



Proposed Enhancements For The Force-on-Force (FOF) Significance Determination Process (SDP)

Office of Nuclear Security
and Incident Response (NSIR)

Division of Security Operations

Topics of Discussion

- Statutory Basis
- FOF Inspection Process
- Current FOF SDP
- Proposed Enhancements
- Current Proposed Revisions to the FOF SDP
- Next Step

Statutory Basis

- Atomic Energy Act of 1954 As Amended, Subtitle D – Nuclear Security, Section 170D, Security Evaluations.
- Mandates that FOF exercises are conducted every 3 years to assess a licensee’s ability to defend against the design basis threat (DBT).
- Exercises must simulate threats to the maximum extent practicable.

Statutory Basis (cont.)

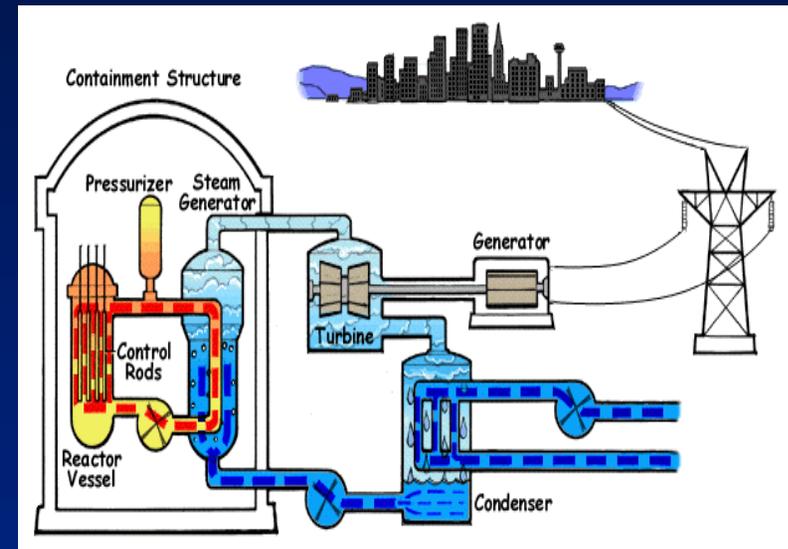
- Exercises must ensure licensees correct defects in performance, if identified.
- Exercise results and corrective actions must be reported annually to the U.S. Senate and U.S. House of Representatives oversight committees.

FOF Inspection Process

- 10 CFR 73.55 states in part that licensees shall demonstrate the ability to meet the Commission's requirements.
- FOF Inspections verify and assess the effectiveness of licensees' implementation of their protective strategies in accordance with the NRC-approved plans, related implementation procedures and regulatory requirements.
- The current program has proven to be highly effective in evaluating licensee's ability to protect against the Design Basis Threat.

Target Set Review

- 10 CFR 73.55(f), Target Sets. This paragraph provides requirements for the development, documentation, and periodic re-evaluation of target sets.
- Target sets are a minimum combination of equipment or operator actions which, if prevented from performing their intended safety function or prevented from being accomplished, would likely result in significant core damage (e.g., non-incipient, non-localized fuel melting, and/or core destruction) or a loss of coolant and exposure of spent fuel barring extraordinary action by plant operators.



Verify that the licensee knows what to protect

Planning Week Inspection

- Select Most Attractive Target Sets for Exercise Scenarios
- Observe Protective Strategy Briefs
- Conduct OCA, PA, VA, and Target Set Tours
- Assess Table Top Demonstrations
- Perform Intrusion Detection System Testing
- Review the Licensee's Controller Training Program
- Develop the Concept Of Operation for the Exercise Scenarios

Verify that the licensee has a strategy to protect

FOF Exercise Week Inspection

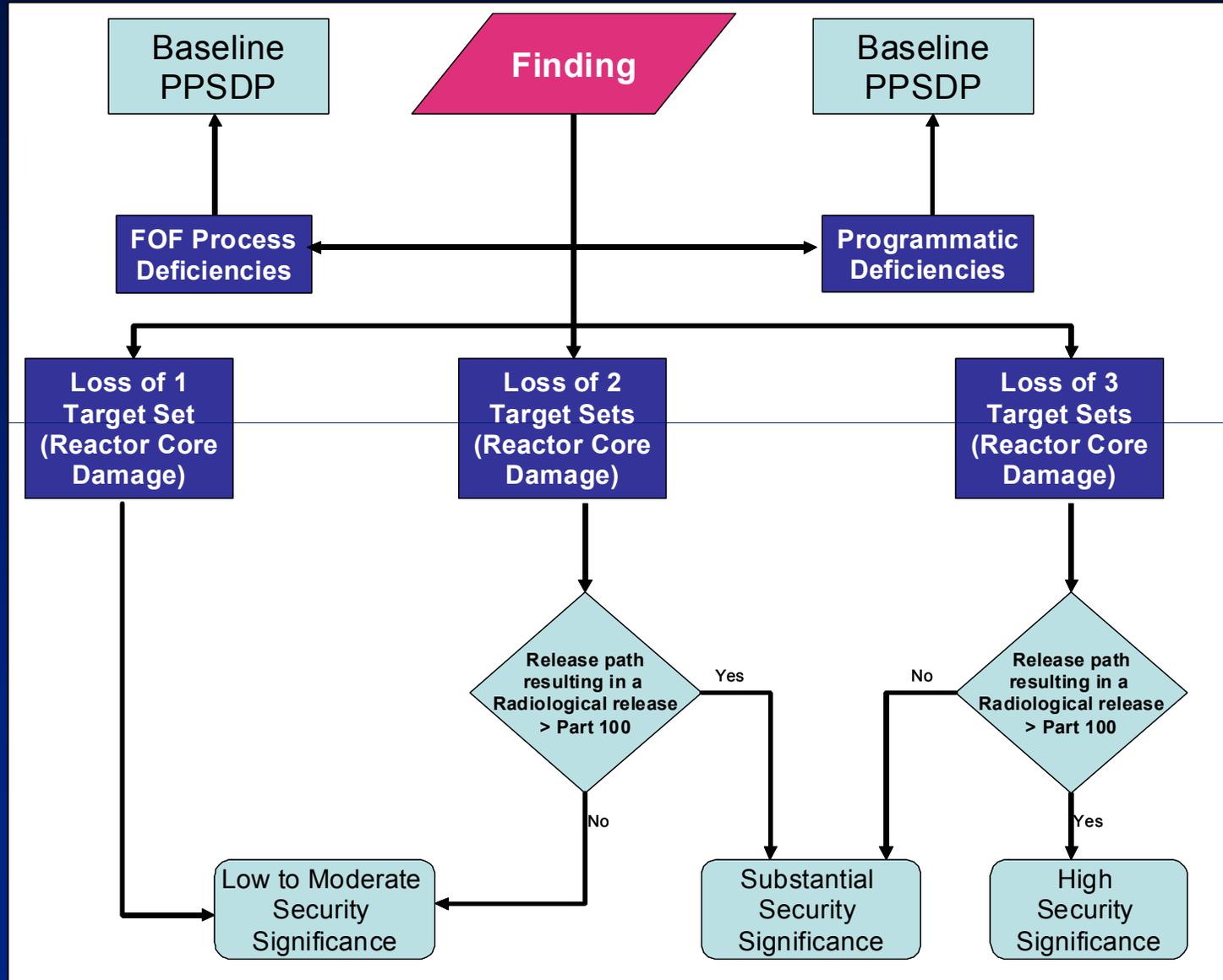
- Observe Safety Walk-downs
- Observe Safety Briefings
- Observe Controller Briefing
- Observe Adversary Player Briefing
- Observe Licensee Player Briefing
- Observe On Duty Shift Briefing
- Observe MILES Equipment Briefing
- Typically Conduct Three Exercises
- Observe Post Exercise Critiques

Verify that the licensee can execute the strategy

Current FOF SDP

- The purpose of the FOF SDP is to provide an objective and consistent means of evaluating findings associated with FOF Inspections.
- The SDP will be used to evaluate the projected outcome of a simulated attack.

Current SDP Flow Chart



Proposed Enhancements

- In late 2008 through the first quarter of 2009, following the completion of the first cycle of triennial FOF inspections, NSIR staff conducted a review of the FOF Inspection Program.
- During the FOF inspection, which occurs over several weeks, a wide range of licensee activities are inspected and evaluated.
- Although the current FOF SDP tool has been effective at facilitating the assessment of the results of triennial FOF exercises, the tool does not consider some aspects of licensees' overall security programs which are reviewed during the regional based security baseline inspections and FOF inspection process.

Proposed Enhancements (cont.)

- Licensee performance during the NRC-conducted triennial exercises will remain the core program element to be assessed during FOF inspections.
- Ensure the final significance determination for findings identified with licensee protective strategy performance are characterized consistently within the ROP.
- The proposed changes would include a review of the overall licensee security program performance in the years between each FOF Inspection to include the current FOF inspection .

Proposed Enhancements (cont.)

- Proposed changes would address a false-positive and false-negative inspection assessment.
- Proposed changes would consider a finding for “Marginal” licensee protective strategy exercise performance.

Marginal Exercise Examples

- The adversary(s) simulated the destruction of target set equipment in multiple locations by defeating the protective strategy designed defenses (interdiction and neutralization) and were then neutralized by site responder(s) chasing adversary(s) or using response tactics not in accordance with the site protective strategy.

Marginal Exercise Examples (cont.)

- The adversary(s) were neutralized at the location of, or making preparations to enter, the Control Room Breach Point.
- The adversary(s) were neutralized at the location of, or making preparations to enter the Spent Fuel Pool area, location of a single element target set, or the location of the last element of the target set. Site responders were not pre-staged in defensive positions to neutralize the adversary(s) prior to gaining access to the target set at that location.

Marginal Exercises (cont.)

Any marginal exercise performance will now be a finding.

- One marginal exercise = Green Finding
- Two marginal exercises = Green Finding
- Three marginal exercises = White Finding

Program Threshold Criteria

- Will be used in the FOF SDP for exercise failures to address circumstances where an exercise failure may not be reflective of the licensee's overall security performance.
- Consideration of other inspection results and escalated findings associated with the current security program over the 3 years between FOF Inspections for final significance determination related to FOF inspection results.

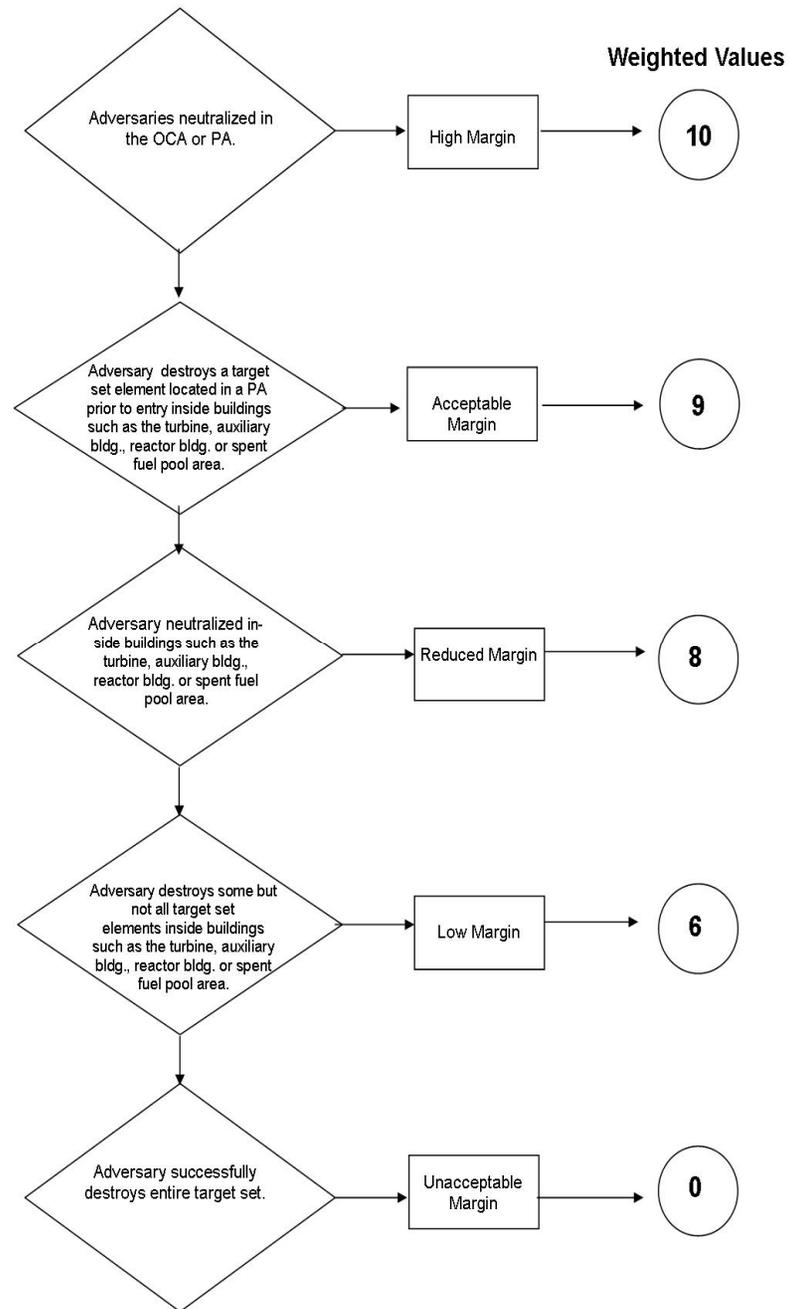
Program Threshold Criteria (cont.)

- No marginal exercise(s) during the exercise week.
- No open greater-than-Green Performance Indicators (PIs) in the security cornerstone at the time of the FOF exercise, and no greater-than-Green findings resulting from the most recent inspection of each security baseline inspection procedure (i.e., the last 71130.01, 71130.02, etc.).
- No substantive cross-cutting issues where one or more of the associated findings were in the Security cornerstone.

Initial Draft

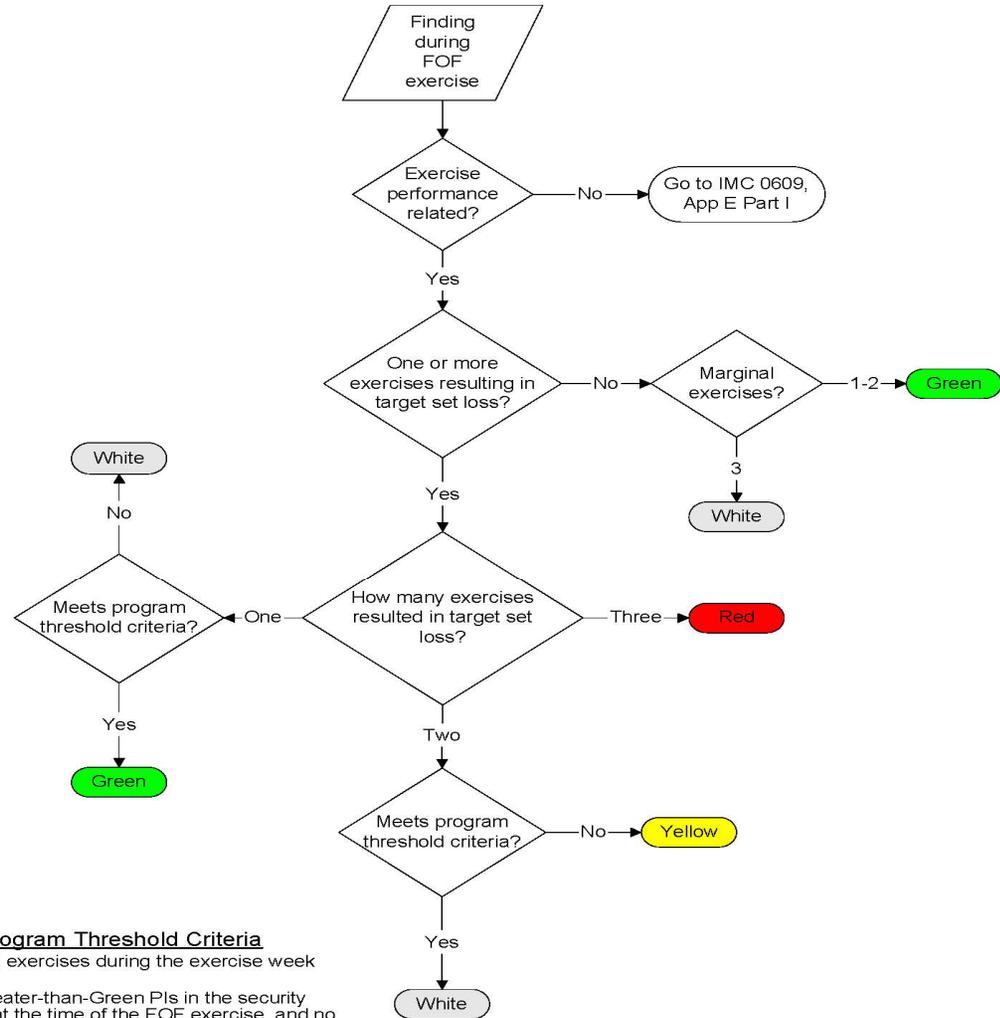
Exercise Margin Assessment Tool Flow Chart

Force on Force Margin Assessment



Current Proposed Revision to the FOF SDP

DRAFT FORCE ON FORCE SDP



Program Threshold Criteria

- No marginal exercises during the exercise week
- No open greater-than-Green PIs in the security cornerstone at the time of the FOF exercise, and no greater-than-Green findings resulting from the most recently conducted inspections of each security baseline inspection procedure during the cycle
- No substantive cross-cutting issue where one or more of the associated findings were in the Security cornerstone

Next Step

- Issue the revision to the FOF SDP in July 2012.