

Public Meeting

April 29, 2010

Forest Glen Room

Bethesda North Marriott

Hotel & Conference Center

(ADAMS ML-101120120)

Housekeeping items

- Safety first
 - Emergency egress from the room
- Restrooms
- Please put your cell phones & pagers on vibrate
- Breaks as identified on the Agenda

Agenda for today

- Opening Remarks—NRC Management
- Background Information on the Topic of Discussion—NRC staff
- Proposed Enhancements Discussion—NRC staff
- **Break**
- Discussion of Proposed Enhancements to the FOF Inspection—All

Agenda- continued

- Continued Discussion of Proposed Enhancements to the FOF Inspection Program—All
- **Break**
- Continued Discussion of Proposed Enhancements to the FOF Inspection Program—All
- Closing comments—NRC Management

Options for participation today

- Category 3 means a time for questions
- Multiple ways to participate today-
 - In-Person
 - “Viewing” using the Internet
 - “Listening” using the Toll-free 800#

Please
use the Microphone when speaking

For those participating remotely...

- Out of respect for other listeners:
 - Please mute your phone (*6)
 - Don't forget to un-mute (*6) to ask your question

For everyone who asks a question...

- Please state your name, organization and your comment or question for the panel



Proposed Enhancements For The Force-on-Force Significance Determination Process

Office of Nuclear Security
and Incident Response

Division of Security Operations

Topics of Discussion

- Statutory Basis for Force-on-Force (FOF) Exercises
- The FOF Inspection Process
- Functional Elements of the Adversary Force
- Functional Elements of the Security Force
- Significance Determination Process
- Industry Proposal
- FOF Program Enhancements

Statutory Basis

Atomic Energy Act of 1954 As Amended,
Subtitle D – Nuclear Security, Section 170D,
Security Evaluations

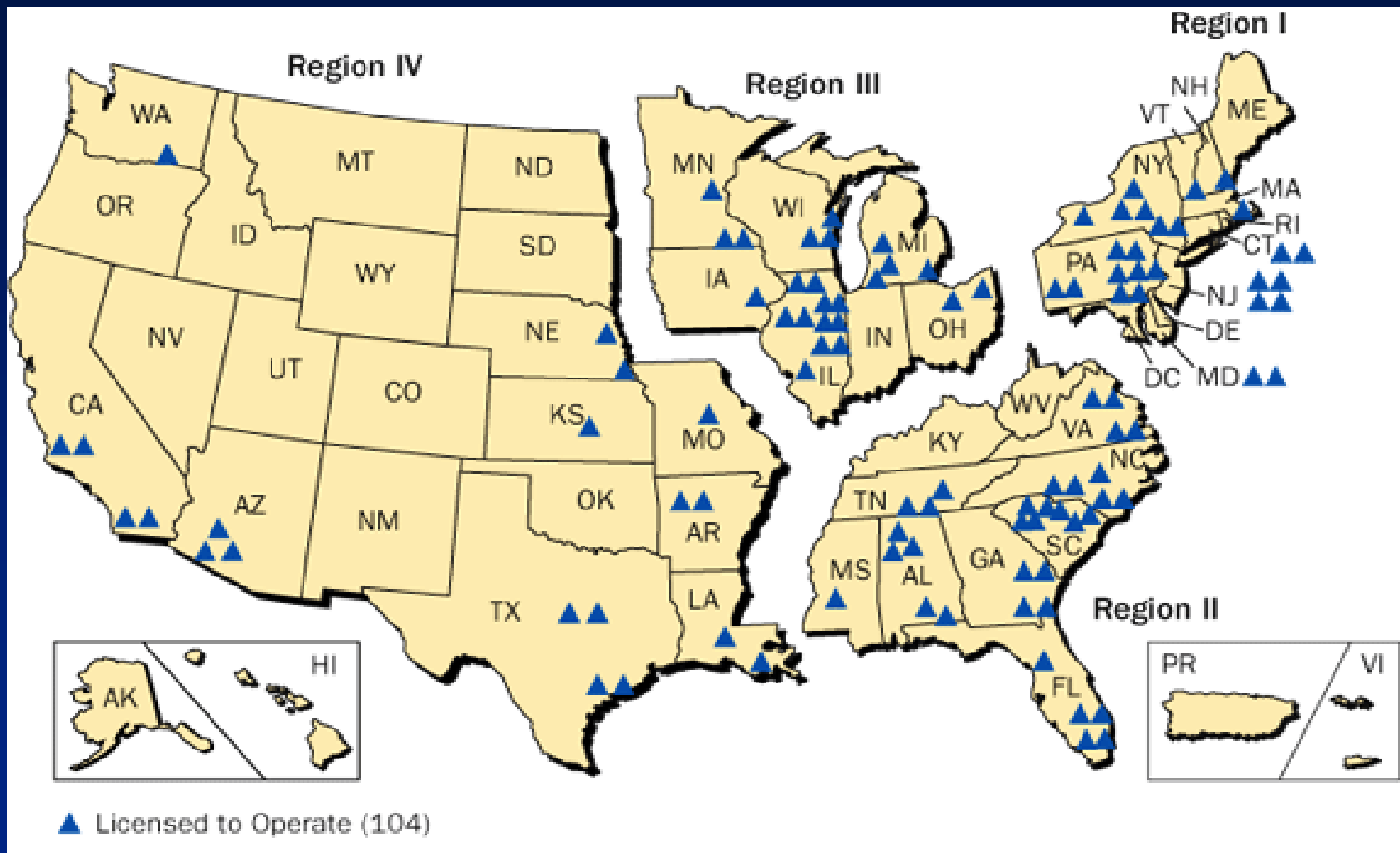
- Mandates that FOF exercises are conducted every three years to assess a licensee's ability to defend against the design basis threat (DBT).
- Exercises must simulate threats to the maximum extent practicable.

Statutory Basis (cont.)

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

FOF Inspection Process

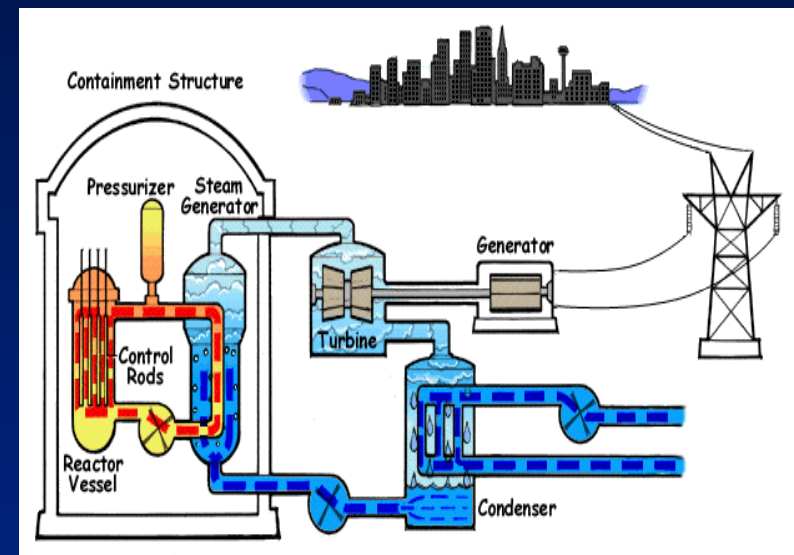
- 10 CFR 73.55 states in part that licensees shall demonstrate the ability to meet the Commission's requirements.
- Current program verifies and assesses the ability of licensee's physical protective strategy to provide high assurance that activities involving special nuclear material do not constitute an unreasonable risk to public health and safety.
- The current program has proven to be highly effective in evaluating licensee's ability to defend against the DBT.



65 Power Reactor Sites

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

10 CFR 73.1 Design Basis Threat

- Determined violent external assault
 - Stealth
 - Deception
 - Diversion
- Capabilities
 - Single group
 - Multiple groups
 - Combination
- Attributes
 - Well trained
 - Active or passive insider
 - Suitable weapons
 - Hand-carried equipment
 - Land and Water vehicles



Composite Adversary Force (CAF)

- A credible, well-trained, consistent mock adversary force is essential in providing licensees challenging threat scenarios.
- Exercise mission narratives, developed in conjunction with CAF directors, describe the tactics and actions adversary elements utilize in the exercise scenarios.



Planning Considerations



Avenues of Approach

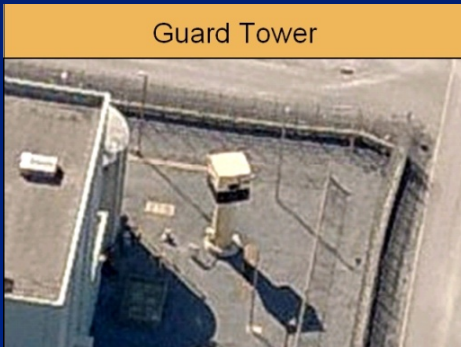
Key Terrain



- *Mission hit time*
- *Weather conditions*
- *Target*
- *Task Organization*
- *Equipment*
- *Concept of Operation*
- *Special Instructions*

Obstacles

Observation and Fields of Fire



Cover and Concealment

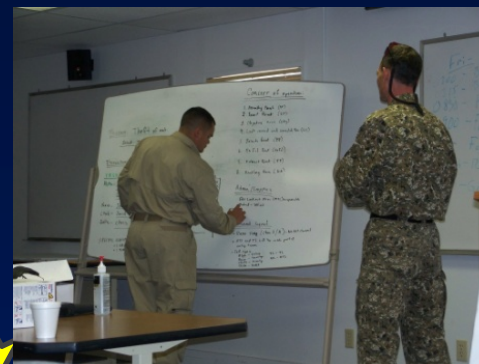


Phased Operation



Exfiltration

Assembly Point



Insertion Point



Objective Area



Interior Tactics

Breach Point



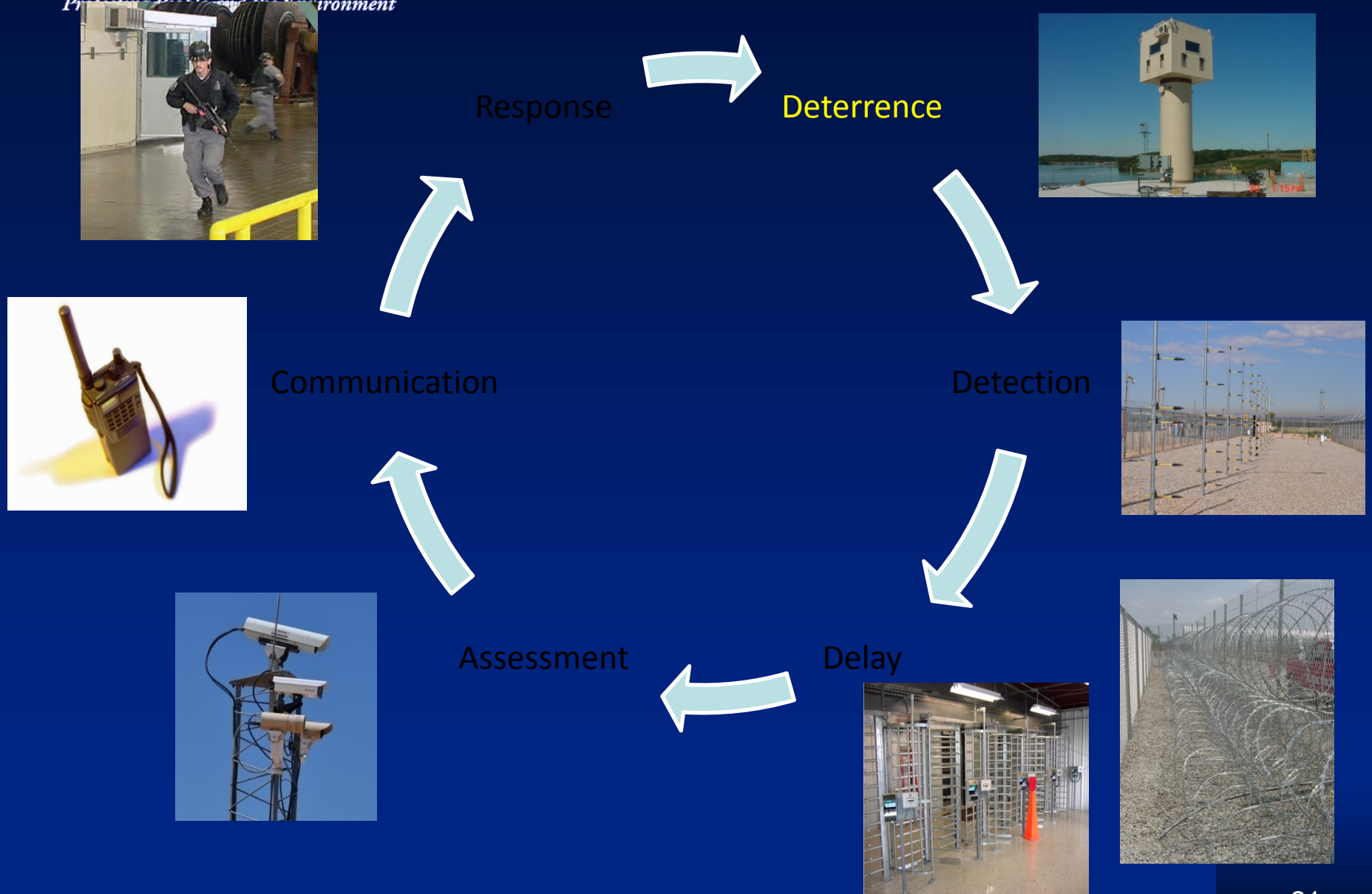
Last Covered & Concealed Position



Nuclear Power Plant Security Zones



Functional Elements of Security



Significance Determination Process

- The purpose of the FOF Significance Determination Process (SDP) is to provide an objective and consistent means of evaluating findings.
- The SDP will be used to evaluate the projected outcome of a simulated attack.

Current SDP Flow Chart

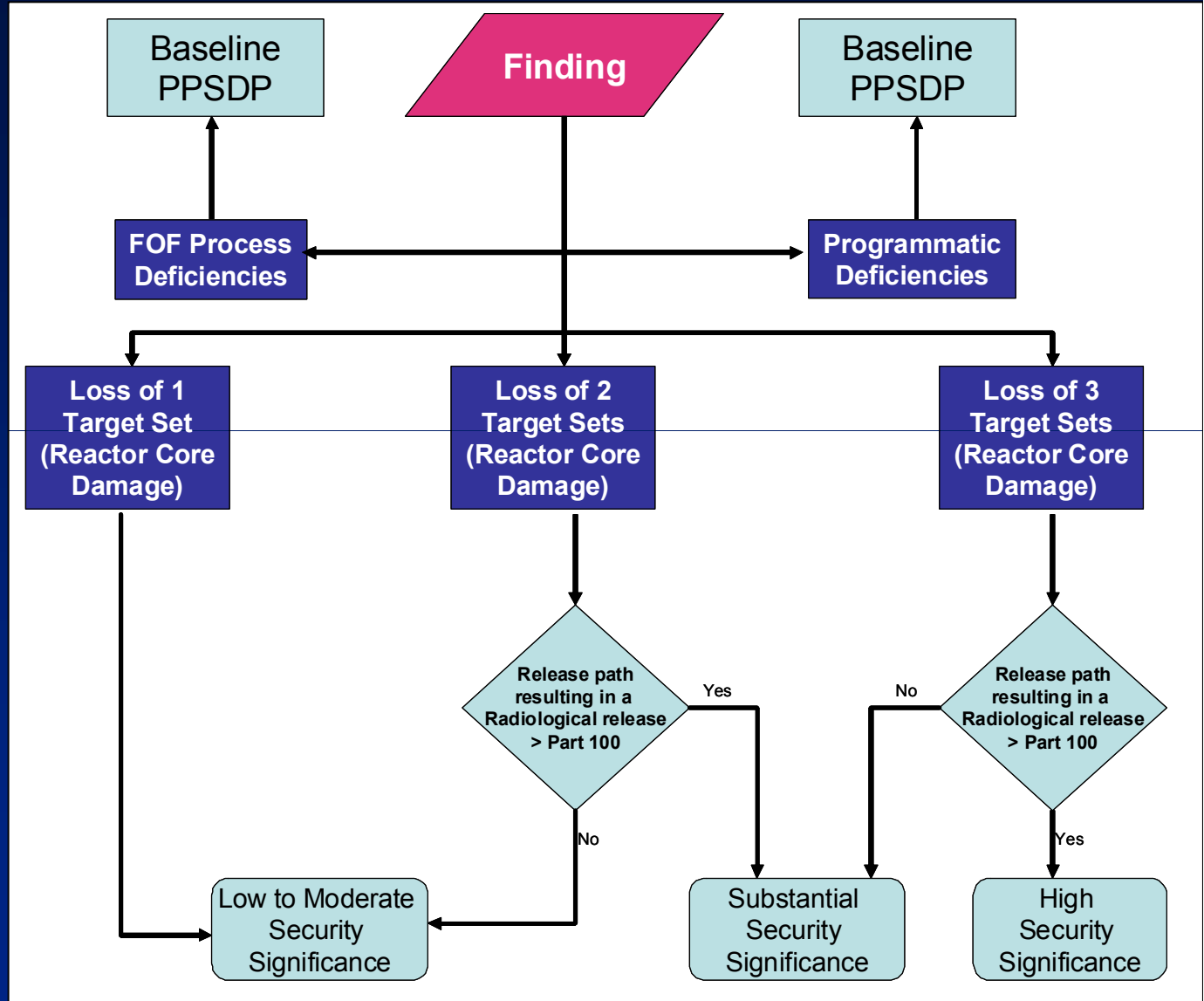


EXHIBIT 2 Security Cornerstone Action Matrix

		Response Bands				
		Licensee Response	Regulatory Response	Degraded Cornerstone	Repetitive Degraded Cornerstone	Unacceptable Performance
X		All assessment inputs (performance indicators and inspection findings) green; cornerstone objectives fully met	One white input; cornerstone objective met with minimal reduction in security performance	Multiple white inputs or 1 yellow input; cornerstone objective met with moderate degradation in security performance	Multiple yellow inputs or 1 red input; cornerstone objective met with longstanding issues or significant degradation in security performance	Overall unacceptable performance; unacceptable margin for security
Regulatory Performance Meeting	None	Branch chief (BC) or division director (DD) meets with licensee	DD or regional administrator (RA) (or designee) meets with senior licensee management	EDO or DEDR meets with senior licensee management	EDO or DEDR meeting with senior licensee management	
Licensee Action	Licensee corrective action	Licensee root cause evaluation and corrective action with NRC oversight	Licensee cumulative root cause evaluation with NRC oversight	Licensee performance improvement plan with NRC oversight		
NRC Inspection	Risk-informed baseline inspection program	Baseline and supplemental Inspection Procedure 95001	Baseline and supplemental Inspection Procedure 95002	Baseline and supplemental Inspection Procedure 95003		
Regulatory Actions ¹	None	Supplemental inspection only	Supplemental inspection only. Plant discussed at AARM if conditions met	10 CFR 2.204 DFI 10 CFR 50.54(f) letter CAL/order Plant Discussion at AARM	Order to modify, suspend, or revoke licensed activities Plant discussion at AARM	
Assessment Letters	BC or DD reviews, signs assessment report (w/inspection plan)	DD reviews, signs assessment report (w/inspection plan)	RA reviews, signs assessment report (w/inspection plan)	RA reviews, signs assessment report (w/inspection plan)		
Annual Assessment Meeting	SRI or BC meets with licensee	BC or DD meets with licensee	RA (or designee) discusses performance with senior licensee management	EDO or DEDR discusses performance with senior licensee management		
External Stakeholders	None	State Governors	State Governors, DHS, Congress	State Governors, DHS, Congress	State Governors, DHS, Congress	
Commission Involvement	None	None	Possible commission meeting if licensee remains for 3 years	Commission meeting with senior licensee management within 6 months	Commission meeting with senior licensee management	

INCREASING SIGNIFICANCE

FOF Program Review

- 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 Force-on-Force (FOF) Inspection Program.
- The review of program elements incorporated lessons learned and industry best practices and also included an independent audit by the NRC Office of Inspector General (2009).

FOF Program Review (cont.)

- Based upon the results of the review, the staff began to consider ways to broaden the data set included in the SDP for the FOF inspection program.
- NSIR staff presented a conceptual overview of the enhancements to the power reactor industry initially at the February 2009 FOF workshop and at subsequent workshops/meetings through the first and second quarter of 2009.

Industry Proposal For Enhancements

The industry proposal provided standards, objectives, and demonstration criteria in three focus areas that can be used in aggregate to provide a significantly improved evaluation methodology to determine response effectiveness.

The focus areas include:

- Security Performance Evaluation Program
- Protective Strategy
- Triennial FOF exercises

Industry Proposal Objective

- Provide a broader evaluation base that focuses on continuous improvement in the effective implementation of the overall security protective strategy through a comprehensive evaluation program.
- The NRC proposed enhancements address this industry objective for the evaluation program by adding protective strategy and training attributes for consideration during the FOF inspection.

Industry Proposal Concepts

- The industry is proposing the merging of elements of the current FOF inspection process with the new Performance Evaluation Program required by 10 CFR 73 Appendix B, in order to provide additional opportunities to assess data across a broader range of activities.
- The NRC is reviewing other regional based Security Baseline Inspection Procedures such as NRC Inspection Procedure 71130.05 “Protective Strategy Evaluation” and considering some merging of inspection elements to assess a broader range of activities.
- However, the NRC proposed enhancements for merging of inspection elements may not be as extensive as those changes proposed by the industry.

NRC Proposed Enhancements

- 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 the licensee's overall security programs which are reviewed during the FOF inspection process.

Proposed Process For Program Enhancements

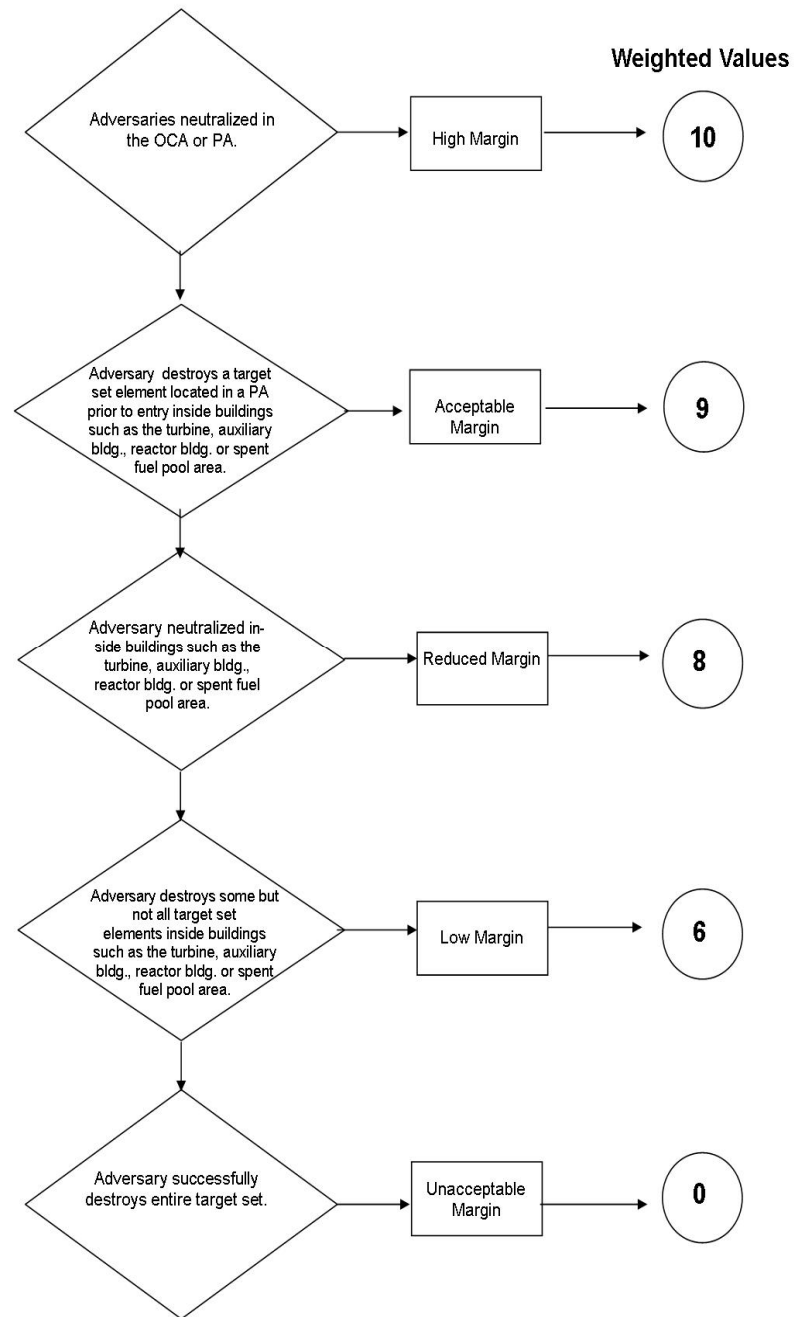
- Licensee performance during the NRC conducted triennial exercises will remain the core program element to be assessed during FOF inspections.
- The enhancement process will evaluate inspection objectives and activities associated with the current program.

Exercise Margin Assessment Tool

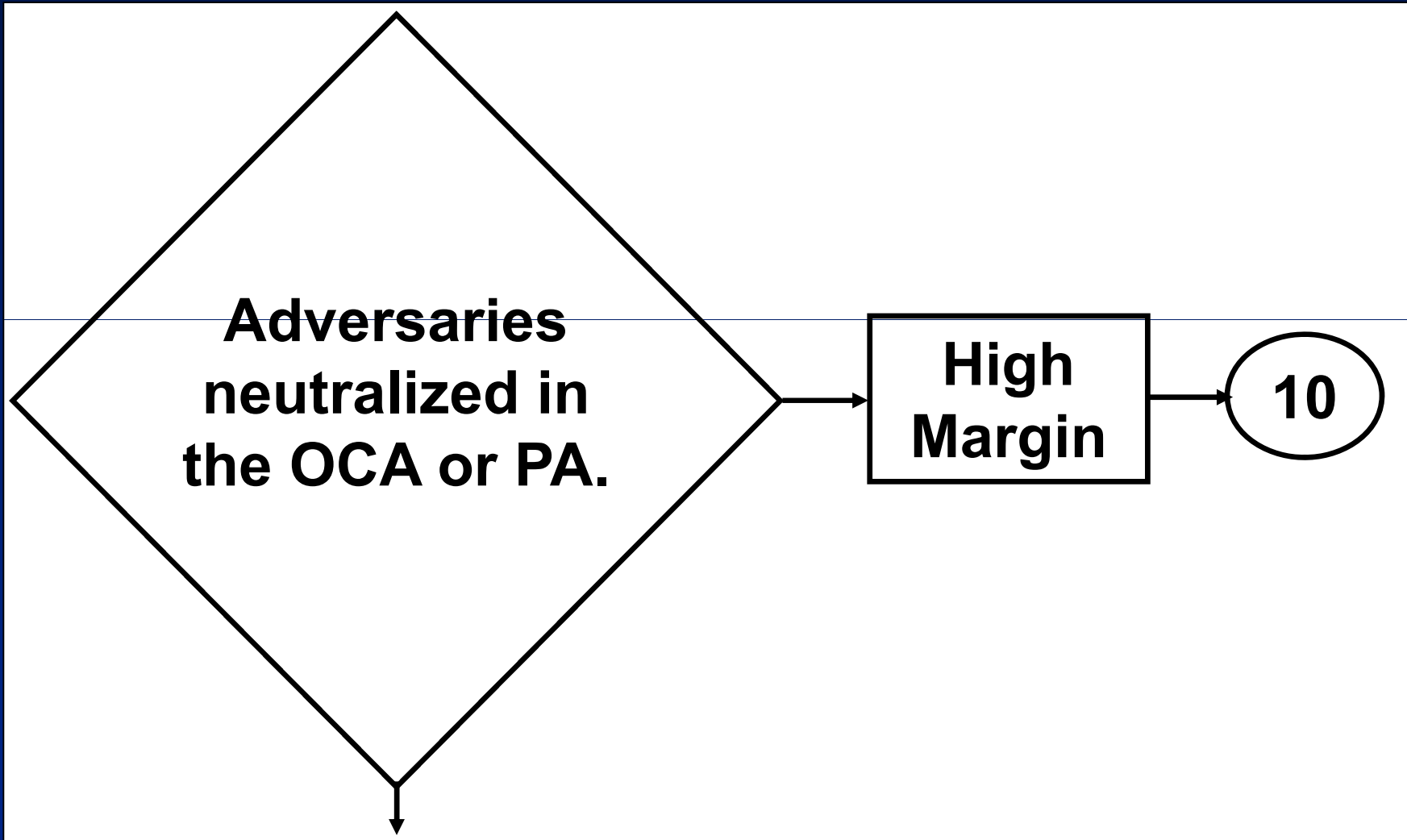
- A newly developed “*Exercise Margin Assessment Tool*” will also be used to make an assessment of the licensee demonstration of their protective strategy during the triennial NRC-evaluated exercises.

Exercise Margin Assessment Tool Flow Chart

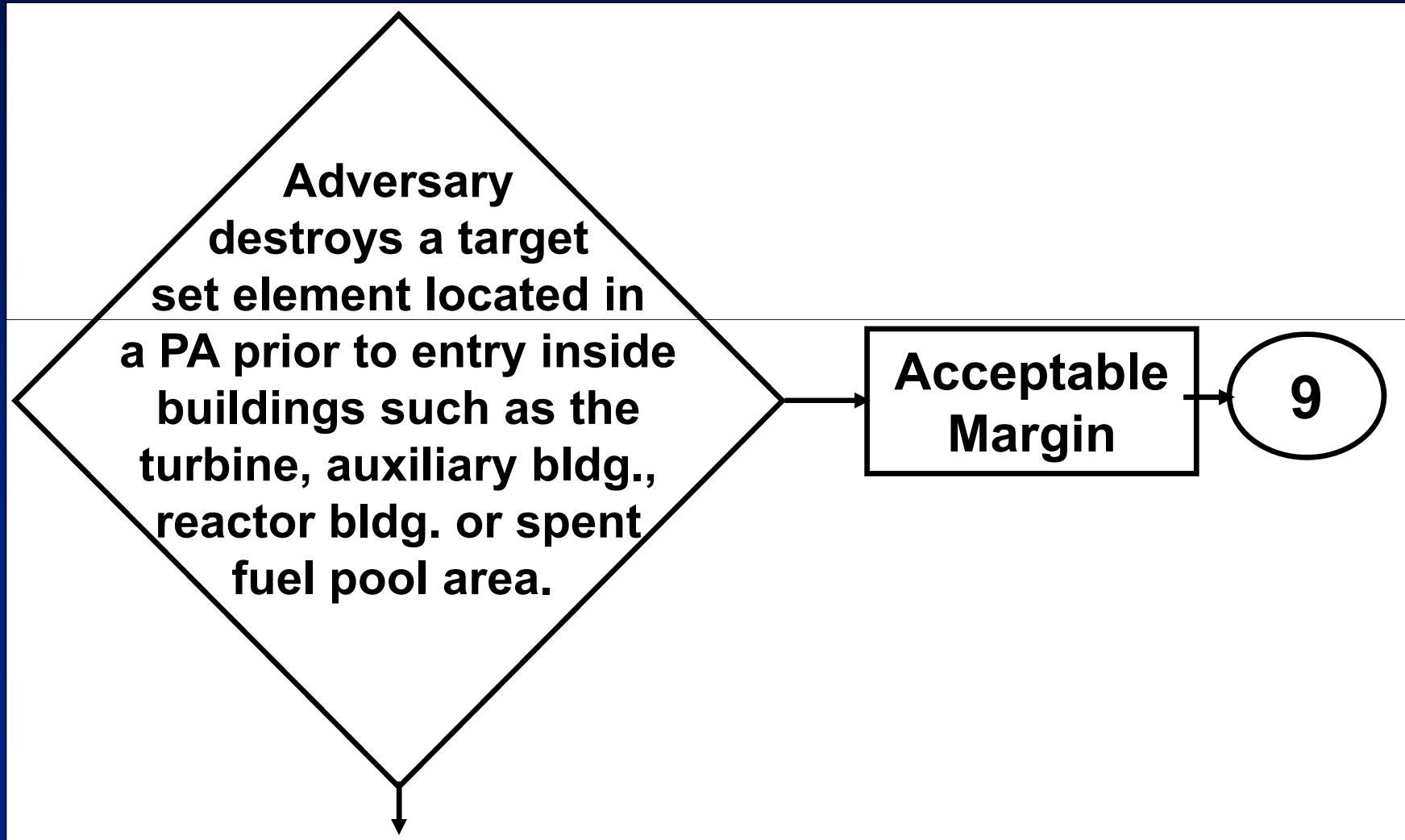
Force on Force Margin Assessment



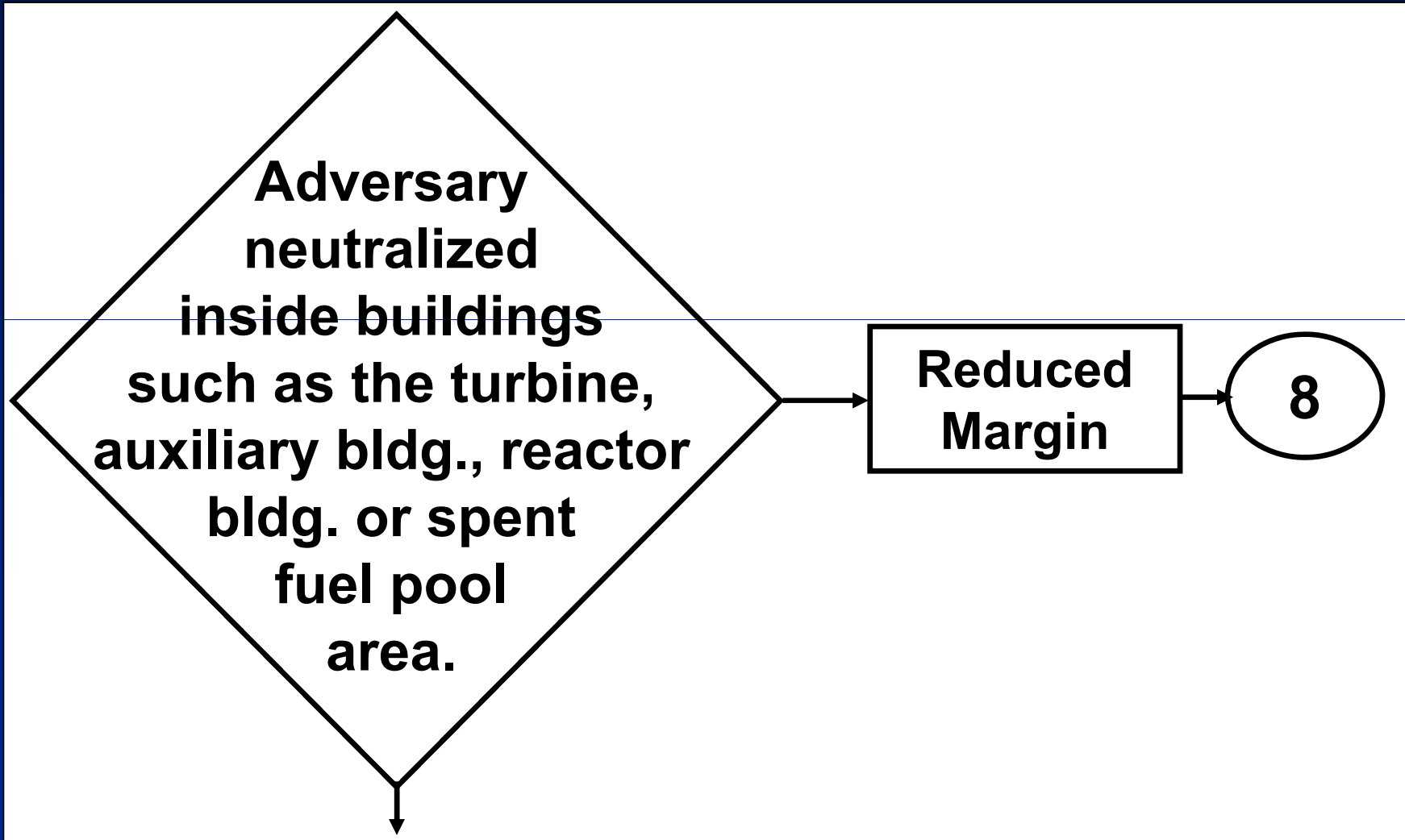
Exercise Margin Assessment Tool Flow Chart



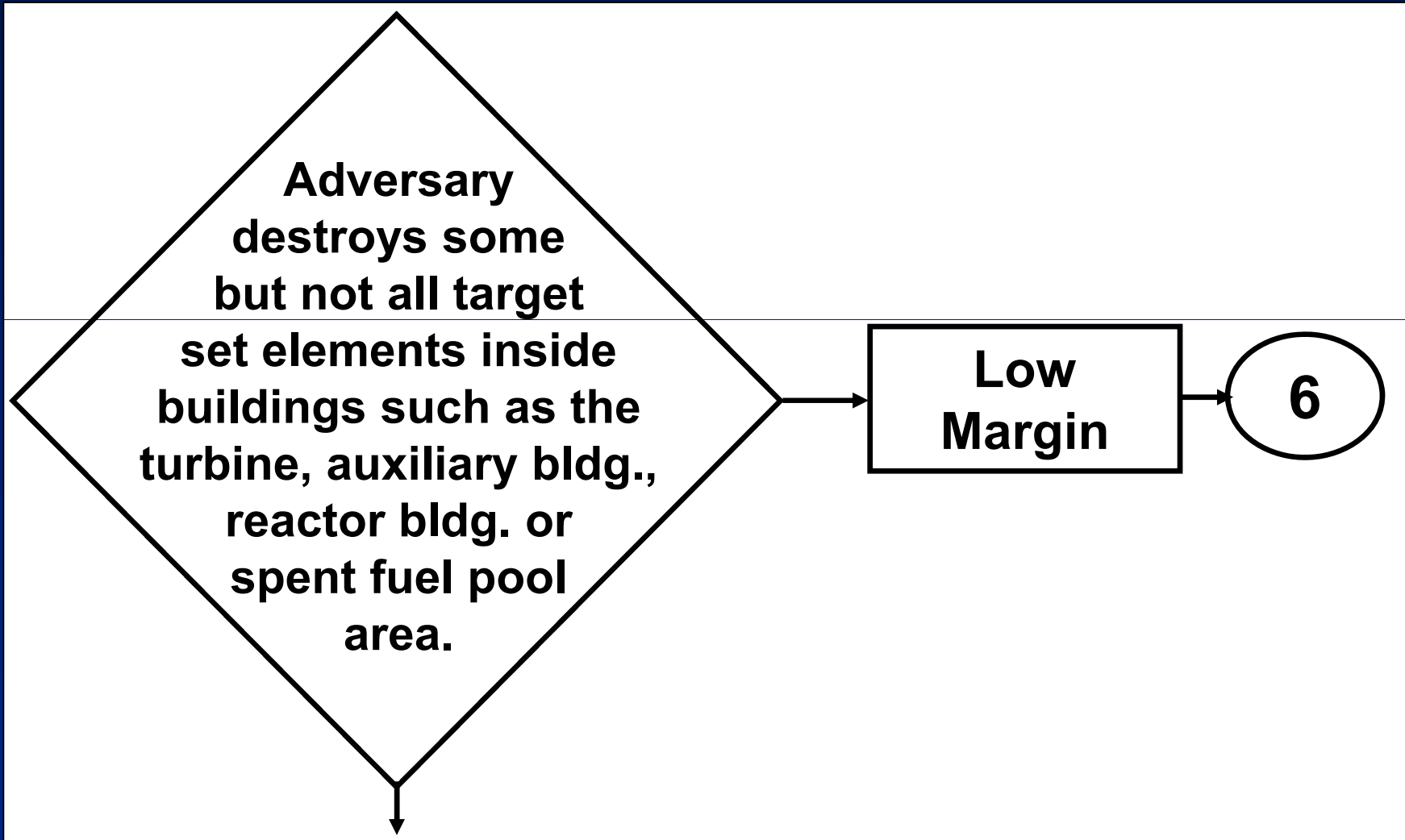
Exercise Margin Assessment Tool Flow Chart



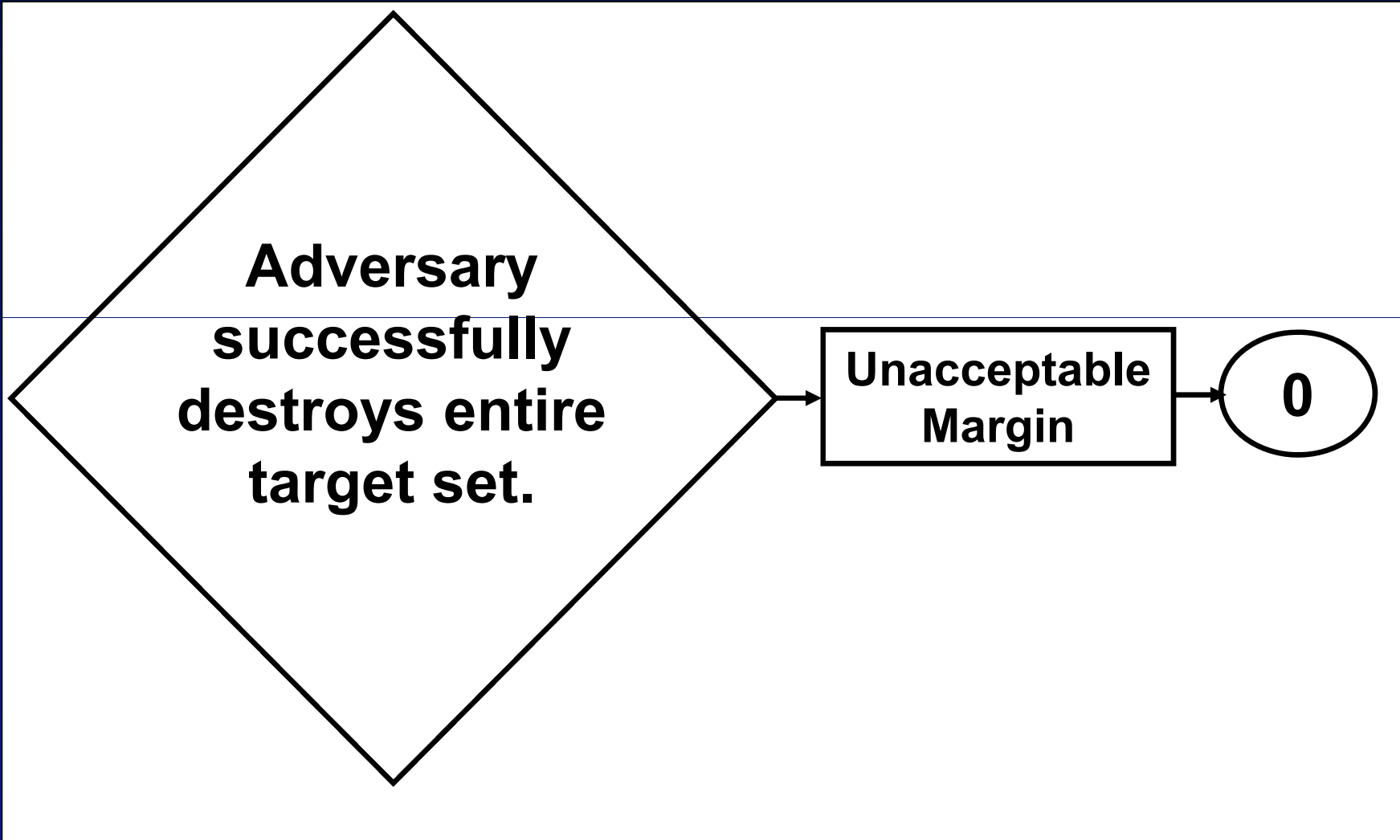
Exercise Margin Assessment Tool Flow Chart



Exercise Margin Assessment Tool Flow Chart



Exercise Margin Assessment Tool Flow Chart



Security Performance Assessment

- NRC is developing specific protective strategy and training attributes such as:
 - Target Set Development,*
 - Preparation-Planning Visit (Controller Training),*
 - Scenario Matrix Development,*
 - Drill Execution (Controller Performance)*

Security Performance Assessment

- The enhancement program would also include an NRC observation and assessment of licensee performance during the conduct of a at least one required annual FOF exercise that is planned and orchestrated by the licensee.

Security Performance Assessment

Target Set Development and Review Process

Area	Annotation	Weight	Assessment Guidelines	Score	Weighted Score
Are all reasonably achievable target sets (TSs) identified?	10 CFR 73.55(b)(4)	15	No new target sets were identified, score=3 New target set(s) were identified, score=0		0
Was the target set agreement signed by the start of the FoF Inspection Planning Week?	IP71130.14/ IP71130.03	12	Agreement Sheet Signed prior to the Planning Week, score=3 Agreement Sheet not Signed, score=0		0
Is the licensee process for giving credit for operator action consistent with the six criteria in NRC Regulatory Guide 5.67?	10 CFR 73.55(b)(4); IP 71130.14	10	All operator actions properly addressed in TSs, score=3 Operator action issues in the TSs, score=0		0
<i>Is the spent fuel pool analysis correct and consistent with existing methodology? Note (1)</i>	10 CFR 50.9	8	<i>Analysis correct and consistent, score=3 Analysis Not correct and consistent, score=0</i>		0
Has all applicable pipe schedule data (diameter, thickness, insulation type, insulation thickness) been provided for target set elements and certified by a licensee representative?	10 CFR 50.9	4	Information provided, score=3 Information not provided, score=0		0
Total Weighted Score:					0
Overall Score:					0.00%

Note (1) The Spent Fuel analysis may or may not be applicable for this portion of the tool.

Security Performance Assessment

Overall assessment and significance determination:

- The results of the inspection will be the summation of the results from the three exercises combined with an overall score from “weighted” values for each of the protective strategy and training attributes.

Overall Assessment

- Exercise Margin Assessment Evaluation.
- Security Assessment Score
- Proposed Outcome Significance
 - No Significance
 - Very Low Significance

Exercise Performance Result ¹	Points Gained from FOF Margin Assessment (No of Points)	Security Assessment Score (Expected = > 80%)	Proposed Outcome
3 High Margin	30	Expected	Non FoF Significance (NFS)
3 High Margin	30	Degraded	NFS
2 High Margin 1 Acceptable	29	Expected	NFS
2 High Margin 1 Acceptable	29	Degraded	NFS
2 High Margin 1 Reduced Margin	28	Expected	NFS
2 High Margin 1 Reduced Margin	28	Degraded	NFS
2 Acceptable Margin 1 High Margin	28	Expected	NFS
2 Acceptable Margin 1 High Margin	28	Degraded	NFS
1 High Margin 1 Acceptable Margin 1 Reduced Margin	27	Expected	NFS
1 High Margin 1 Acceptable Margin 1 Reduced Margin	27	Expected	NFS
3 Acceptable Margin	27	Expected	NFS
3 Acceptable Margin	27	Degraded	NFS
2 High Margin 1 Low Margin	26	Expected	NFS
2 High Margin 1 Low Margin	26	Degraded	NFS
2 Reduced Margin 1 High Margin	26	Expected	NFS
2 Reduced Margin 1 High Margin	26	Degraded	NFS
2 Acceptable Margin 1 Reduced Margin	26	Expected	NFS

¹ If the first two exercises are assessed at a High Margin and the Security Assessment Score is a Pass, then the licensee will have the option of doing a training exercise, and this assessment will not be used.



Overall Assessment

- Exercise Margin Assessment Evaluation.
- Security Assessment Score
- Proposed Outcome Significance
 - No Significance
 - Very Low Significance

Exercise Performance Result ¹	Points Gained from FOF Margin Assessment (No of Points)	Security Assessment Score (Expected = > 80%)	Proposed Outcome
2 Acceptable Margin 1 Reduced Margin	26	Degraded	NFS
1 High Margin 1 Acceptable Margin 1 Low Margin	25	Expected	NFS
1 High Margin 1 Acceptable Margin 1 Low Margin	25	Degraded	NFS
2 Reduced Margin 1 Acceptable Margin	25	Expected	NFS
2 Reduced Margin 1 Acceptable Margin	25	Degraded	NFS
1 High Margin 1 Reduced Margin 1 Low Margin	24	Expected	NFS
3 Reduced Margin	24	Expected	NFS
2 Acceptable Margin 1 Low Margin	24	Expected	NFS
1 High Margin 1 Reduced Margin 1 Low Margin	24	Degraded	Very Low Security Significance
3 Reduced Margin	24	Degraded	Very Low Security Significance
2 Acceptable Margin 1 Low Margin	24	Degraded	Very Low Security Significance
1 Acceptable Margin 1 Reduced Margin 1 Low Margin	23	Expected	Very Low Security Significance
1 Acceptable Margin 1 Reduced Margin 1 Low Margin	23	Degraded	Very Low Security Significance

¹ If the first two exercises are assessed at a High Margin and the Security Assessment Score is 44, then the licensee will have the option of doing a training exercise, and this assessment will not be used.

Overall Assessment

- Exercise Margin Assessment Evaluation.
- Security Assessment Score
- Proposed Outcome Significance
 - Very Low Significance
 - Low to Moderate Significance

Exercise Performance Result ¹	Points Gained from FOF Margin Assessment (No of Points)	Security Assessment Score (Expected = > 80%)	Proposed Outcome
2 Low Margin 1 High Margin	22	Expected	Very Low Security Significance
2 Low Margin 1 High Margin	22	Degraded	Very Low Security Significance
2 Reduced Margin 1 Low Margin	22	Expected	Very Low Security Significance
2 Reduced Margin 1 Low Margin	22	Degraded	Very Low Security Significance
2 Low Margin 1 Acceptable Margin	21	Expected	Very Low Security Significance
2 Low Margin 1 Acceptable Margin	21	Degraded	Very Low Security Significance
2 Low Margin 1 Reduced Margin	20	Expected	Very Low Security Significance
2 Low Margin 1 Reduced Margin	20	Degraded	Very Low Security Significance
2 High Margin 1 Unacceptable Margin	20	Expected	Very Low Security Significance
2 High Margin 1 Unacceptable Margin	20	Degraded	Low to Moderate Security Significance
1 High Margin 1 Acceptable Margin 1 Unacceptable Margin	19	Expected	Low to Moderate Security Significance
1 High Margin 1 Acceptable Margin 1 Unacceptable Margin	19	Degraded	Low to Moderate Security Significance
1 High Margin 1 Reduced Margin 1 Unacceptable Margin	18	Expected	Low to Moderate Security Significance
1 High Margin 1 Reduced Margin 1 Unacceptable Margin	18	Degraded	Low to Moderate Security Significance

¹ If the first two exercises are assessed at a High Margin and the Security Assessment Score is a Pass, then the licensee will have the option of doing a training exercise, and this assessment will not be used.

Overall Assessment

- Exercise Margin Assessment Evaluation.
- Security Assessment Score
- Proposed Outcome Significance
 - Low to Moderate

Exercise Performance Result ¹	Points Gained from FOF Margin Assessment (No of Points)	Security Assessment Score (Expected = > 80%)	Proposed Outcome
2 Acceptable Margin 1 Unacceptable Margin	18	Expected	Low to Moderate Security Significance
2 Acceptable Margin 1 Unacceptable Margin	18	Degraded	Low to Moderate Security Significance
3 Low Margin	18	Expected	Low to Moderate Security Significance
3 Low Margin	18	Degraded	Low to Moderate Security Significance
1 Acceptable Margin 1 Reduced Margin 1 Unacceptable Margin	17	Expected	Low to Moderate Security Significance
1 Acceptable Margin 1 Reduced Margin 1 Unacceptable Margin	17	Degraded	Low to Moderate Security Significance
1 High Margin 1 Low Margin 1 Unacceptable Margin	16	Expected	Low to Moderate Security Significance
1 High Margin 1 Low Margin 1 Unacceptable Margin	16	Degraded	Low to Moderate Security Significance
2 Reduced Margin 1 Unacceptable Margin	16	Expected	Low to Moderate Security Significance
2 Reduced Margin 1 Unacceptable Margin	16	Degraded	Low to Moderate Security Significance
1 Acceptable Margin 1 Low Margin 1 Unacceptable Margin	15	Expected	Low to Moderate Security Significance
1 Acceptable Margin 1 Low Margin 1 Unacceptable Margin	15	Degraded	Low to Moderate Security Significance
1 Reduced Margin 1 Low Margin 1 Unacceptable Margin	14	Expected	Low to Moderate Security Significance

¹ If the first two exercises are assessed at a High Margin and the Security Assessment Score is a Pass, then the licensee will have the option of doing a training exercise, and this assessment will not be used.

Overall Assessment

- Exercise Margin Assessment Evaluation.
- Security Assessment Score
- Proposed Outcome Significance
 - Low to Moderate
 - Substantial Security Significance
 - High Security Significance

Exercise Performance Result ¹	Points Gained from FOF Margin Assessment (No of Points)	Security Assessment Score (Expected = > 80%)	Proposed Outcome
1 Reduced Margin 1 Low Margin 1 Unacceptable Margin	14	Degraded	Low to Moderate Security Significance
2 Low Margin 1 Unacceptable Margin	12	Expected	Low to Moderate Security Significance
2 Low Margin 1 Unacceptable Margin	12	Degraded	Substantial Security Significance
2 Unacceptable Margin 1 High Margin	10	Expected	Substantial Security Significance
2 Unacceptable Margin 1 High Margin	10	Degraded	Substantial Security Significance
2 Unacceptable Margin 1 Acceptable Margin	9	Expected	Substantial Security Significance
2 Unacceptable Margin 1 Acceptable Margin	9	Degraded	Substantial Security Significance
2 Unacceptable Margin 1 Reduced Margin	8	Expected	Substantial Security Significance
2 Unacceptable Margin 1 Reduced Margin	8	Degraded	Substantial Security Significance
2 Unacceptable Margin 1 Low Margin	6	Expected	Substantial Security Significance
2 Unacceptable Margin 1 Low Margin	6	Degraded	Substantial Security Significance
3 Unacceptable Margin	0	Expected	High Security Significance
3 Unacceptable Margin	0	Degraded	High Security Significance

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EXHIBIT 2 Security Cornerstone Action Matrix

		Response Bands				
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Commission Involvement	None	None	Possible commission meeting if licensee remains for 3 years	Commission meeting with senior licensee management within 6 months	Commission meeting with senior licensee management	

INCREASING SIGNIFICANCE

Next Steps

- Evaluate comments from public meeting participants.
- Conduct feasibility assessments in parallel with FOF inspections (2nd Quarter CY 2010) comparing the current FOF SDP to the proposed enhancements for a revised FOF SDP.
- Staff Requirements Memorandum - M100112 - Briefing on Office of Nuclear Security and Incident Response - Programs, Performance, and Future Plans-“ The staff should report back to the Commission on how the proposed enhancements to the FOF physical protection significance determination process (PPSDP) would alter the CY 2009 FOF exercise findings”.
- Inform the Commission on the recommended approach for enhancements to the FOF Inspection Program.
- Consider implementation of the program enhancements during the conduct of the FOF Inspection Program in Calendar Year 2010.