



U.S. NUCLEAR REGULATORY COMMISSION

STANDARD REVIEW PLAN

13.6.2 PHYSICAL SECURITY - DESIGN CERTIFICATION

REVIEW RESPONSIBILITIES

Primary – Office of Nuclear Security and Incident Response

Secondary – None

I. AREAS OF REVIEW

For design certification (DC) applications, the review involves the evaluation of the physical security program design, to include those physical protection and mitigative measure elements identified to be within the scope of an applicant's design. The review must include the required physical security elements of a DC application and may also include a review of the voluntarily submitted physical protection and mitigative measure elements.

DRAFT - August 2007

USNRC STANDARD REVIEW PLAN

This Standard Review Plan, NUREG-0800, has been prepared to establish criteria that the U.S. Nuclear Regulatory Commission staff responsible for the review of applications to construct and operate nuclear power plants intends to use in evaluating whether an applicant/licensee meets the NRC's regulations. The Standard Review Plan is not a substitute for the NRC's regulations, and compliance with it is not required. However, an applicant is required to identify differences between the design features, analytical techniques, and procedural measures proposed for its facility and the SRP acceptance criteria and evaluate how the proposed alternatives to the SRP acceptance criteria provide an acceptable method of complying with the NRC regulations.

The standard review plan sections are numbered in accordance with corresponding sections in Regulatory Guide 1.70, "Standard Format and Content of Safety Analysis Reports for Nuclear Power Plants (LWR Edition)." Not all sections of Regulatory Guide 1.70 have a corresponding review plan section. The SRP sections applicable to a combined license application for a new light-water reactor (LWR) are based on Regulatory Guide 1.206, "Combined License Applications for Nuclear Power Plants (LWR Edition)."

These documents are made available to the public as part of the NRC's policy to inform the nuclear industry and the general public of regulatory procedures and policies. Individual sections of NUREG-0800 will be revised periodically, as appropriate, to accommodate comments and to reflect new information and experience. Comments may be submitted electronically by email to NRR_SRP@nrc.gov.

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The required elements of the review are as follows:

Element Number	Description	Requirement
1	Identify vital areas and a listing of vital equipment, by component and location, in vital areas.	10CFR73.55(c)(1)
2	Identify the control room and secondary power supply (for alarm annunciator equipment and non-portable communications) within a vital area.	10CFR73.55(e)(1)
3	Provide design of the locking and alarming of all unoccupied vital areas.	10CFR73.55(d)(7)(D)
4	Provide design of bullet resistance of the control room and central alarm station (CAS).	10CFR73.55(c)(6) and (e)(1)
5	Provide identification of locks used for the protection of the facility and special nuclear material as manipulative resistant.	10CFR73.55(c)
6	Provisions are provided for addressing the Inspections, Tests, Analyses and Acceptance Criteria (ITAAC) for those features within the scope of the design.	See Standard Review Plan (SRP) 14.3.12
7	Identify the combined license (COL) action items as a result of 1-6 above.	Required physical security items, and/or portions of those items, not resolved by the DC applicant must be identified as COL action items.

The voluntary elements of the review may consist of but are not limited to:

Element Number	Description	Requirement
1	Determination of the delay provided by the vital area walls and subsequent vital area door design such that it takes advantage of the delay provided by the vital area walls.	10CFR73.55(c)(1) and 10CFR73.1(a)(1)
2	Design of the approximate capacity and physical size of the secondary power supply to include conduit pathway and design.	10CFR73.55(e)(1)
3	Design of detection aids and positive control measures (i.e., for vehicles and personnel) for vital areas to include conduit pathway and design.	10CFR73.55(d)(7)(i)(B) and (D)
4	Design of security lighting.	10CFR73.55(c)(5)
5	Testing and maintenance of security systems, to include barriers, identified within the scope of the design.	10CFR73.55(g)
6	Design of emergency exits for the vital area and protected areas and alarms for those exits.	10CFR(d)(7)(i)(D)(ii) and (e)(3)

Element Number	Description	Requirement
7	Identification and design of delay barriers or intrusion alarms for unattended openings, of cross-sectional area of 96 square inches or more and that have one dimension of six inches or more, that traverse or cross a vital area or protected area boundary.	10CFR73.55(c) and (e) and 10 CFR 73.55 (proposed)
8	Design of the bullet resistance of the enclosure that protects the individual responsible for the last access control function for granting access to the protected area.	10CFR73.55(d)(1)
9	Design of the secondary alarm station to include location, hardening, access control of and layout.	10 CFR73.55(e)(1)
10	Design of the personnel portal for the protected area to include layout (i.e., responder personnel positions, locations of: x-ray, magnetometer, and explosive detectors). Access control devices (biometrics/card readers) identified by type and location.	10CFR73.55(d)(1), (2), and (5)(i)
11	Design of the protected area vehicle access portal(s) for vehicle(s) entering the protected area.	10CFR73.55(c)(7), (d)(2), (d)(3) and (d)(4)
12	Design of the vehicle access control point inside the owner controlled area prior to the protected area vehicle access portal.	10CFR73.55 (proposed)
13	Location and design of the protected area barrier. Design of the perimeter intrusion detection and assessment system (PIDAS) to include the isolation zone.	10CFR73.55(c)(1), (c)(4) and (c)(3)
14	Design considerations of the CAS. Layout, access control provisions, "no single act" requirement provisions, and "cannot see interior of CAS from perimeter of the protected area" conditions, specified.	10CFR73.55(e)(1)
15	Design and location of bullet/blast resistant enclosures	10 CFR73.55(c)
16	Weaponry and location of use specified.	10CFR73, App. B
17	Delay barriers. Type and location of active and passive delay measures specified.	10CFR73.55(c)
18	Design and location of vehicle barrier systems are specified.	10CFR73.55(c)(7)
19	Target set analysis.	10CFR73.55 (proposed)
20	Analyses provided that considers the implementation of advanced security systems and advanced security concepts.	10 CFR 73.55(a)
21	Performance of a Security Assessment - High Assurance Evaluation (See SRP 13.6.4)	10CFR73.55(a) and 10CFR73.1(a)(1)

Element Number	Description	Requirement
22	Performance of a Security Assessment - Mitigative Measures Evaluation (See SRP 13.6.5)	10CFR73, App. C (proposed)
23	Performance of a Security Assessment - Cyber Assurance Evaluation (See SRP 13.6.6)	10CFR73.55 (proposed)

Review Interfaces

Other required SRP sections interface with this section as follows:

1. Standard review Plan 0800, Section 14.3.12 Physical Security Hardware Inspections, Tests, Analyses, and Acceptance Criteria (PS-ITAAC).

Other voluntary SRP sections interface with this section as follows:

1. Standard Review Plan 0800, Section 13.6.4 "Security Assessment - High Assurance Evaluation."
2. Standard Review Plan 0800, Section 13.6.5 "Security Assessment - Mitigative Measures Evaluation."
3. Standard Review Plan 0800, Section 13.6.6 "Security Assessment - Cyber Assurance Evaluation."

The specific acceptance criteria and review procedures are contained in the referenced SRP sections.

II. ACCEPTANCE CRITERIA

Requirements

Acceptance criteria are based on meeting the relevant requirements of the following Commission regulations:

1. 10 CFR Part 50 "Domestic Licensing of Production and Utilization Facilities."
2. 10 CFR Part 52 "Early Site Permits; Standard Design Certifications; and Combined Licenses for Nuclear Power Plants."
3. 10 CFR 73.1(a)(1) "Radiological Sabotage."
4. 10 CFR 73.55 "Requirements for physical protection of licensed activities in nuclear power reactors against radiological sabotage," and Appendices B, C, G and H.
5. 10 CFR Part 74 "Material Control and Accounting of Special Nuclear Material."

6. 10 CFR 73.70(f) "Records and Reports."
7. 10 CFR 100.21(f) "Non-Seismic Siting Criteria."

Regulatory guidance documents that can be applied are as follows:

8. Regulatory Guide 1.70, Standard Format and Content of Safety Analysis Reports for Nuclear Power Plants, November 1978.
9. Regulatory Guide 1.91, Evaluations of Explosions Postulated to Occur at Transportation Routes Near Nuclear Power Plants, February 1978.
10. Regulatory Guide 4.7, General Site Suitability Criteria for Nuclear Power Stations, April 1998.
11. Regulatory Guide 5.12, General Use of Locks in the Protection and Control of Facilities and Special Nuclear Materials, November 1973.
12. Regulatory Guide 5.65, Vital Area Access Controls, Protection of Physical Security Equipment and Key and Lock Controls, September 1986.
13. Regulatory Guide 5.7, Entry/Exit Control for Protected Areas, Vital Areas, and Material Access Areas, Revision 1, May 1980.
14. Regulatory Guide 5.44, Perimeter Intrusion Alarm Systems, Revision 3, October 1997.
15. Information Notice No. 86-83: Underground Pathways into Protected Areas, Vital Areas, and Controlled Access Areas, September 19, 1986.
16. Regulatory Information Summary 2005-04, Guidance on the Protection of Unattended Openings that Intersect a Security Boundary or Area, April 14, 2005.

SRP Acceptance Criteria

Specific SRP acceptance criteria acceptable to meet the relevant requirements of the NRC's regulations identified above are as follows for the review described in this SRP section. The SRP is not a substitute for the NRC's regulations, and compliance with it is not required. However, an applicant is required to identify differences between the design features, analytical techniques, and procedural measures proposed for its facility and the SRP acceptance criteria and evaluate how the proposed alternatives to the SRP acceptance criteria provide acceptable methods of compliance with the NRC regulations.

1. Section (c) of 10 CFR 73.55 - Physical Barriers. The licensee shall locate vital equipment only within a vital area, which in turn, shall be located within a protected area such that access to vital equipment requires passage through at least two physical barriers as defined in 10 CFR 73.2. The physical barriers at the perimeter shall be separated from any other barrier designated as a physical barrier for a vital area within the protected area. Isolation zones in outdoor areas adjacent to the physical barrier at the perimeter of the protected area permit observation. Intrusion detection system detects penetration or attempted penetration of the protected area (PA) barrier. All exterior areas within the protected area are illuminated. The external walls, doors, ceiling and floors in the main control room are bullet resistant. Vehicle

control measures which include vehicle barrier systems protect against the use of land vehicle.

2. Section (d) of 10 CFR 73.55 - Access Requirements. The licensee shall control all points of personnel and vehicle access into a protected area, to include detection equipment capable of detecting firearms, explosives and incendiary devices. Unoccupied vital areas are locked and alarmed with activated intrusion detection systems that annunciate in both the central and secondary alarm stations upon intrusion into a vital area. The individual responsible for the last access control function (controlling admission to the protected area) must be isolated within a bullet-resisting structure.
3. Section (e) of 10 CFR 73.55 - Detection Aids. All alarms required pursuant to this part shall annunciate in a continuously manned central alarm station located within the protected area and in at least one other continuously manned station, not necessarily onsite, such that a single act cannot remove the capabilities of calling for assistance or otherwise responding to an alarm. The central alarm station shall be considered a vital area, shall be bullet-resisting, the interior will not be visible from the protected area perimeter, and associated onsite secondary power supplies for alarm annunciators and non-portable communication equipment must be located within vital areas. Alarm devices and transmission lines must be tamper indicating and self checking. Alarm annunciation shall indicate type of alarm and location. All emergency exits from protected and vital areas shall be alarmed.
4. Section (f) of 10 CFR 73.55 - Communication Requirements. Each security officer, watchman or armed response individual shall be capable of maintaining continuous communications with an individual in each continuously manned alarm stations. Conventional telephone and radio or microwave transmitted two-way voice communications shall be established with local law enforcement authorities.
5. Section (g) of 10 CFR 73.55 - Testing and Maintenance. Each applicant shall develop test and maintenance provisions for intrusion alarms, emergency alarms, communication equipment, access control equipment, physical barriers, and other security-related devices or equipment.

Technical Rationale

The technical rationale for application of these acceptance criteria to the areas of review addressed by this SRP section is discussed in the following paragraphs:

1. 10 CFR 73.55 establishes the detailed requirements for development and implementation of a physical security program that maintains high assurance against the threat of radiological sabotage.
2. 10 CFR 100.21(f) establishes that site characteristics must be such that adequate security plans and measures can be developed.
3. 10 CFR Part 74 establishes material control and accounting requirements for nuclear power reactors.
4. 10 CFR 73.1(a)(1) establishes the description of the design basis threat for radiological sabotage.
5. 10 CFR 73.70(f) establishes the required records and reports of the site security alarm system.

III. REVIEW PROCEDURES

The reviewer will select material from the procedures described below, as may be appropriate for a particular case.

These review procedures are based on the identified SRP acceptance criteria. For deviations from these acceptance criteria, the staff should review the applicant's evaluation of how the proposed alternatives provide an acceptable method of complying with the relevant NRC requirements identified in Subsection II.

For DC reviews, the review consists of careful examination of the information submitted and a comparison against the acceptance criteria as described in subsection II above. If the applicant chooses to provide only the minimum required information, the reviewer will review the application to determine if sufficient information exists to formulate a positive determination.

If the reviewer determines insufficient information is provided in the application to make a positive determination, then the reviewer should identify those issues deemed as unresolved and to be further addressed by a future applicant who herein references the specific design.

Required elements:

1. Vital area(s) are identified and depicted in text and in figures (D-size drawing) with adequate visual clarity to allow for review. Vital equipment is listed by component and identified by location within vital areas.
2. The control room and secondary power supply (for alarm annunciator equipment and non-portable communications) are identified and depicted by descriptive text and in a figure as located within a vital area.
3. The design of the locking and alarming of all unoccupied vital areas is provided, to include locks identified as manipulative resistant in accordance with RG 5.12. At a minimum, all access points for vital areas are identified by type (e.g., personnel, vehicle, equipment) and location, and locking systems are identified as in accordance with or to be in accordance with RG 5.12, or equivalent. Locations of vital area access points are described in both text and in a figure or figures (D-size drawing with adequate visual clarity).
4. The design of bullet resistance of the control room and central alarm station is provided and is specified to be, at a minimum, as UL 752 Level IV or NIJ Standard 0108.01 Type III. Specification of greater bullet resistance is acceptable. Design of bullet resistance for the, walls, floor, ceiling, doors, windows, and penetrations (e.g., cable ways, ventilation ducts, louvers) into these areas, is provided.
5. Locks used for the protection of the facility and special nuclear material are identified by location and function. All locks identified for protection of the facility and special nuclear material are identified as manipulative resistant in accordance with RG 5.12.
6. Provisions are provided for addressing the Inspections, Tests, Analyses, and Acceptance Criteria (ITAAC) for those features within the scope of the design. Adequate design information is provided for those ITAAC design elements within the scope of the design. Combined license (COL) action items are identified for those ITAAC items, within the scope of the design, that are partially addressed.

7. Combined license (COL) action items are provided for items 1-6 above. Those physical security requirements met partially or not addressed by the DC applicant are adequately described in such a manner that a COL applicant would be able to address them during the COL licensing process. Those physical security elements required by regulation need not be identified as COL action items by the DC applicant. But for items partially met, the DC applicant should explicitly identify which part of the requirement is met by the DC applicant and which part will be required to be met by the COL applicant, referencing the design.

Voluntary elements:

1. The analyses for the delay against the design basis threat (DBT) of radiological sabotage is provided for the vital area walls are provided and accurate. The analyses should include delay provided against tools and explosive breaching techniques (i.e., only those tools and techniques available to the DBT (see RG 5.69)). Vital area door system design is provided and takes advantage of the delay provide by the vital area walls. Vital areas are required, as described in 10CFR73.55(c)(1), to be protected by two barriers of sufficient strength to meet the general performance objectives described in 10CFR73.55(a). To take credit for the vital area wall as a barrier, the integrity of that barrier should not be lessened by any opening (see definition of a physical barrier in 10CFR73.2). Guidance for breaching analyses can be found in Regulatory Information Summary2003-06, and 2005-09 and NUREG 6190.
2. Design of the approximate capacity and physical size of the secondary power supply to include conduit pathway and design (e.g., within walls non-accessible, inside hardened conduit, fire resistance) is provided. The capacity is estimated based upon the expected electrical burden the annunciators and non-portable communication equipment. Inclusion of annunciators means the intrusion detection and assessment system because it is meaningless to just supply power to the annunciators, this aspect is corrected in the proposed rule (10CFR73.55). Non-portable communications equipment means radio base stations and site intercom, assuming these systems are required to maintain the required effectiveness (i.e., high assurance) of the physical protection system. The capacity will enable the identification of the approximate size which, in turn, will leave the applicant with greater assurance that the location of the secondary power supply is of sufficient physical dimensions to house such a supply. Capacity should be based upon a 24-hour supply of power and typically consists of an uninterruptible power supply (UPS) coupled to a diesel generator. The UPS immediately (e.g., several milliseconds) provides the electrical load when primary power is lost and the generator transfers the electrical load onto itself after establishing and maintaining the required load after starting. Refer to NUREG/CR-0509, November 1979, and Inspection Procedure 81058 "Security System Power Supply," May 9, 1984, for technical guidance.
3. Design of detection aids and positive control measures (i.e., for vehicles and personnel) for vital areas to include conduit pathway and design are provided. Method of intrusion detection (e.g., balanced magnetic switch) should be specified for each access control point. Access control provisions (e.g., key card, biometric device) for each access control point should be provided. Location of conduit pathway and design of conduit pathway should be provided.
4. Design of security lighting is provided in enough detail to ensure that the illumination requirements as specified in 10 CFR 73.55 will be met for the protected area.
5. Testing and maintenance of security systems, to include barriers, identified within the scope of the design is provided. Recommended testing and maintenance provisions for all security system features, to include barriers, identified within the scope of the design, are provided.

Ensure COL action items are identified for these recommended test and maintenance procedures to ensure continuity between DC and COL.

6. Design of emergency exits for the vital area(s) and protected area and alarms for those exits is provided. The design of each emergency exit (i.e., door systems, exit hardware and detection systems that detect unauthorized exit opening) identified as within the scope of the design, are provided.
7. The applicant has provided the identification of and design of delay barriers or intrusion alarms for unattended openings (that have the physical characteristics of a cross-sectional area of 96 square inches or more and have one dimension of six inches or more) that traverse or cross a vital area or protected area boundary. Unattended openings that are not alarmed must be under surveillance in such manner that the exploitation of that opening is interrupted. Delay times associated with the defeat of these designed barriers should be conveyed to the COL applicant referencing the design and the establishment of surveillance procedures for these openings identified as a COL action item.
8. Design of the bullet resistance of the enclosure that protects the individual responsible for the last access control function for granting access to the protected area is provided. Bullet resistance is specified to be, at a minimum, as UL 752 Level IV or NIJ Standard 0108.01 Type III. Specification of greater bullet resistance is acceptable. Design of bullet resistance for the, walls, floor, ceiling, doors, windows, and penetrations (e.g., cable ways, ventilation ducts, louvers) into these area, is provided.
9. Design of the secondary alarm station to include location, hardening, access control devices (type and location) and measures (e.g., utilization of close circuit television to monitor access) are specified and layout is provided. If hardened, the same criteria apply as voluntary element number 8.
10. Design of the protected area personnel portal to include layout (i.e., responder personnel positions, locations of: x-ray, magnetometer, and explosive detectors) is provided. Access control devices (biometrics/card readers) are identified by type and location.
11. Design of the protected area vehicle portal(s). Layout is specified and includes sally port (i.e., vestibule concept where to gates are used to isolate one vehicle at a time prior to granting access to conduct search operations) features and areas for housing armed responders, and explosive detection equipment. Features may include provisions for canines.
12. Design of the vehicle access control point inside the owner controlled area prior to the protected area vehicle portal is provided. Layout is specified and includes design of overwatch position. Guidance for vehicle access control point design is provided in a US Army Corps of Engineers guidance document developed for the NRC.
13. Location and design of the protected area barrier is provided. Design of the perimeter intrusion detection and assessment system (PIDAS) to include the isolation zone is provided. Design and location of the nuisance fence, zone of detection, fixed camera location, detection devices, and data gathering panels is provided. The delay provided by the protected area barrier is specified and in alignment with associated references 17 or 13, or adequately justified by other means.
14. Design considerations of the CAS are provided. Layout, access control provisions, "no single act" requirement provisions, and "cannot see interior of CAS from perimeter of the

protected area” conditions, are specified.

15. Design and location of bullet/blast resistant enclosures is provided. Bullet resistance criteria as described in voluntary element number 8 apply. Field-of-view from the enclosure is provided, design of weapon portal is provided to include allowed field of fire from it, design of door system is provided. If blast resistance is specified, technical information regarding how the blast resistance was determined is provided. Provisions for habitability (e.g., heating, cooling), communications, and provisions for monitoring of PIDAS alarms or other alarms is specified. Means of surveillance of the owner controlled area is specified; as appropriate.
16. Weaponry and location of use is specified. Weapon type and ammunition for each location of use is specified. If remotely operated weapons and/or munitions based access denial system are included, ensure the design includes location of the weapon system and controller station.
17. Design, type and location of active and passive delay measures are specified. These barriers could include delay fences, and vestibule design (such as the Silent Defender). If active barriers such as sticky foam are included ensure the design information includes location of the area where the foam is deployed and location of the active delay controller station.
18. Vehicle barrier systems are specified. Active and passive vehicle barrier design and location is specified in accordance with NUREG 6190. For active barriers, the location of the barrier is identified and the location of the controller station is identified. If natural terrain features are utilized their design is in accordance with NUREG 4250.
19. Target set analysis is provided. Target sets are provided and developed in accordance with Appendix B of the "Nuclear Power Plant Security Assessment Format and Content Guide," Information Systems Laboratories, August 2007, and specifically developed considering all target sets must be protected, in contrast to identification of attractive-to-adversary sets, identified for the security assessment - high assurance evaluation purposes.
20. An analysis that considers the implementation of advanced security system systems and advanced security concepts is provided. Candidate concepts and technologies may be found in Chapters 4 and 5 of the "Nuclear Power Plant Security Assessment Technical Manual." A listing should be provided of those technologies/concepts identified for implementation, with location of implementation identified. A D-size drawing should accompany the identified listing to provide a visual understanding of implementation strategy. If technologies/concepts are not identified an explanation for not considering them should be included. This element is in alignment with the NRC policy statement for new reactors such that advanced security systems and concepts may provide a more robust physical protection posture with less reliance on operational programs (human actions). This element may be submitted here as part of the design certification SRP or as element 15 under SRP 13.6.4.
21. Performance of a Security Assessment - High Assurance Evaluation (See SRP 13.6.4).
22. Performance of a Security Assessment - Mitigative Measures Evaluation (See SRP 13.6.5).
23. Performance of a Security Assessment - Cyber Assurance Evaluation (See SRP 13.6.6).

For review of a DC application, the reviewer should follow the above procedures to verify that the design, including requirements and restrictions (e.g., interface requirements and site parameters), set forth in the final safety analysis report (FSAR) meets the acceptance criteria. Design certificate applicant's refer to the FSAR as the design control document (DCD). The reviewer should also consider the appropriateness of identified COL action items. The reviewer may identify additional

COL action items; however, to ensure these COL action items are addressed during a COL application, they should be added to the DC FSAR.

After this review, SRP Section 14.3 should be followed for the review of Tier I information for the design, including the postulated site parameters, interface criteria, and ITAAC.

IV. EVALUATION FINDINGS

The reviewer should verify that the applicant has provided sufficient information and that the review and calculations (if applicable) support conclusions of the following type to be included in the staff's safety evaluation report. The reviewer should also state the bases for these conclusions.

For DC reviews, the findings will also summarize (to the extent that the review is not discussed in other SER sections) the staff's evaluation of the Physical Security - Inspections, Test, Analyses, and Acceptance Criteria (PS-ITAAC), including design acceptance criteria, as applicable, relevant to SRP Section 14.3.12 - Physical Security Hardware.

The evaluation finding at the DC stage should be substantially equivalent to the following statement:

The applicant has provided a description of the design for protecting the plant against potential acts of radiological sabotage and theft of special nuclear material. The design adequately describes the plant layout and protection of vital equipment in accordance 10 CFR 73.55 and applicable regulatory guidance, and provides reasonable assurance for this stage of the licensing process that the plant design will provide adequate protection against acts of radiological sabotage and theft of special nuclear material.

(NOTE: Theft of nuclear material consideration is only for those designs intended to utilize mixed-oxide fuel.)

V. IMPLEMENTATION

The staff will use this SRP section in performing safety evaluations of DC applications submitted by applicants pursuant to 10 CFR Part 50 or 10 CFR Part 52. Except when the applicant proposes an acceptable alternative method for complying with specified portions of the Commission's regulations, the staff will use the method described herein to evaluate conformance with Commission regulations.

The provisions of this SRP section apply to reviews of applications immediately to accommodate design certification and COL application schedules.

VI. REFERENCES

1. Conventional Weapons Effects (CONWEP) software and manual, U.S. Army Corps of Engineers, Omaha, NE. Restricted to government agencies and their contractors.
2. Single Degree of Freedom Blast Design Spreadsheet (SBEDS) Version 3.1 software and Methodology Manual, U.S. Army Corps of Engineers, Omaha, Nebraska. Unclassified.
3. Waterborne Sub-Surface Blast Effects to the Design Basis Threat, D. Sulfredge, Oak Ridge National Laboratory, Oak Ridge, TN. Safeguards Information.

4. Waterborne Surface Blast Effects to the Design Basis Threat, D. Sulfredge, Oak Ridge National Laboratory, Oak Ridge, TN. Safeguards Information.
5. Guidance for Using Underwater Explosion (UNDEX) Data for Estimating Loads on Submerged Targets, D. Sulfredge, Oak Ridge National Laboratory, Oak Ridge, TN, and B. Tegeler, U.S. Nuclear Regulatory Commission, Washington, DC. Unclassified.
6. NUREG/CR-4250, "Vehicle Barriers: Emphasis on Natural Features," Sandia National Laboratory, Albuquerque, NM. Unclassified.
7. Regulatory Information Summary 2003-06 "High Security Protected and Vital Area Barrier/Equipment Penetration Manual," U.S. Nuclear Regulatory Commission, Washington, DC. Safeguards Information.
8. FM 5-250 "Explosives and Demolitions," Department of the Army, Washington, DC. Restricted to government agencies and their contractors. Export controlled.
9. DOETIC-11268 "Manual for the Prediction of Blast and Fragment Loading for Structures," U.S. Department of Energy, Washington DC. Unclassified.
10. SD-STD-02.01 "Certification Standard, Test Method for Vehicle Crash Testing of Perimeter Barriers and Gates," U.S. State Department, Washington, DC. Unclassified.
11. Department of Defense and Department of State certified vehicle barrier list, (updated periodically by the U.S. Army Corps of Engineers, Omaha, NE, available at <https://pdc.usace.army.mil/library/BarrierCertification/>). Unclassified.
12. TM 5-1300 "Structures to Resist the Effects of Accidental Explosions," Department of Defense, Washington, DC. Unclassified. (Also designated as Air Force AFR 08-22 and Navy NAVFAC P-3897).
13. SAND2001-2168 "Technology Transfer Manual - Access Delay Technology, Volume 1," Sandia National Laboratories, Albuquerque, NM. In addition, all manuals in the Technology Transfer series: SAND99-2390, SAND2000-2142, SAND2004-2815P, SAND99-391, SAND99-2388, SAND99-2392 and SAND99-2389. Unclassified Controlled Nuclear Information.
14. Air Force Manual (AFMAN) 91-201 "Explosive Safety Standard," U.S. Air Force, Washington, DC. Unclassified.
15. NUREG/CR-6190 "Protection Against Malevolent Use of Vehicles at Nuclear Power Plants," U.S. Army Corps of Engineers, Omaha, NE. Safeguards Information.
16. WINGARD (Window Glazing Analysis Response and Design) software, U.S. General Services Administration (GSA), Washington, DC. Restricted. (Available at www.oca.gsa.gov).
17. Regulatory Information Summary 2005-09 "High Security Protected and Vital Area Barrier Breaching Analysis," U.S. Nuclear Regulatory Commission, Washington, DC. Safeguards Information.
18. PDC-TR-01-01 "Structural Assessment of Spent Fuel Pools Attacked with a Sophisticated

- Sabotage Threat," U.S. Army Corps of Engineers, Omaha, NE. Safeguards Information.
19. PDC-TR-01-02 "Structural Assessment of Spent Fuel Pools Attacked with an Unsophisticated Sabotage Threat," U.S. Army Corps of Engineers, Omaha, NE. Safeguards Information.
 20. NIJ Standard 0108.01, Ballistic Resistant Protective Materials, National Institute of Justice, Washington, DC. Unclassified.
 21. Underwriters Laboratories (UL) Standard for Bullet Resisting Equipment, UL 752. Unclassified.
 22. Federal Register 50 FR 32138, 10 CFR 50, "Policy Statement on Severe Reactor Accidents in Regarding Future Designs and Existing Plants."
 23. NUREG-1226 "Development and Utilization of the NRC Policy Statement on the Regulation of Advanced Nuclear Power Plants."
 24. NUREG/CR-1345 "Nuclear Power Plant Design Concepts for Sabotage Protection," Sandia National Laboratories, Albuquerque, NM. 1981. Unclassified.
 25. EA-02-026 "Interim Compensatory Measures (ICM) Order."
 26. EA-03-086 "Design Basis Threat Order."
 27. NRC Guidance on Implementation of the April 2003 Revised Design Basis Threat. U.S. Nuclear Regulatory Commission, Washington, DC. Safeguards Information.
 28. NUREG-1267 "Technical Resolution of Generic Safety Issue A-29," U.S. Nuclear Regulatory Commission, Washington, DC. Unclassified.
 29. NUREG/CR-1381 "A Methodology for Evaluating Safeguards Capabilities for Licensed Nuclear Facilities," Sandia National Laboratories, Albuquerque, NM. Unclassified.
 30. NUREG/CR-1198 "Design Guidance and Evaluation Methodology for Fixed-Site Physical Protection Systems," Sandia National Laboratories, Albuquerque, NM. Unclassified.
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PAPERWORK REDUCTION ACT STATEMENT

The information collections contained in the Standard Review Plan are covered by the requirements of 10 CFR Part 50 and 10 CFR Part 52, and were approved by the Office of Management and Budget, approval number 3150-0011 and 3150-0151.

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