

# Bilateral Collaboration on the Physical Protection of Nuclear Material

Between the U.S. Department of Energy (DOE)/  
National Nuclear Security Administration (NNSA) and  
Argentina Nuclear Regulatory Authority (ARN)  
Physical Protection Meeting

Buenos Aires, Argentina  
December 9-10, 2010

Sandia National Laboratories is a multi-program laboratory managed and operated by Sandia Corporation, a wholly owned subsidiary of Lockheed Martin Corporation, for the U.S. Department of Energy's National Nuclear Security Administration under contract DE-AC04-94AL85000.



# Briefing Outline

- Introduction
- Potential Follow-on Activities
- Vulnerability Analysis Methodology for Physical Protection Systems
- Expanding Technical Capacity
- Summary



# Introduction

- Purpose of briefing
  - Review status of physical protection collaboration
  - Propose future collaboration activities
- Background
  - ARN and DOE have been involved in physical protection collaboration activities since 2003
  - There is currently no project action sheet covering physical protection collaboration
  - 15<sup>th</sup> PCG meeting was held in Buenos Aires, Argentina, on August 9, 2010
- Path Forward
  - 15<sup>th</sup> PCG produced one action item proposing to meet and frame a new physical protection project action sheet



# Potential Follow-on Activities (Renewed Interest?)

1. Design Basis Threat (DBT) Workshop
2. Physical Protection System Evaluation
3. Vital Area Identification (VAI) Workshop
4. Physical Protection Equipment Test-bed Workshop

## Other Proposed Workshops (15<sup>th</sup> PCG Request)

1. Vulnerability Analysis (VA) of Physical Protection Systems



# Vulnerability Analysis of Physical Protection Systems

- Vulnerability Analysis - An analysis methodology to qualitatively and quantitatively measure the effectiveness of PPS.
- Vulnerability Analysis Process (4 Steps)
  - *Planning*: Planning and managing a vulnerability analysis project.
  - *Data Collection*: Applying facility characterization and target identification processes to collect site-specific data.
  - *Analysis*: Applying various tools used and understanding strength, limitations, and expected cost verses benefit ratios for each tool.
  - *Results*: Collecting results, identifying and documenting deficiencies, and applying upgrades to mitigate deficiencies.
- Apply the vulnerability analysis methodology course concepts on a hypothetical facility similar to an existing nuclear facility



# Expanding Technical Capacity

- Three facets to Physical Protection (People, Procedures, Equipment)
- Training Program required to maintain PPS
- Answers to each question shapes the training program
  - What is the goal of the training program?
  - What type of personnel require training in each area of interest?
  - What kind of training?
  - Which of the areas have the highest priority?
  - How many people would need to be trained in each area of interest?
  - What is the desired schedule for training of the different groups?
  - How do you assess effectiveness of a physical protection training program?
  - What training should be conducted at a national level versus a site level?



# Summary

- ARN and DOE have a long history of collaboration on physical protection activities.
- Goal is to draft project action sheets as soon as physical protection topics are identified and agreed upon.
- Questions?