



**RIC 2010**  
**Enhancements to the NRC's**  
**Force-on-Force Inspection Program**

Edwin Lyman  
Union of Concerned Scientists  
March 11, 2010



# FOF Inspections and Public Confidence

- Unlike safety inspections, there is little public information about the results of security inspections
  - Inspection report cover letters and preliminary color findings (either green or “greater than green”)
  - Annual compilation of security inspection findings
- Publicly released Force-on-Force (FOF) inspection findings provide little insight
  - Even the significance determination process (SDP) used to assign colors was not publicly available until recently
- In order for the public to have confidence in nuclear plant protection, what little information that is released must be as clear as possible without compromising security
  - Once vulnerabilities have been corrected, FOF results for individual plants can be safely disclosed, as they were in the past



## Farley OSRE SDP report, 8/17/2001

- “Based on the above, the NRC concluded that your performance during the force-on-force exercises resulted in a failure of a limited portion of your protective strategy and the loss of a complete target set during one exercise.”



## FOF Results in the Public Domain

- It has been publicly disclosed that about 50% of plant sites were unable to prevent significant core damage during the Operational Safeguards Evaluation (OSRE) Program in the 1990s
- The FOF failure rate appears to be significantly lower under the post-9/11 inspection regime, even though the Design Basis Threat (DBT) is more challenging
  - According to the 2008 report to Congress, no more than 5% of sites were unable to prevent target set destruction or damage from November 2004 to December 2008 (10% in CY 2008)
- Difficult for the public to discern whether this is due to a genuine increase in plant security or a change in FOF conduct and assessment



## Inspection Issues

- For public confidence in the FOF program, assurances are needed that the tests are
  - Challenging (maximum DBT capabilities are utilized)
  - Free of cheating
  - Accurate representations of the everyday security posture of licensees
- Issues of concern
  - Adequacy of controllers
  - Insider assistance appropriately accounted for (both passive and active)
  - Role of armed security officers (as opposed to armed responders) in contingency response



## The Need to Assess Margin

- The FOF failure rate does not communicate the full dimension of the security posture at plant sites: margin to failure is also important
  - Indication of capability of licensees to protect against beyond-DBT attacks
  - “It’s possible we are not in the right place ... we have to be able to handle things that are either beyond what we said is the DBT or to make up for some uncertainty in the process of determining it ... (Jim Wiggins, NSIR, Commission briefing, January 12, 2010)



## Staff Proposal on Enhancements

- The staff proposes a revised PPSDP that incorporates both a “margin assessment” and an assessment of the licensee’s ongoing protective strategy and training programs
- The results of the enhanced FOF assessment would then be combined with other assessments to generate a single numerical score



## Staff Proposal

- Proposal would give greater weight to protective strategies with more defense-in-depth and could lead to emphasis on denial-of-access rather than denial-of-task
  - Enhanced owner-controlled area protection
- Revised SDP would no longer give credit for avoiding a Part 100 release
  - Any core damage event could lead to containment failure or bypass
- Problem: licensee can fail one out of three FOF exercises and still receive a “green” finding (very low security significance)



## Industry Proposal

- In the 1990s, faced with the embarrassing results of the OSRE program, the industry proposed replacing NRC-run FOF exercises (which were not explicitly required by regulation) with a licensee-run self-assessment program
- Now, the industry is apparently proposing something similar (using emergency preparedness as a model)
- This should be again rejected: licensee-run dog-and-pony shows cannot provide the same degree of public confidence as NRC-run FOF inspections



## UCS View

- Margin assessment will provide public with insight into degree of security defense-in-depth
- Assessment of ongoing security programs is also useful, but FOF inspection results remain the best metrics of successful security programs
- NRC should report the enhanced FOF findings separately, because they represent unique indicators that are clearly understandable by the public
- Any target set loss should automatically be “greater than green”