

## Force-on-Force Security Inspections

*Security is a priority for the NRC - it is one of our strategic goals. Force-on-Force (FOF) inspections are an essential part of NRC's oversight of nuclear power plant security programs. One of the NRC's responses to September 11<sup>th</sup> was to upgrade the security forces at nuclear facilities around the country. To test the adequacy of the security forces, the NRC implemented a more robust FOF inspection program.*

### Background

The Nuclear Regulatory Commission (NRC) has carried out force-on-force (FOF) inspections regularly at commercial operating nuclear power plants since 1991 as part of its comprehensive security program. They are an important way to evaluate and improve the effectiveness of plant security programs to prevent radiological sabotage as required by NRC regulations (10 CFR Part 73).



FOF inspections assess a nuclear plant's physical protection measures to defend against the "design basis threat (DBT)." The DBT characterizes the adversary against which plant owners must design physical protection systems and response strategies. The NRC periodically assesses the adequacy of the DBT and makes revisions as necessary.

### Before September 11, 2001

Before Sept. 11, 2001, NRC conducted FOF inspections about once every eight years at all 65 U.S. nuclear plant sites, in addition to the baseline security inspection program. These inspections were conducted at about eight sites per year. Immediately after the Sept. 11 attacks, nuclear plants went to their highest level of security. FOF inspections were temporarily halted at that time because they would have distracted plant security forces. Instead, NRC security staff focused on strengthening and monitoring security improvements that nuclear power plants made in response to NRC advisories.

The NRC's redesigned FOF program was refined and enhanced through more than two years of testing at almost two-thirds of the nuclear power plants in the country. [The details of the FOF inspections are Safeguards Information, which is protected by law from public disclosure under the Atomic Energy Act.] An expanded table-top drill program was conducted during 2002 and an expanded FOF exercise program was carried out during 2003.

## Changes Since 9/11

After Sept. 11, 2001, the NRC worked to strengthen its security programs while it reevaluated its DBT and improved its FOF inspections. In one of its key decisions, the Commission increased the frequency of FOF inspections starting in the fall of 2004. The NRC now evaluates each plant site once every three years. All licensees conduct tactical security exercises in the intervening years.

In February 2004, the NRC began a transitional FOF program that incorporated lessons learned from the previous two years. It also used the characteristics of a supplemented DBT that had expanded adversary force capabilities. In accordance with an NRC Order issued in April 2003, all nuclear power plant operators had to be able to defend their plants against the supplemental DBT by Oct. 29, 2004. All plants met this requirement.

In November 2004, the NRC implemented its redesigned, full-scale FOF program, incorporating experience and lessons learned since Sept. 11, 2001. The current program reflects the supplemented DBT and greatly increases the level of realism, while ensuring the safety of plant employees and the public. NRC gives plant operators some advance notice of FOF inspections for safety and logistical purposes and to provide adequate planning time for coordination of the efforts of two sets of security officers — one for maintaining actual security, another for participating in the inspection. In addition, arrangements must be made for a group of individuals who will control and monitor the exercise. A key goal is to balance personnel safety, while maintaining actual plant security during exercises that are as realistic as possible.



In preparation for FOF exercises, information from table-top drills, inspections, and security plan reviews is used to design a number of commando-style attacks seeking to probe for potential deficiencies in the protective strategy. The aim of the site's defenders is to keep the attackers from destroying or damaging key equipment. Any potentially significant deficiencies in the protective strategy identified during FOF inspections are promptly addressed.

The NRC inspection teams that conduct FOF inspections include active duty U.S. Special Operations Forces Troops. These individuals participate in the inspections by providing expert technical advice to the inspection team, assisting the NRC inspectors in evaluating site security forces and systems, and providing an independent evaluation of Composite Adversary Force (CAF) performance.

### ***NRC's FOF security inspections realistically test security forces' capability and security programs at nuclear power plants.***

- The NRC requires nuclear power plant operators to defend the plant against attackers seeking to cause damage to the reactor core or spent fuel, resulting in a release of radiation.
- During each FOF inspection, a number of commando-style attack exercises are carried out against a plant's security forces, looking for deficiencies in the plant operator's protective strategy.
- Any significant problems are promptly addressed.
- Each nuclear power plant site will have at least one FOF inspection every three years.
- The NRC and plant operator ensure the safety of plant employees and the security of the plant during FOF exercises.

## **CAF**

A credible, well-trained, and consistent mock adversary force is vital to the NRC's FOF program. Prior to Sept. 11, 2001, power plant operators had assembled adversary teams that frequently included security officers from their own sites, other licensees, and state police tactical team members. However, using these diverse sources caused inconsistencies in the capabilities of the adversary team.

To improve the program, the NRC worked with the nuclear industry to develop a CAF that is trained to standards issued by the Commission. NRC initially considered using NRC staff, other federal personnel, and industry personnel for ensuring a credible, well-trained, and consistent adversary force, but decided to issue adversary force standards and guidelines for the industry to implement. The new adversary force has been used for all FOF exercises conducted after October 2004. The CAF is a significant improvement in ability, consistency, and effectiveness over the previous adversary forces.

The CAF is evaluated using rigorous NRC performance standards issued in April 2004. The standards cover:

- knowledge, skills, abilities, performance and training of team members;
- individual and team tactics, tactical communications, and operational planning,
- firearms knowledge and proficiency;
- exercise simulation equipment, physical security systems and specialized equipment; and
- medical qualifications, physical fitness and specific minimum qualifications.

The CAF is managed by a company (G4S) that provides security for a number of U.S. nuclear power plants and is, therefore, well-versed in the security operations of power plants. The NRC recognizes there may be a perceived conflict of interest where the management company cannot adequately test either the CAF or the plant security force. The NRC requires a clear separation of functions between the CAF and plant security force to ensure an independent, reliable, and credible mock adversary force. In addition, no member of the CAF may participate in an exercise at his or her home site.

It is important to emphasize that the NRC, not CAF, designs, runs, and evaluates the results of the FOF inspections. Because the CAF does not establish the exercise objectives, boundaries, or timelines, and because the CAF performance is subject to continual observation by the NRC and the military members of the inspection team, the agency controls the exercise. If the industry cannot maintain an adequate and objective mock adversary force that meets the NRC's standards, the NRC will take the necessary actions to ensure the effectiveness of the FOF program.

## **NRC's Overall Security Program**

FOF inspections are an essential part of NRC's oversight of plant owners' security programs and their compliance with NRC security requirements. The agency continues to evaluate and strengthen its overall security program in response to changes in the threat environment, technological advancements, and lessons learned. As a result, substantial improvements to nuclear plant security have been made to protect against terrorism and radiological sabotage including:

- A well-trained security force,
- Robust physical barriers,

- Intrusion detection systems,
- Surveillance systems, and
- Plant access controls.

Together, these efforts help make nuclear power plants among the best protected private sector facilities in the nation.

Additional information is available on NRC's Web site at [www.nrc.gov/security.html](http://www.nrc.gov/security.html). Other security backgrounders include:

- Dirty Bombs
- Nuclear Security Enhancements Since 9/11
- Safety and Security Improvements at Nuclear Plants

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