layer of No. 6 rebar at 6" centers with Q decking or a steel plate with welded anchors at 12" spacing on one side of the floor. Ceilings are the same minimum construction as floors. These parameters are based on the Sandia Report also using the test data derived from tests on sandwich wall configurations and that they increase the delay time by a factor of 5 to 6 times that of similar concrete walls without plates.

### Walls, Floors, Ceilings Within Continuously Monitored Areas

Continuously monitored is defined as areas that are manned on a 24 hour shift basis and activities in the area are visible to the personnel on shift. The design for these parts of the structure are govern by the structural requirements and not security requirements. Radiation shielding, wind loads, static loads, internal pressure, etc. will dictate the design.

### Protected Area Enclosures

These are enclosures surrounding personnel or equipment portals leading into Vital Areas. The enclosure (walls, floor, & ceiling) is constructed of a minimum of a No. 11 AWG chain link fence cage meeting the barrier requirements of 10 CFR 73. The enclosure is flooded with a volumetric intrusion detection system and is monitored with CCTV video capture for alarm assessment.

### Vehicle Barrier System

The Vehicle Barrier System (VBS) is designed to stop the Design Basis Vehicle before it reaches the safe standoff distance for Vital Equipment located inside containment or the Auxiliary Building. The VBS is constructed of a passive system as indicated on the layout with two active barriers at the vehicle portals indicated which meet the requirements specified in NUREG/CR-6190 Vol. 2. The safe standoff distance is based on the Design Basis Explosive and the guidance contained in NUREG/CR-6190 Vol. 1.

## AP 600 Security Design Criteria

### HVAC Penetrations

Penetrations through security hardened walls, floors, or ceilings will have two barriers of heavy steel grating installed to add adequate delay time for forced entry before the penetration penetrates the inside surface of the vital area barrier. Penetrations that can be reached by rappelling from the accessible portion of roofs are monitored by a local area alarm and CCTV video capture for alarm assessment.

### Primary Access Control Booth

The walls, doors, ceiling and the observation windows of the Primary Access Control Booth (room) are bullet resisting.

### CAS and SAS

CAS will be designed to comply with 10 CFR 73.55 requirements. It will not be visible from the outside and will be constructed such that the walls, floor, and ceiling are bullet resistant. The CAS will be protected as a Vital Area. SAS will be located close to the containment entrances and will be designed to comply with 10 CFR 73.55 requirements. It is located in an area of the plant that is not normally accessed by plant personnel as part of their daily activities.