

**POLICY ISSUE**  
**Notation Vote**

June 1, 2016

SECY-16-0073

FOR: The Commissioners

FROM: Victor M. McCree  
Executive Director for Operations

SUBJECT: OPTIONS AND RECOMMENDATIONS FOR THE FORCE-ON-FORCE  
INSPECTION PROGRAM IN RESPONSE TO SRM-SECY-14-0088

PURPOSE:

This paper provides the staff's assessment of the findings made by the Force-on-Force (FOF) Tactics, Techniques, and Procedures (TTP) Working Group (hereafter referred to as the Working Group) and responds to SRM-SECY-14-0088, "Staff Requirements – SECY-14-0088 – Proposed Options to Address Lessons-Learned Review of the NRC's Force-on-Force Inspection Program in Response to Staff Requirements COMGEA/COMWCO-14-0001" (Agencywide Documents Access and Management System (ADAMS) Accession Number ML14353A433). In addition to responding to the Commission's direction in the staff requirements memorandum (SRM), the staff included additional analysis related to FOF within the security baseline inspection program. In developing this analysis, staff considered recommendations and comments from the Nuclear Energy Institute (NEI) and the Union of Concerned Scientists (UCS). The options provided in this paper relate to the security baseline inspection program as a whole and are not limited solely to FOF.

Although the U.S. Nuclear Regulatory Commission (NRC) conducts FOF inspections for all licensees for which a design-basis threat (DBT) applies (i.e., nuclear power reactors and Category I fuel cycle facilities), the focus of this paper is on FOF exercises at nuclear power reactors.

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SUMMARY:

In SRM-SECY-14-0088, the Commission approved the staff's recommendation to establish an NRC Working Group to assess and better integrate knowledge of real-world terrorist training methodologies and attacks into the TTPs used by the NRC composite adversary force (CAF). The Commission also directed the staff to use a formal change control process with stakeholder input before implementing any changes to the TTPs used by the CAF and to ensure that FOF exercises continue to be as realistic as practicable and consistent with the DBT. Finally, the Commission directed the staff to provide periodic updates to the Commission on this activity and to report the Working Group's findings to the Commission in a notation vote paper. The Commission directed that this paper include recommendations regarding the need to continue the Working Group's research and, if the research is complete, any proposed revisions to the TTPs used by the CAF.

The Working Group completed its analysis and provided several findings in its report (ADAMS Accession No. ML16109A191). The Working Group found that the NRC has successfully integrated knowledge of adversary training methodologies and actual attacks with the TTPs used by the CAF during NRC-conducted FOF exercises. The Working Group also found that the TTPs used by the NRC CAF are consistent with the DBT and real-world threat information on terrorist training and attack methodologies. Additionally, the Working Group found that, compared to the NRC-conducted FOF exercises, there are inconsistencies in how licensees control their own FOF drills and exercises, implement challenging exercises, and represent the DBT adversary.

The Working Group found that no changes should be made to the TTPs used by the CAF during NRC-conducted FOF exercises. The Working Group did not use a formal change control process, because it did not implement any changes to the TTPs used by the CAF. The Working Group identified that guidance updates or the development of new guidance could address proficiency issues associated with licensee-conducted FOF drills and exercises. The Working Group also suggested that the NRC should consider developing a formal information-sharing program for FOF inspection operating experience amongst licensees. Finally, the Working Group identified that it should be dissolved since it had achieved its objectives.

The staff analyzed the Working Group's findings. The staff also considered NEI (ADAMS Accession No. ML16125A051) and UCS (ADAMS Accession No. ML16117A382) comments on the draft Working Group report. Finally, the staff considered NEI's comments in a letter to the Commission on Project AIM and a NEI-submitted white paper on performance metrics for security. Based on its analysis of the Working Group's findings and the UCS and NEI comments and recommendations, the staff identified two options for the Commission's consideration: (1) maintain the current program with incremental improvements to guidance and (2) conduct an assessment of the security baseline inspection program, including FOF. The staff recommends the second option. The staff also recommends that the Working Group be dissolved, as it has completed its assigned activities.

BACKGROUND:

The Office of Nuclear Security and Incident Response (NSIR) established the Working Group in February 2015. The Working Group included representatives from NSIR's Division of Security Operations (DSO), NSIR's Division of Security Policy, the Regions, the Office of the General Counsel, the Office of Nuclear Reactor Regulation, the Office of Nuclear Material Safety and

Safeguards, and the Office of Enforcement. NSIR also established an Executive Steering Committee at the Deputy Office Director/Deputy Regional Administrator level to oversee the Working Group's activities. The NSIR Deputy Office Director chaired the Executive Steering Committee.

### Working Group Methodology

To obtain an accurate understanding of real-world terrorist training methodologies and attack TTPs, NSIR/DSO's Intelligence Liaison and Threat Analysis Branch (ILTAB) compared the NRC's DBT against an assessment of intelligence reporting on different terrorist groups. For this analysis, ILTAB selected non-state actors representing foreign terrorist organizations and domestic extremist groups. ILTAB selected these groups because they have all attacked or have a stated intent to attack hardened targets or critical infrastructure targets. ILTAB assessed the training programs and TTPs used by these terrorist groups and documented its findings in a Nuclear Intelligence Digest (NID) titled "Terrorist Training Programs." ILTAB coordinated the development of the NID with the National Counter-Terrorism Center and provided it to the Working Group. In addition, ILTAB briefed the draft NID to cleared stakeholders from NEI, UCS, and industry on February 11, 2016. The NID is classified at the SECRET-National Security Information level and, therefore, is not publicly available. The NID will be shared with the Commission separately.

The NID formed the basis for the Working Group's comparison of terrorist training programs and TTPs with the NRC DBT and the TTPs used by the NRC CAF. In conducting its analysis, the Working Group reviewed the TTPs used in previous NRC-conducted FOF exercises; existing NRC guidance and inspection program documents, including Regulatory Guide (RG) 5.69<sup>1</sup>, "Guidance for the Application of the Radiological Sabotage Design Basis Threat in the Design, Development and Implementation of a Physical Protection Program That Meets [Title 10 of the *Code of Federal Regulations* (10 CFR)] 73.55 Requirements"; and the adversary characteristics document (ACD). This comparison is documented in an SGI product developed by ILTAB and members of the Working Group. The Working Group developed the information on the TTPs used by the CAF from a sample of inspection reports from all four NRC FOF inspection cycles<sup>2</sup>.

### DISCUSSION:

The NRC staff reviewed the Working Group's findings as well as input from external stakeholders in considering issues related to FOF exercises and the security baseline inspection program. In addition to reviewing the Working Group's report, the staff reviewed NEI's letter, "Industry Recommendations for NRC Project AIM 2020 Prioritization and Re-baselining Initiatives" (ADAMS Accession No. ML15279A048), NEI's, "NEI Force-on-Force Metric Guidance White Paper" (ADAMS Accession No. ML15112A790), and input received at the Working Group's three public meetings from both NEI and UCS (ADAMS Accession Nos.

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<sup>1</sup> RG 5.69 contains Safeguards Information (SGI) and is not publicly available.

<sup>2</sup> Each nuclear power reactor site must undergo an NRC FOF inspection at least triennially; thus, an FOF inspection cycle is defined as 3 years. The NRC is currently in the fifth FOF inspection cycle.

ML15154B084, ML15243A089, and ML16014A040). Stakeholder input is summarized in section “NEI and UCS Comments on the Draft Working Group Report” of this paper.

### Working Group Findings

The Working Group found that the NRC has successfully integrated knowledge of adversary training methodologies and actual attacks with the TTPs used by the CAF during NRC-conducted FOF exercises. The working group also found that:

- TTPs used by the CAF are consistent with adversary characteristics set forth in the NRC’s DBT;
- TTPs used by the CAF during NRC-conducted FOF exercises are consistent with real-world terrorists groups;
- the CAF has demonstrated a level of training consistent with real-world terrorists; and
- real-time decisions made in the field during NRC-conducted FOF exercises accurately reflect and implement the DBT and ACD.

The working group found that no changes should be made to the TTPs used by the CAF during NRC-conducted FOF exercises. The Working Group did not use a formal change control process, because it did not implement any changes to the TTPs used by the CAF.

The Working Group reviewed various inspection reports and identified that licensees demonstrate varying levels of proficiency in implementing their own FOF drills and exercises. These drills and exercises are particularly important given that licensees have only one performance indicator under the Security Cornerstone of the Reactor Oversight Process (ROP). This performance indicator is limited to security equipment and does not address security performance. Therefore, lacking input from any security performance indicators other than the security equipment performance indicator, licensee-conducted FOF drills and exercises enable licensees to optimize their security programs and assess compliance with NRC requirements.

The Working Group concluded that improvements in the way that licensees conduct their own FOF drills and exercises would improve licensee ability to evaluate the effectiveness of site protective strategies and improve the efficiency of the FOF program. The Working Group suggested that the development of improved guidance and a formal information-sharing program could improve the efficiency of NRC-conducted FOF exercises by reducing unplanned exercise time-outs, disputed exercise scenarios, and licensee challenges in demonstrating defense-in-depth strategies.

The Working Group suggested two actions<sup>3</sup> to improve licensee proficiency in conducting their own FOF drills and exercises.

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<sup>3</sup> The Working Group considered each guidance topic to be a separate finding in its report. Those findings have been consolidated in this paper for clarity.

### *1. Develop Additional Guidance*

The Working Group concluded that the varying levels of proficiency in the way in which licensees implement their own FOF drills and exercises result in inconsistencies between NRC-conducted FOF exercises and licensee FOF drills and exercises. To address these inconsistencies, the Working Group identified a need for new or improved guidance in several topical areas.

### *2. Develop a Formal Information-Sharing Program for Force-on-Force Operating Experience*

The Working Group determined in its analysis that licensees are often unaware of the range of TTPs used during NRC-conducted FOF exercises or TTPs used by other site's adversary forces during licensee conducted drills and exercises because the NRC has not effectively shared this information with licensees. As such, the Working Group found that the NRC and its licensees could benefit from NRC-development of a formal program to track and trend the results of NRC-conducted FOF exercises, including disputed exercise scenarios that are escalated to NRC management. A formal information-sharing program may also include the information that is shared during FOF Executive Lessons Learned meetings. The Working Group suggested that information related to TTPs used in NRC-conducted FOF exercises be shared with the industry on a regular basis as part of this program. However, site-specific licensee outcomes and information would not be shared.

### Review of Working Group Findings and Resultant Staff Recommendation

The Working Group finalized its report in May 2016. In its report, the Working Group stated that it had completed its activities and recommended that any additional work associated with the Working Group's activities be undertaken by the relevant program office and that the Working Group be terminated. The Executive Steering Committee for the Working Group met on May 9, 2016. The Steering Committee discussed the Working Group's findings and other aspects of the FOF program and approved the following:

- (1) Accept the Working Group's report as final.
- (2) Recommend to the Commission that the Working Group be terminated.
- (3) Conduct any additional work associated with the Working Group's findings through the relevant program offices.
- (4) Complete this SECY paper on the Working Group's findings in accordance with normal agency processes.
- (5) Maintain the Executive Steering Committee to help NSIR oversee and direct any follow-on activities associated with this paper.

The staff agrees with the Executive Steering Committee's direction and recommends that the Commission approve terminating the Working Group. The staff will address the Working Group's findings and any follow-on activities through the program offices without further input from the Working Group. The relevant program offices have the necessary expertise to address the Working Group's findings and any follow-on activities approved by the Commission.

### The Nuclear Energy Institute and Union of Concerned Scientists Comments on the Draft Working Group Report

NEI and UCS provided comments on the draft Working Group report via letter (ADAMS Accession Nos. ML16125A051 and ML16117A382). In general, UCS was supportive of the

Working Group's findings and recommendations, while NEI did not believe any new or enhanced guidance was necessary. Neither NEI nor UCS provided any new recommendations in their comments. The staff considered the comments from both NEI and UCS in developing this paper.

In addition to the UCS and NEI comments on the draft Working Group report, NEI provided several specific recommendations related to the FOF inspection program in various other submittals to the NRC staff. By letter dated February 24, 2015 (ADAMS Accession No. ML15112A790), NEI provided a white paper to the NRC staff regarding the potential use of performance metrics by power reactor licensees to reduce the number of exercises conducted during the NRC's triennial FOF inspections. As proposed by NEI, these performance metrics would not be viewed as performance indicators under the ROP and would not be tied to licensees' performance under the Security Cornerstone of the ROP. However, these performance metrics could serve to identify and potentially adjust the level of inspection oversight that a licensee would receive based on achievement of the performance metrics. NEI also indicated its intent that, while the performance metrics would not be inspected, the records of a licensee's performance against the proposed metrics would be available for NRC review during baseline security inspections. In NEI's letter transmitting its Project AIM 2020 recommendations (ADAMS Accession No. ML15279A048), NEI recommended that the NRC use industry MILES equipment rather than NRC-provided equipment. NEI also recommended that the NRC replace NRC-conducted FOF exercises with an NRC evaluation of licensee-conducted FOF exercises.

The staff has identified several initial concerns with these recommendations. Specifically, as described by NEI, the performance metrics concept is not consistent with the ROP. Additionally, the staff is concerned that eliminating NRC-conducted FOF exercises may adversely affect the NRC's ability to evaluate licensees' protective strategies. The proposal would also need to be analyzed in light of the statutory language in Section 651 of the Energy Policy Act of 2005. The staff is seeking additional feedback from NEI to better understand these recommendations.

### Additional Considerations

#### *Security Regulatory Guidance*

Some external stakeholders believe that current TTPs used by the CAF in NRC-conducted FOF exercises either exceed the DBT or are unrealistic. The staff believes that stakeholder concerns with CAF TTPs stem from the lack of specific guidance on the implementation of the FOF program. Stakeholders have not provided any specific examples of TTPs that exceed the DBT or recommendations on how current TTPs should be modified. The NRC staff recently issued a proposed update to RG 5.69 to enhance the clarity and consistency of the NRC's security regulatory guidance. Many stakeholders expressed concerns with how the revisions to the guidance would be implemented in NRC-conducted FOF exercises. As a result of comments received from stakeholders, the staff has determined that it will no longer pursue some of the enhancements proposed in the draft RG. For the remaining changes, the staff continues to engage stakeholders during the finalization of RG 5.69.

The NRC uses RG 5.69 to provide specific guidance for licensees to use in implementing physical protection systems and protective strategies to protect their sites against the radiological sabotage DBT. RG 5.69 is not intended to provide guidance on how FOF exercises

are conducted. However, RG 5.69 currently includes information related to the FOF program. Including information on the FOF program has created some confusion regarding the purpose of this RG. To address this confusion, staff is considering removing FOF references from RG 5.69 and exploring the option of preparing a specific guidance document for the conduct of FOF exercises. This guidance document would be one means by which the staff could address any concerns with the TTPs used by the CAF and ensure that FOF scenarios, the TTPs used by the CAF, and exercise control measures ensure a credible and realistic FOF exercise. For example, while specific TTPs may be safely controllable and within the DBT, implementation details may make TTPs less realistic or more difficult to simulate. The staff intends to seek stakeholder feedback to assess interest in developing a separate guidance document on FOF.

#### *Recently Implemented Improvements to the Force-on-Force Program*

Since 2010, the NRC has coordinated with industry to gather and assess Executive Lessons Learned on FOF inspections. In 2014, the staff conducted a dedicated lessons-learned review of the FOF inspection program to address the Commission's direction in SRM-COMGEA/COMWCO-14-0001, "Proposed Initiative to Conduct a Lessons-Learned Review of the NRC's Force-on-Force Inspection Program" (ADAMS Accession No. ML14043A063). The results of this review were provided to the Commission in SECY-14-0088. Based on these reviews, the staff has implemented several improvements to the FOF inspection program. Recent improvements to the NRC FOF inspections have created a more balanced and efficient program by reducing the number of NRC-conducted FOF exercises from three exercises per inspection to two and by enhancing the in-office planning portion of the inspection preparation and scenario development process to reduce the time spent on-site during the preparation week of the inspection. The staff believes that these improvements ensure that NRC-conducted FOF exercises are as realistic as practicable and remain within the DBT. The Working Group's findings help support this assessment.

While these efforts have improved the FOF portion of the security baseline inspection program, the staff has not conducted an assessment of the inspection program as a whole. The staff believes that the Working Group's findings and UCS's and NEI's comments support the need for a broader consideration of security guidance, inspection, and oversight activities. Additionally, the staff believes that continued outreach with external stakeholders is needed to ensure that all perspectives are addressed during guidance development and any assessments of the NRC's inspection and oversight program.

#### Options

This section describes two options regarding the security baseline inspection program. The first option would maintain the current baseline security inspection program, including FOF, with incremental improvements consistent with the existing regulatory framework. Under the second option, the staff would conduct an assessment of the security inspection program to identify efficiencies and make improvements to the program. In addition to these two options, the staff also recommends terminating the Working Group.

#### *Option 1 – Maintain the current program with incremental improvements to guidance.*

Under this option, the staff would maintain the current baseline security inspection program and continue limited activities related to the Working Group's findings. The staff would work with the industry to identify specific changes needed such as guidance changes or other changes as

appropriate. The advantage of this option is that maintaining the FOF inspection program in its current form would maintain program stability. Recent improvements have created a more efficient program. Changes in areas of the Working Group's findings would further strengthen program consistency and implementation. The disadvantage of this option is that it would provide only incremental improvements to efficiency through the normal self-assessment process.

*Option 2 – Assess the security baseline inspection program, including FOF.*

Under this option, the staff would conduct an assessment of the security inspection program, including FOF. The goal of this assessment would be to identify potential efficiencies and improvements while maintaining the robustness of the security inspection program. The staff would prepare a notation vote paper, which would include recommendations on improvements to the security inspection program. This assessment would go beyond the annual ROP self-assessment and would potentially include: (1) consideration of realigning the security baseline inspection program to include the potential use of performance indicators; (2) consideration of streamlining the FOF inspection program to reduce the amount of time that inspectors spend on site; and (3) recommendations for leveraging these efficiencies to provide opportunities for working with licensees on an integrated response by site security and law enforcement.

Should the Commission approve this option, the staff would provide a paper to the Commission 18 months after the Commission's SRM is issued. This paper would provide the results of the staff assessment and identify any recommendations for changes to the security baseline inspection program. The staff would consider the Working Group's findings as a part of its assessment. The advantage of this option is that it would allow the staff to expand its focus by conducting a thorough review of the security inspection program to identify enhancements and efficiencies in the NRC's security inspection and oversight program. Stakeholders would have the opportunity to participate in the review process. The disadvantage of this option is that it would require both NRC staff and industry effort and might result in only limited improvements to the security inspection program. Additionally, the development of some guidance could be further delayed.

RECOMMENDATION:

The NRC staff recommends that the Commission:

1. Approve Option 2, "Conduct an assessment of the security baseline inspection program, including FOF."
2. Terminate the Working Group. All follow-on activities from the Working Group and the direction received from the Commission would be conducted by the program offices.

RESOURCES:

Resources to support the options in this paper are included in the current budget for fiscal years (FY) 2016 and FY 2017 Current Estimate. No additional resources beyond those already budgeted will be required to support the options. Resources for FY 2018 and beyond will be addressed using the agency's Planning, Budgeting, and Performance Management process. Resource requirements for the two proposed options fall under the Operating Reactors Business Line.



The Commissioners

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COORDINATION:

The Office of the General Counsel has reviewed this paper and has no legal objection.  
The Office of the Chief Financial Officer has reviewed the paper and has no objection.

**/RA/**

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COORDINATION:

The Office of the General Counsel has reviewed this paper and has no legal objection.  
 The Office of the Chief Financial Officer has reviewed the paper and has no objection.

**/RA/**

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**ADAMS Accession No.: ML16109A200**

**SRM-S14-0088-2**

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