**U.S. DEPARTMENT OF ENERGY**

**EA** Enterprise Assessments

# Office of Enterprise Assessments

## *Appraisal Process as it Relates to Material Control and Accountability*

# Presentation Agenda

- EA-22 Mission

- Multi-topic Assessment Process

- Limited-Notice Performance Test
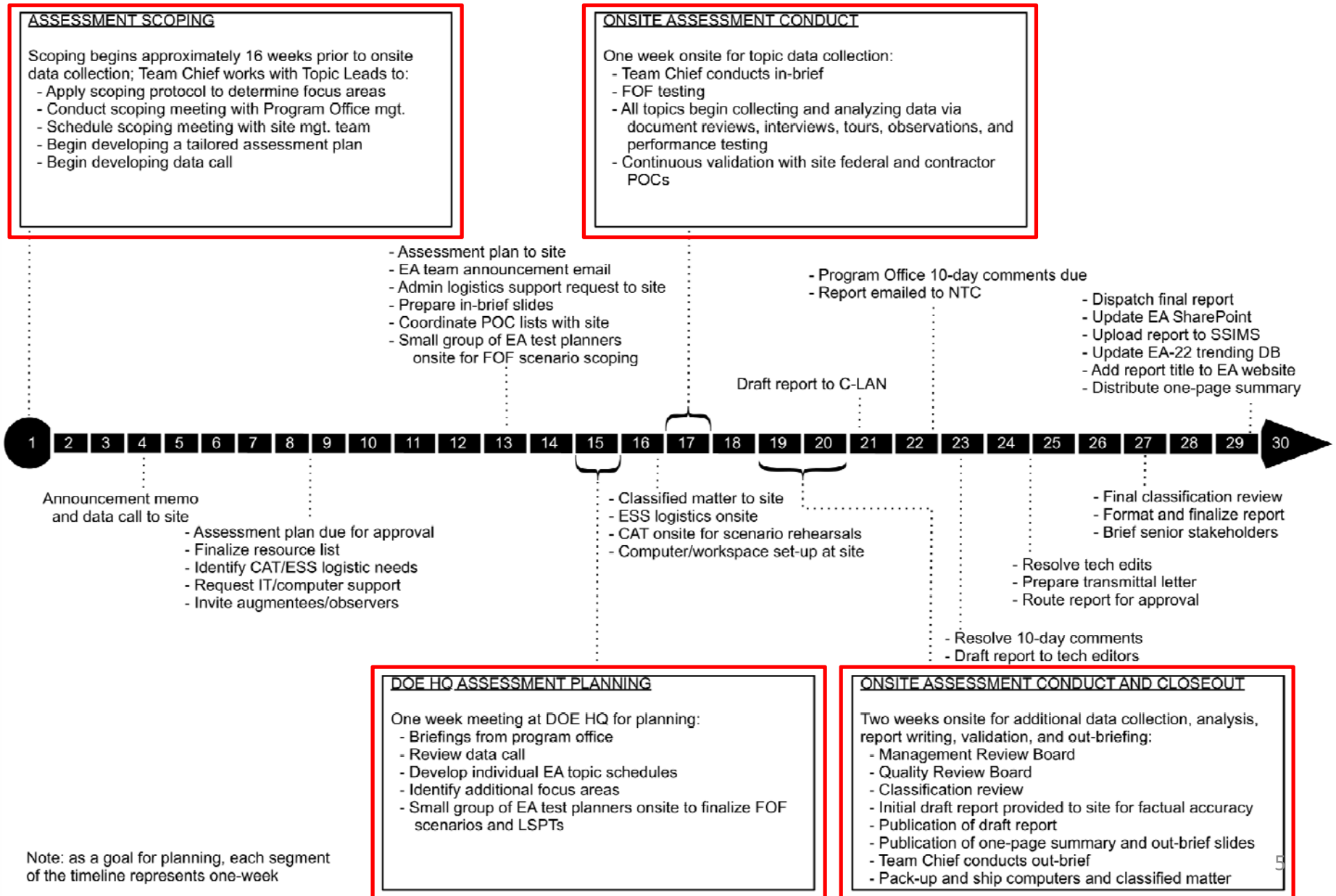
- Quarterly Reports

# EA-22 Office of Security Assessments Mission

*The mission of Office of Security Assessments (EA-22), within the Office of Enterprise Assessments (EA), is to provide feedback to internal and external stakeholders through the independent evaluation of the effectiveness of safeguards and security (S&S) policies and programs throughout DOE.  The major intent of these assessments is to foster continuous improvement in the Department's security program through the identification and effective communication of deficiencies, positive attributes, and unacknowledged program risks to DOE management.*

# Multi-Topic Assessment

- Requirements-based assessment with heavy emphasis on data collection and performance testing in the following topics:

    - Protection Program Management (PPM)

    - **Material Control and Accountability (MC&A)**

    - Classified Matter Protection and Control (CMPC)

    - Physical Security Systems (PSS)

    - Protective Force (PF)

# Multi-Topic Assessment Timeline

## ASSESSMENT SCOPING

Scoping begins approximately 16 weeks prior to onsite data collection; Team Chief works with Topic Leads to:
- Apply scoping protocol to determine focus areas
- Conduct scoping meeting with Program Office mgt.
- Schedule scoping meeting with site mgt. team
- Begin developing a tailored assessment plan
- Begin developing data call

## ONSITE ASSESSMENT CONDUCT

One week onsite for topic data collection:
- Team Chief conducts in-brief
- FOF testing
- All topics begin collecting and analyzing data via document reviews, interviews, tours, observations, and performance testing
- Continuous validation with site federal and contractor POCs

- Assessment plan to site
- EA team announcement email
- Admin logistics support request to site
- Prepare in-brief slides
- Coordinate POC lists with site
- Small group of EA test planners onsite for FOF scenario scoping

- Program Office 10-day comments due
- Report emailed to NTC

- Dispatch final report
- Update EA SharePoint
- Upload report to SSIMS
- Update EA-22 trending DB
- Add report title to EA website
- Distribute one-page summary

Draft report to C-LAN

Timeline: 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

Announcement memo and data call to site

- Assessment plan due for approval
- Finalize resource list
- Identify CAT/ESS logistic needs
- Request IT/computer support
- Invite augmentees/observers

- Classified matter to site
- ESS logistics onsite
- CAT onsite for scenario rehearsals
- Computer/workspace set-up at site

- Final classification review
- Format and finalize report
- Brief senior stakeholders

- Resolve tech edits
- Prepare transmittal letter
- Route report for approval

- Resolve 10-day comments
- Draft report to tech editors

## DOE HQ ASSESSMENT PLANNING

One week meeting at DOE HQ for planning:
- Briefings from program office
- Review data call
- Develop individual EA topic schedules
- Identify additional focus areas
- Small group of EA test planners onsite to finalize FOF scenarios and LSPTs

## ONSITE ASSESSMENT CONDUCT AND CLOSEOUT

Two weeks onsite for additional data collection, analysis, report writing, validation, and out-briefing:
- Management Review Board
- Quality Review Board
- Classification review
- Initial draft report provided to site for factual accuracy
- Publication of draft report
- Publication of one-page summary and out-brief slides
- Team Chief conducts out-brief
- Pack-up and ship computers and classified matter

Note: as a goal for planning, each segment of the timeline represents one-week

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# Scoping

- Initiated about four months before onsite assessment conduct begins

- Collaborative process that includes and emphasizes areas of Program Office and site management interest

- Intended to identify assessment focus areas

- Facilitates development of the assessment plan, document request, and data collection approach for assessing performance

- Significant factors considered:

  - Management input
  - Asset characterization and site mission
  - Changes in mission or operations
  - Changes in policy
  - Historical performance

  - Previous EA assessment results
  - Previous EA enforcement actions
  - Previous internal/external audit results
  - Significant security or operational incidents

**Assessment scoping is prioritized on areas of greatest potential risk**

# Planning

- One week planning meeting at DOE Headquarters precedes onsite assessment conduct

  – Continued coordination and planning with the Program Office and site management

  – Briefings from DOE Policy counterparts

  – Begin reviewing requested site security program documentation (data call)

  – Finalize topic team assignments and data collection schedules

  – Provide stakeholders early notification of any potential concerns

  – Complete administrative and logistical coordination

# Conduct

- Typical multi-topic assessment includes two weeks of requirements-based data collection:
  - Document reviews
  - Facility tours
  - Interviews and observations
  - Performance tests
- Assessment activities are conducted with objectivity, respect, and continuous communication and validation
- Our goal is to seek out "Best Practices" with equal rigor as "Deficiencies" and "Findings"
- Daily status updates to senior EA leadership at Headquarters
- Conduct end-of-day team meetings and daily meetings with site managers to ensure continuity of information and validation

# Conduct (continued)
# MC&A Subtopics

- Program Management

- Material Control

- Measurements

- Material Accounting

- Physical Inventory

# Conduct (continued)
# Program Management

- MC&A Plan, program documents and procedures

- Evaluation programs that monitor system effectiveness

- Training Program

- Graded Safeguards Program

- Loss Detection Element Evaluations

- Site DOE Oversight and Surveys

# Conduct (continued)
# Material Control

- Access Controls

- Material Surveillance

- Detection and Assessment

# Conduct (continued) Measurements

- Measurement Methods
- Selection, Qualification and Validation
- Procedures
- Standards
- Training
- Sampling
- Not Amenable to Measurement Defined
- Data Evaluation

# Conduct (continued)
# Material Accounting

- Accounting System Structure

- Shipments/Receipts

- Record Comparison with NMMSS

- Internal Adjustments

- MBA Custodian records

- Nuclear Material Computer System

- Accounting/Measurements Interface

- Termination of Safeguards

- Foreign Obligations

# Conduct (continued)
# Physical Inventory

- Facility Nuclear Material Inventory

- Plans and Procedures

- Confirmation and Verification Measurements

- Inventory reconciliation

# Conduct (continued)
# Best Practices – Deficiencies – Findings

- **Best Practice**: A safety or security-related practice, technique, process, or program attribute observed during an appraisal that may merit consideration by other DOE and contractor organizations for implementation because it: (1) substantially improves safety or security performance; (2) contributes to superior performance beyond compliance; (3) reduces the risk of a condition that affects multiple DOE sites; or (4) provides an innovative approach or method to improve effectiveness or efficiency.

- **Deficiency**: An inadequacy in the implementation of an applicable requirement or performance standard that is found during an appraisal. Deficiencies may serve as the basis for one or more findings.

- **Findings**: Findings are deficiencies that warrant a high level of attention on the part of management. If left uncorrected, findings could adversely affect the DOE mission, the environment, worker safety or health, the public, or national security. Findings define the specific nature of the deficiency and whether it is localized or indicative of a systemic problem, and identify which organization is responsible for corrective actions.

# Conduct (continued)
# Best Practices – Deficiencies – Findings
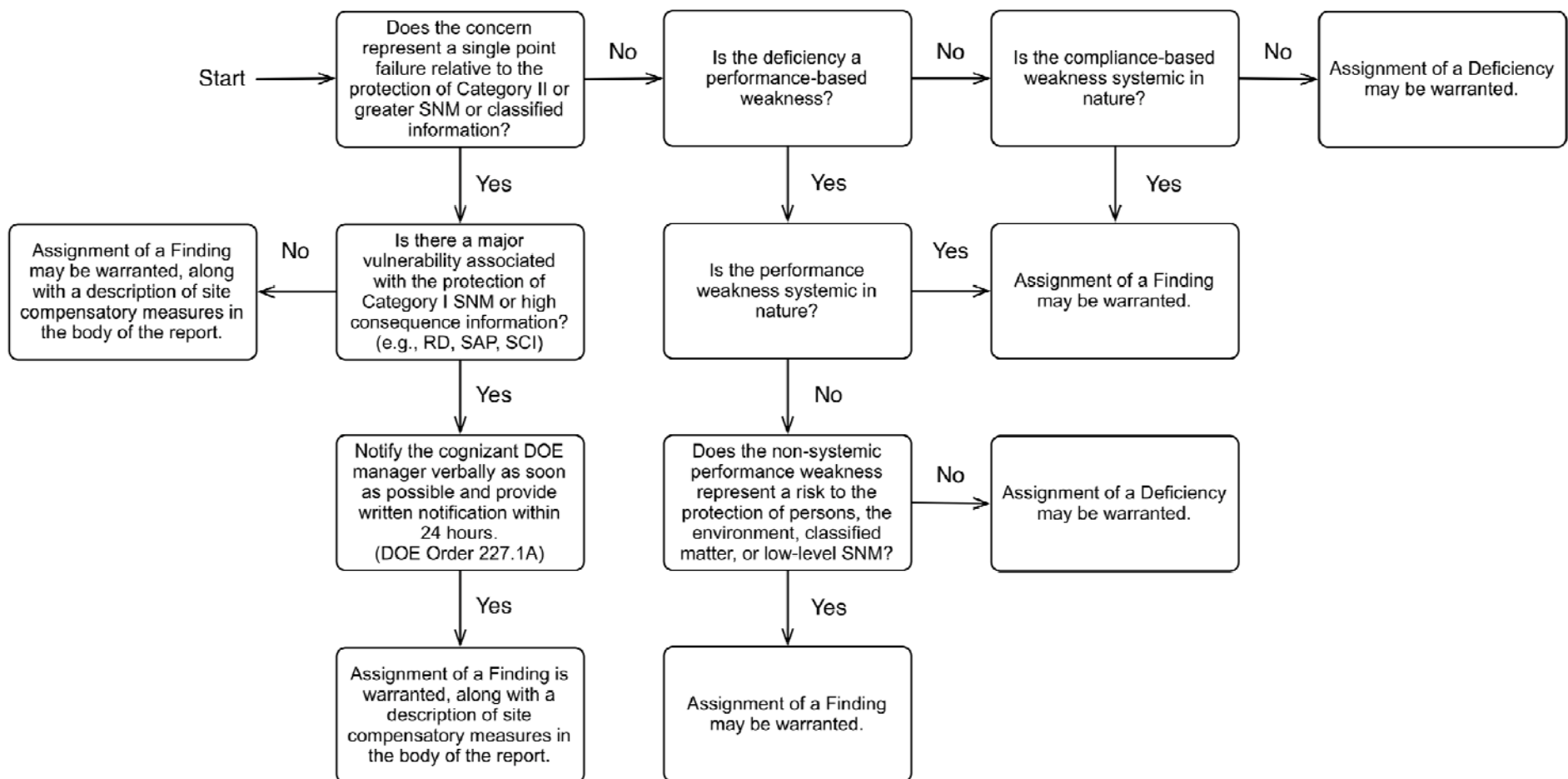
# Conduct (continued)
# Performance Testing

- Benefits of performance testing over other data collection methods
  - More realistic assessment of security system element effectiveness
  - Improved means to identify needed training, equipment, or improvements
  - Better verification of implemented improvements
- Administrative and logistical considerations
  - Trusted agents
  - Clearly defined scope (task/objective, conditions, standards)
  - Safety plan
  - Controllers and evaluators
  - Equipment

# Conduct (continued)
# MC&A Performance Testing

- Focuses on processes for detecting and preventing the theft or diversion of special nuclear material (SNM):

  - Access controls and physical protection

  - Material surveillance

  - Tamper indicating devices (TIDs)

  - Portal monitoring and waste stream

  - Accounting record system

  - Confirmation/verification measurements

  - Inventory difference control limits
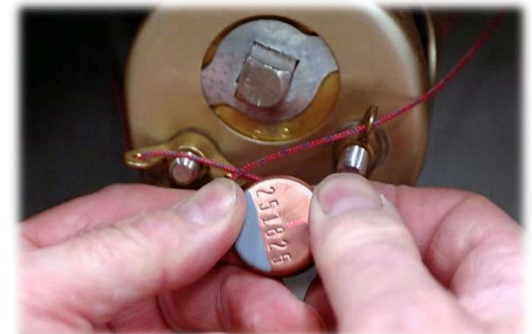
# Closeout and Reporting

- Over the weekend report writing with Team Chief/management review

- Senior EA leadership arrives onsite to convene a Quality Review Board

- Initial onsite factual accuracy review with line management

- After validation and initial factual accuracy, a draft report and formal closeout brief is provided to site management prior to departing the site

- Site and Program Office management have 10 days after the closeout brief to provide additional factual accuracy comments; final resolution typically requires additional dialogue, analysis, and report modification

# Closeout and Reporting (continued)

- The Director reviews final comment resolution to ensure the team has responded objectively to site/Program Office concerns

- Senior EA management is notified of significant comment resolution issues prior to approving the final report

- Management reaction memorandum may be reflected in an appendix to the report

- Rigorous technical edit process

- Senior stakeholders are briefed prior to the report being dispatched

- Final report dispatched no later than 60 days after the closeout brief to ensure meaningful and current information

# Limited Notice Performance Tests

- Provides snapshot assessment of site safeguards and security program
- Complements Multi-topic Assessments

# History

- Development requested by Secretary of Energy in 2012

- Response to 2012 Event

# Development

- Three day on-site assessment

- First LNPTs completed in 2013

- Concurrent development of LNPT Assessor's Guide and LNPT Test Bank

# LNPT Planning

- Development of LNPT Test Bank

- Address all 5 MC&A Sub-topical Areas

  – Program Management

  – Material Control

  – Measurements

  – Material Accounting

  – Physical Inventory

# LNPT Planning

- Site planning begins 60 days before date of LNPT
  - Team assignments
  - Test selection, graded safeguards basis
  - Site Coordination
    - Site-specific test plans
    - Safety risk assessments

# LNPT Planning

- Selection of Trusted Agents
  - Federal
  - Contractor
  - Sufficient to make necessary decisions
  - Maintain secrecy of LNPT

# LNPT Planning

- Selection of Site Tests
  - 2-8 total tests over all topical areas
  - Allow sufficient time for follow-up if needed
  - Test may be used to position team for other activities

# LNPT Planning

- Team access
  - Site access
  - Protected Area
  - Material Access Area
  - Storage Areas
  - Processing Areas
  - Radiation Areas

# LNPT Conduct

- One week Activity
  - Travel to site Monday
  - LNPTs Tuesday and Wednesday
  - Report writing Thursday AM
  - Close-Out Thursday PM
  - Travel home Friday

# LNPT Conduct

- MC&A Assessors
  - Observers only
  - No hands-on work with nuclear materials
  - Material Access Area
  - Storage Areas
  - Processing Areas
  - Radiation Areas

## Current LNPTs focus primarily on individual areas. Current tests are:

**Accounting Systems**
- Accuracy
- Access Control

**Calculations**
- Inventory Adjustment
- LEID Verification
- Rollup Analysis

**Inventory Activities**
- Generate listings
- Perform inventory
- Process Monitoring
- TID inventory

**Measurements**
- Measurement of a Standard
- Traceability of Standards
- Perform a Verification Measurement

**Personnel Records Review**
- Confirm HRP enrollment
- MBA Custodian Training Records
- MBA Transfer Records
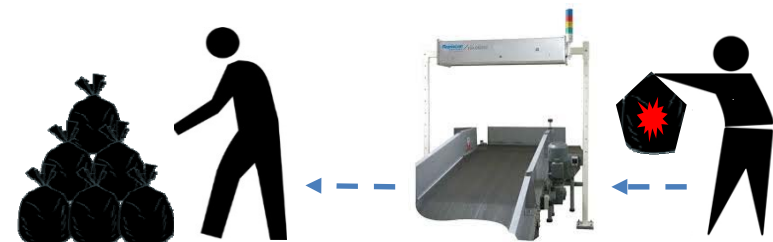- TID Training Records

**Training**
- Daily Administrative Checks
- Effectiveness - MBA Custodian
- Effectiveness - TID Custodian
- Pro Force Handheld Monitor
- Pro Force – SNM Detector

# Integrated Tests Run to Date
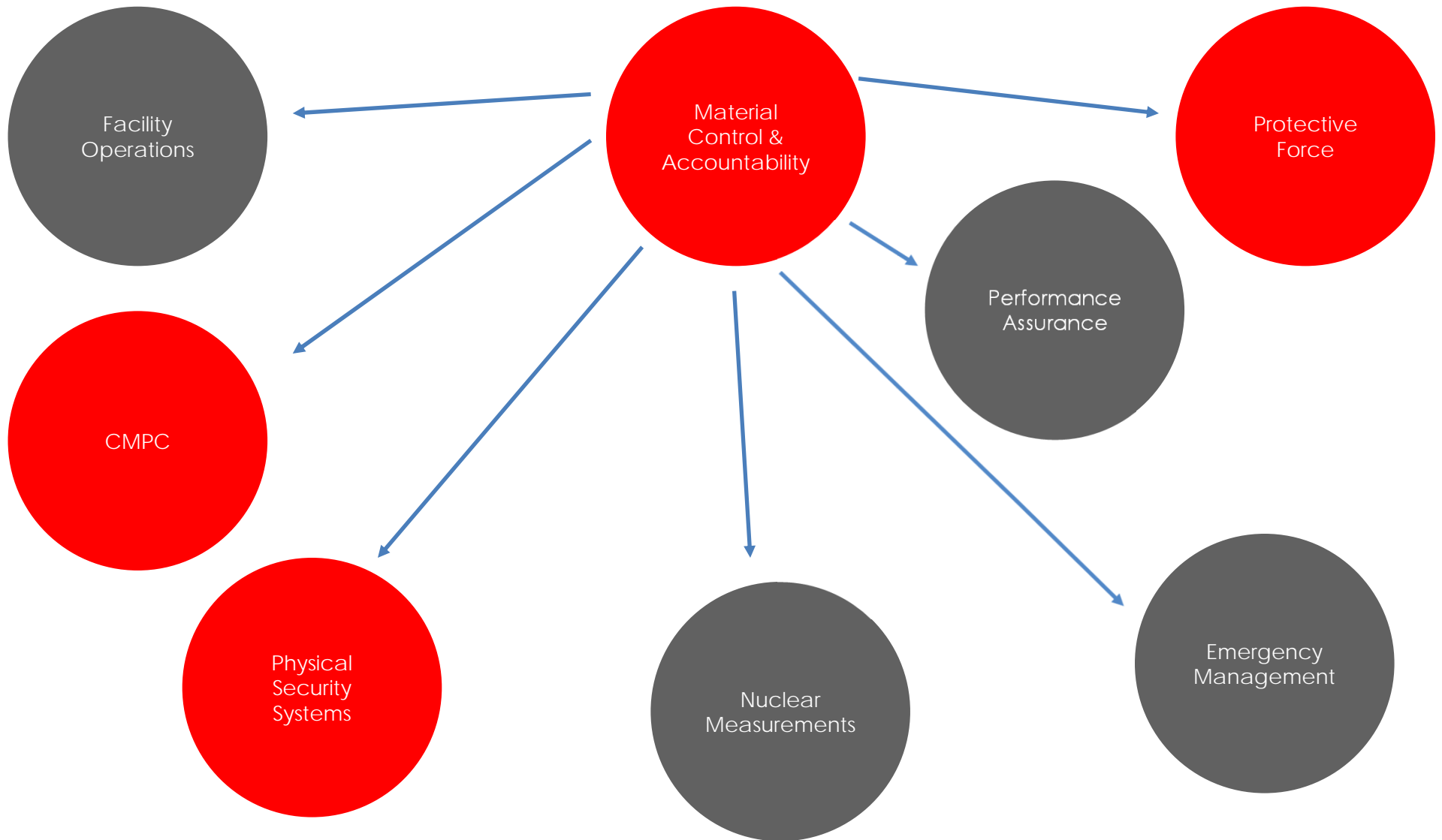
Example 1: Theft of SNM
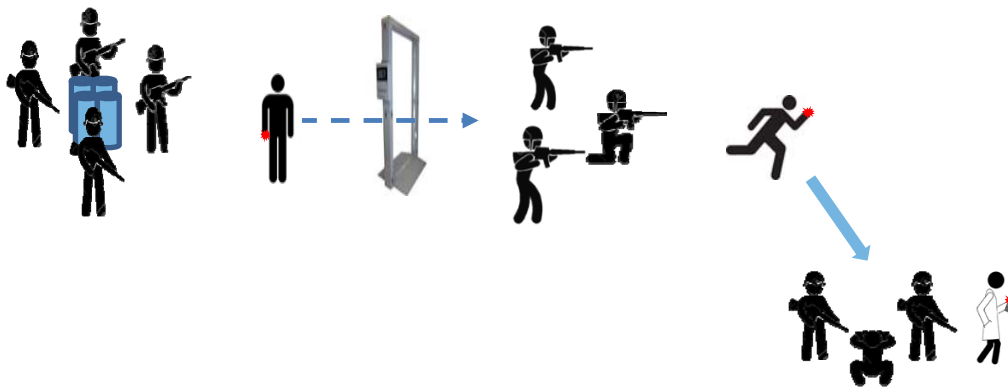
Example 2: Waste Monitoring

# Organizational Interactions

Facility Operations

Material Control & Accountability

Protective Force

CMPC

Performance Assurance

Physical Security Systems

Nuclear Measurements

Emergency Management

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# LNPT Reporting

- Analysis of results
- Identification of
  - Findings
  - Deficiencies
  - Opportunities for improvement
  - Best practices
- Determination of conclusions
- Preparation of report

# LNPT Reporting

- Report issued in letter format from EA to DOE Site Office

# LNPT Close-out

- Results presented to
  - Facility
  - DOE Site Office
  - Secretary of Energy's Chief of Staff

- Lessons learned developed with EA Team
  - Topic Area Workshops

# Quarterly Reports

- Headquarters and Field Security Officials
- Share Lessons Learned and Best Practices

# Positive Trends

- Innovative process for managing nuclear material holdings

- MBA custodians imbedded within operations

- Noteworthy measurement hold-up practice

- MC&A plans and procedures

- Development of Materials Accountability records system

- Accountable nuclear materials user site

- MC&A Activity dashboard

# Positive Trends continued

- Training course with virtual reality components
- Development of NDA standards to simulate equipment configurations

# Adverse Trends

- Foreign Obligations
- Decision tree in Technical Standard versus DOE Order
- Commingling of accountable and non-accountable material
- Self assessments lacking various criteria
- Challenges remain for implementation of the DOE order at some sites
- Failure to update records in a timely manner

# Questions?