

November 3, 2000

MEMORANDUM TO: Bruce A. Boger, Director
Division of Inspection Program Management
Office of Nuclear Reactor Regulation

FROM: Glenn M. Tracy, Chief **/RA/**
Operator Licensing, Human Factors
and Plant Support Branch
Division of Inspection Program Management
Office of Nuclear Reactor Regulation

SUBJECT: INSPECTION PROCEDURE 71130.XXX, "OBSERVATION AND
EVALUATION OF SAFEGUARDS PERFORMANCE ASSESSMENT."

Attached is a draft copy of Inspection Procedure 71130.XXX proposed for use during the Safeguards Performance Assessment (SPA) program. We are making this memorandum and the attachment accessible to the public via ADAMS in order to provide all agency stakeholders the ability to view the document. The ADAMS accession number is ML003766675.

Attachments: As stated

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415-3309

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Attachment 71130. XX: Observation and Evaluation of Safeguards Performance Assessments

INSPECTABLE AREA: Response to Safeguards Contingency Events (Protective Strategy and Implementation of Protective Strategy)

CORNERSTONE: Physical Protection

INSPECTION BASES: This program assesses a licensee's ability to protect against the Design Basis Threat (DBT) of radiological sabotage. The licensee should be able to demonstrate the ability to respond with sufficient force, properly armed, appropriately trained and within the appropriate time to protected positions to interdict and defeat the design basis adversary force in order to protect equipment necessary for the safe shutdown of the plant and the prevention of core damage. The protective strategy and physical protection program should be exercised on a recurring frequency to ensure its effectiveness against the DBT. On a triennial basis through force-on-force exercises, each licensee will demonstrate its response capabilities relative to the DBT. Supplement A, "Interim Physical Protection Significance Determination Process," to this inspection procedure will be used to assess findings associated with inadequate performance identified during exercises.

LEVEL OF EFFORT: This Safeguards Performance Assessment (SPA) inspection, a team approach, will be accomplished at each licensed facility on a triennial basis. This inspection will be coordinated by the respective regional office and will generally be led by a regional inspector. The team will generally consist of a safeguards inspector, a safeguards exercise specialist, and an NRC contractor. This team inspection must be capable of evaluating: (1) the licensee's ability to assess its protective strategy and the implementation of that strategy, and (2) the licensee's ability to protect against the DBT of radiological sabotage.

71130.03-01 INSPECTION OBJECTIVE

01.01 Assess the ability of the licensee to identify issues and evaluate the effectiveness of its protective strategy, as implemented and supported by applicable plans, systems and functions. Assess the licensee's ability to develop realistic target sets. Assess the adequacy of exercise

scenarios to challenge the protective strategy. Assess the effectiveness of the licensee's post-exercise critiques.

01.02 Assess the effectiveness of the licensee's protective strategy against the design-basis threat and its implementation of that strategy, through observations, tours and pertinent record reviews. Observe the licensee demonstrate its protective strategy capabilities via force-on-force exercises. Assess the timeliness of the response with a sufficient number of appropriately armed and protected responders.

71130.03-02 INSPECTION REQUIREMENTS

02.01 Inspection Planning

- a. Coordinate the composition of the inspection team with the NRR Safeguards Staff at least 3 months in advance of the inspection.
- b. At least 30 days before the inspection, request the licensee provide a schedule of activities slated for NRC observation.
- c. Develop a plan to observe licensee-conducted activities and provide it to all team members at least 2 weeks before the inspection.
- d. Provide the licensee with requisite background, clearance, and training information to facilitate unescorted access for team members in a timely manner.

02.02 Conducting the Inspection

a. Target Sets

A target set is a minimum combination of equipment or proceduralized actions which, if prevented from performing their intended safety function or prevented from being accomplished, would result in core damage. Based on this definition, the NRC team will review licensee target sets to ensure that they meet this definition and are realistic.

The final target sets will be considered valid upon initiation of the exercise. Each target set is the goal of a scenario. The licensee's performance for a particular exercise scenario should be judged a success if the response force effectively protects against the adversary disabling and/or destroying all pieces of equipment and preventing the actions in a target set; and the licensee's performance will be judged unsuccessful for the scenario if the response force is not able to prevent the adversary from disabling and/or destroying all pieces of equipment/actions in a target set.

The licensee may take credit for equipment, procedures, and/or training to protect a target set or to mitigate/recover from the consequences of a destroyed/disabled target set. If a licensee takes credit for equipment to be used by licensed operators in protecting a target set from destruction/disablement, that equipment must be identified as part of the target set before initiation of an exercise. Credit for actions that a licensee may take outside of a target set may only be used to mitigate or recover from the

consequences of a lost target set and to evaluate the overall risk to public health and safety.

If operator actions are required to credit placing mitigation equipment in service for recovery actions, such credit should be given only if the following criteria are met: (1) sufficient time is available to implement these actions; (2) environmental conditions allow access where needed, including any unconstrained adversary activity; (3) approved procedures exist; (4) training is conducted on the existing procedures under conditions similar to the scenario assumed; and (5) any equipment needed to complete these actions is available and ready for use. Otherwise, no credit will be given during the exercise.

c. Protective Strategy

Review, at the site, the licensee's current protective strategy, including the licensee's target set analysis and response program procedures to determine if changes have been made since the last inspection.

Meet with licensee security management for an overview of the protective strategy. The overview should include the strategy type and the number of responders, including their normal locations, armament, capabilities, and tactics. The licensee should be able to explain the tactical response for an attack from each geographical sector (north, south, east, west) of the protected area (PA). The licensee should postulate attacks with multiple sector intrusions and/or diversions and explain its tactical response.

Ensure the licensee uses no more than the minimum number of security force members that are committed to in the NRC-approved security plan to demonstrate its protective strategy. In general, the licensee may use only the committed number of armed responders. However, the initial response may be augmented by other armed security force members, as committed to in the licensee's security plan. The augmented response shall be demonstrated in accordance with plan commitments relative to normal duty assignments, level of readiness, and armament. In light of the continuously manning requirements of 10 CFR 73.55(e) and (f), the augmented response, as planned, should not include alarm station operators.

Because an exercise is intended to assess a licensee's protective strategy, the licensee is expected to follow the response strategy in accordance with its security plan, including using the number of responders committed to in the plan. Using fewer responders than committed creates an artificiality which can complicate the assessment of the response strategy. If the licensee elects to use fewer responders than that specified in its plan, this will not invalidate the findings of the exercise and cannot be used alone to support a reduction of the licensee's commitment for response force strength.

The licensee will be limited to equipment that is either committed to in the security plan or consistent with the written description of the protective strategy. The licensee must meet this criteria to receive credit for equipment during an exercise. This equipment includes, but is not limited to, assessment aids, video capture, delay barriers, and defensive positions.

d. PA and Vital Areas Tours

Accompany the licensee on a tour of the PA and vital areas (VAs) to assess potential routes of travel to target sets by an adversary and to assess the accessibility to target equipment. Identify entry locations into the protected area which will most likely pose a challenge to the protective strategy. Assess the physical location of weapons repositories, defensive positions and defensive measures. Assess responder accessibility to weapons repositories and defensive positions. Assess the licensee's overview of its protective strategy relative to PA and VA tours.

e. Adversary Characteristics

Ensure that the licensee is knowledgeable on the Operational Safeguards Response Evaluation (OSRE) Adversary Characteristics during the entrance meeting. Verify that the licensee has measures in place to achieve clear understanding of the OSRE Adversary Characteristics by all participants at the onset of a drill or exercise.

f. Scenario Selection

Assess the licensee's selection of table-top drill scenarios and adversary entry points. Independently verify their adequacy based on information derived from target-set analysis, review of the protective strategy, and PA and VA tours. Exercise scenarios should be based on all of the above plus the results of table-top drills. Scenarios should be developed to challenge the protective strategy from each geographical quadrant (north, south, east, and west).

Verify that the licensee has developed a repertoire of scenarios in accordance with Appendix B to the Safeguards Performance Assessment Program. Verify that the scenarios selected by the licensee for drills and exercises are technically accurate and challenging.

g. Table-Top Drills

Verify that the licensee has a clear understanding of the adversary characteristics before the commencement of drills. Determine types of weapons and amount of ammunition carried by each response-force member. Determine command and control responsibilities and a chain of succession.

Observe the licensee conduct four table-top drills. Assess time lines for both the adversary force and response force. Assess tactical movement and engagements for both the adversary force and the response force. Verify that the drills were consistent with information derived from the licensee's overview of the protective strategy and the site tour. Assess drill participants' knowledge of the protective strategy and conclusions drawn from the drills. Review licensee forms and instructions used to document and critique the drills.

h. Mock Adversary Force, Controllers, and Armed Responders Briefings

(1) Mock Adversary Force: Verify that the mock adversary force has been briefed on the adversary characteristics, is equipped to simulate the weapons and explosives they are intended to carry, and are aware of their duties. Determine if the mock adversaries possess the offensive tactical proficiency to be representative of the design basis threat. Verify that mock adversaries have been provided with sufficient information, detailed drawings and sufficient briefings, to develop an attack plan representative of a force which had undergone extensive training with the benefit of a mock-up of the facility.

(2) Controllers: Verify the controllers have been trained in their assigned duties and are suitably equipped with stopwatches, clipboards, and other items necessary to carry out their assigned duties. Verify that the licensee has taken actions to ensure that controllers clearly understand the licensee's methodology to simulate all aspects of an exercise scenario.

(3) Armed Responders: Verify that armed responders have been briefed on their assigned duties in the exercise including instructions on communicating their actions and have been briefed on safety precautions during the exercise.

i. Force-on-Force Exercises

(1) Observe the licensee conduct force-on-force exercises. Verify that the licensee has taken appropriate measures to ensure that the exercises, conducted or planned, do not affect reactor safety. The licensee must demonstrate due care for personal and equipment safety. The scheduling and conduct of exercises should always be coordinated with operating staff to ensure that the performance demonstration will not adversely affect nor be adversely affected by plant safety activities.

(2) Verify that the licensee has taken appropriate actions to ensure that each exercise participant has a clear understanding of the adversary characteristics before the commencement of exercises.

(3) Observe the licensee conduct force-on-force exercises. Assess the licensee's ability to judge all aspects of the exercise. Independently assess tactical movement and engagements for both the adversary force and the response force. Verify that the exercises were consistent with information derived from the licensee's overview of the protective strategy and the site tour.

(4) Assess the licensee's ability to simulate exercise conditions in a manner that realistically reflect the DBT. Assess the licensee ability to identify and resolve anomalies during the exercise. Independently assess the impact of those anomalies on the protective strategy and its implementation. Review licensee forms and instructions used to document and critique the exercises. Assess the licensee's conclusions drawn from the exercises.

(5) Assess the roles and performance of planners, controllers and adversaries to determine that goals were met and that the performance activity reasonably

challenged participants and reflected actual licensee capabilities and the defined capabilities of the Design Basis Threat.

j. Alarm Station, Command and Control, and Communications

- (1) Alarm Station: Verify that the alarm station operators are briefed on how to carry out their assigned duties relative to exercises. Assess the performance of the alarm station operator during the exercises.
- (2) Command and Control: Assess the performance of security supervisors in carrying out their assigned command and control duties.
- (3) Communications: Verify that the licensee has taken measure to ensure that exercise communications do not interfere with real-time security duties. Assess the effectiveness of communications.

k. Observation of Contingency Exercises

- (1) It is the responsibility of the licensee to identify and address exercise artificialities before initiation of the exercise that may complicate a clear assessment of the results. The licensee should limit these artificialities or provide appropriate signals to overcome them during the exercise. For example, the adversaries must carry a burden equivalent to the weight of needed equipment and/or explosives; simulated use of explosives should be indicated by some sort of sound effect; simulated casualties in the field of play should be indicated by a flag or some other clearly visible indicator.
- (2) Take measures to eliminate interference with the players or controllers by NRC observers. NRC observers may seek clarification of observed exercise activities from a controller. Specifically, note any prompting or coaching of players by controllers and any inappropriate controller manipulation of the scenario. Assess the impact of such actions and evaluate the licensee's self-assessment of that impact.
- (3) Position NRC personnel to observe major aspects of the licensee's protective strategy and scenario. Areas to be observed should be alarm station activities; command and control functions; communications; actions of mock adversaries; controller activities; armed responder actions; and operations activities in response to the contingency.

I. Licensee Critique of Contingency Exercises

- (1) Observe the licensee's critique. Ask questions only to the extent of understanding the particulars of an exercise. Do not raise performance issues in this forum.
- (2) Verify that the licensee's assessments of problems and issues were of sufficient scope to address the key attributes of the Response to Contingency Events inspectable area.
- (3) Identify operational issues that may impact the significance of the results and verify that the risk significance of the findings was properly addressed.
- (4) Verify that root cause analyses (if required depending on risk significance) and corrective actions were timely and adequate to prevent recurrence.
- (5) Verify that the licensee considered generic issues relative to the industry and the NRC.
- (6) Ensure that any reportable issues are acted upon by the licensee.

02.03 Licensee Identification of Findings

- a. The licensee's conduct of table-top drills and force-on-force exercises should culminate with a comprehensive process to assess its protective strategy. The process should serve as both a training tool and a means to self-audit the strategy and its implementation.
- b. Observe and assess the licensee's process to ensure that objectives were clearly identified; observations and findings were effectively communicated; results were technically accurate; lessons learned were appropriately considered relative to protective-strategy and/or training adjustments; deficiencies were appropriately assessed, documented, and properly assessed relative to compensatory measures and reporting requirements; and that corrective actions were appropriately tracked.
- c. Determine if the licensee's process effectively and accurately evaluates the licensee's overall safeguards program and ability to protect against the Design Basis Threat.

02.04 NRC Determination of Findings

- a. Inspectors will determine whether exercise findings, weaknesses, violations or identified vulnerabilities are entered into a tracking system that protects Safeguards Information and ensures timely and effective corrective action.
- b. Inspectors will compare observed or recorded licensee performance to required plans, procedures and applicable regulatory requirements. When performance fails to meet those requirements, a finding should be documented and evaluated using the IPPSDP (Supplement A). When appropriate, a violation should be considered and dispositioned

according to enforcement guidance. When no clear evaluation is possible, perhaps due to conflicting or disparate information, an unresolved item may be appropriate. Significant vulnerabilities that are observed or identified must be brought to the licensee's attention for immediate resolution.

- c. A licensee's response to a scenario should be considered adequate when it interdicts the adversaries: (1) in a timely manner; (2) with sufficient numbers (as specified in its security plan) of responders who are appropriately armed, and (4) in protected positions. The licensee's performance for a particular exercise scenario will be judged a success if the response force effectively protects against the adversary disabling and/or destroying all pieces of equipment and actions in a target set; and the licensee's performance will be judged unsuccessful for the scenario if the response force is not able to prevent the adversary from disabling and/or destroying all pieces of equipment/actions in a target set.
- d. Inspectors should focus evaluations of licensee performance on public safety. The required ability to demonstrate high assurance of protection against the DBT is the focus of this performance evaluation.
- e. Should a licensee demonstrate that it is not able to provide the minimum response required, it should be requested to take compensatory measures which will ensure that the minimum response needed to provide protection against the DBT is effectively implemented. Inspectors will verify the implementation of that compensatory measure before leaving the site.

71130.03-03 RESOURCE ESTIMATE

The resource estimate for this section is approximately 70 hours of direct inspection effort onsite every three years.

71130.03-04 REFERENCES

NRC OSRE Adversary Characteristics, dated August 29, 2000.
NEI 99-07, Safeguards Performance Assessment Program, XXXXX, XX, 2000

INSPECTION GUIDANCE
Response to Contingency Events
Inspection Guidance Table

Cornerstone	Inspection Objective	Risk Priority	Example
<p>Response to Contingency Events (Protective Strategy and Implementation of Protective Strategy)</p>	<p>Verify that the licensee has developed an exercise program to test its capability to protect target sets against the design basis threat, assess the ability of the licensee to identify issues, and evaluate the effectiveness of its protective strategy.</p>	<p>If an attack occurred and the licensee failed to protect a target set, the consequence of radiological sabotage may be high.</p> <p>Supplement A, "Interim Physical Protection Significance Determination Process," to this inspection procedure will be used to assess risk associated with inadequate performance identified during exercises.</p>	<p>Security responds with sufficient force, properly armed, appropriately trained and within appropriate time frame to interdict and defeat the design basis threat.</p> <p>Security personnel on all shifts are trained on effective tactical deployment and weapons tactics.</p> <p>Alarm station operators and supervisors can effectively direct deployment of security forces.</p> <p>Target Sets are adequately identified</p> <p>Procedures that prevent emergency access or egress. Barriers, delay devices or practices that affect safety unnecessarily.</p>

Supplement A

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