

LA-UR-

11-00562

Approved for public release;
distribution is unlimited.

Title: LANL Surveillance Requirements Management and
Surveillance Requirements from NA-12 Tasking Memo

Author(s): Hills, Charles

Intended for: Surveillance Requirements Summit



Los Alamos National Laboratory, an affirmative action/equal opportunity employer, is operated by the Los Alamos National Security, LLC for the National Nuclear Security Administration of the U.S. Department of Energy under contract DE-AC52-06NA25396. By acceptance of this article, the publisher recognizes that the U.S. Government retains a nonexclusive, royalty-free license to publish or reproduce the published form of this contribution, or to allow others to do so, for U.S. Government purposes. Los Alamos National Laboratory requests that the publisher identify this article as work performed under the auspices of the U.S. Department of Energy. Los Alamos National Laboratory strongly supports academic freedom and a researcher's right to publish; as an institution, however, the Laboratory does not endorse the viewpoint of a publication or guarantee its technical correctness.

Abstract:

Surveillance briefing to NNSA to support a tasking memo from NA-12 on Surveillance requirements. This talk presents the process for developing surveillance requirements, discusses the LANL requirements that were issued as part of that tasking memo, and presents recommendations on Component Evaluation and Planning Committee activities for FY11.

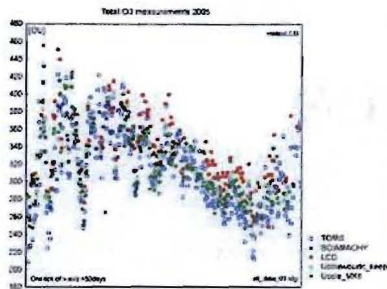
LANL Surveillance Requirements Management and Surveillance Requirements from NA-12 Tasking Memo

Charles R. Hills

W-9, Surveillance Oversight

This document has been deemed
UNCLASSIFIED by:
Charles R. Hills, W-9 CRH
(DC)

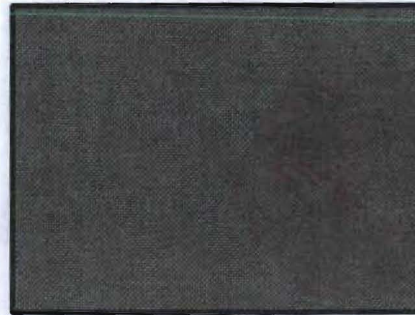
Collect



Analyze



Assess



Update



Collect

Surveillance Data

- Release surveillance requirements
- Oversight of surveillance data collection
- Oversight of surveillance data transmittal

Surveillance requirements managed primarily through the weapons annual assessment process

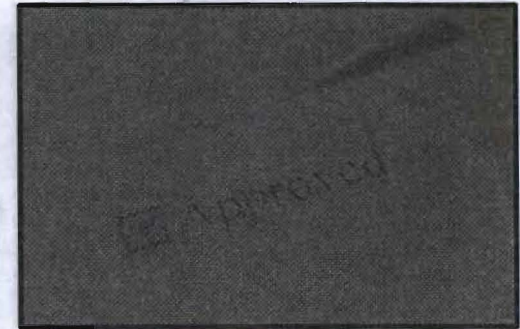
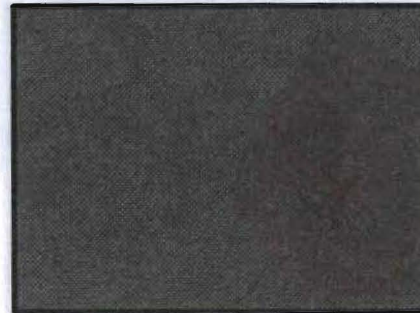
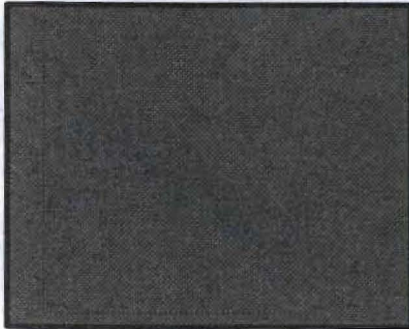
UNCLASSIFIED

Collect

Analyze

Assess

Update



Analyze

Surveillance Data

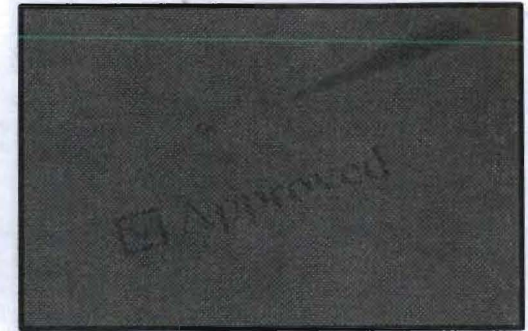
- Update statistical models
- Validate physical models
- Comparison to design and production requirements

Collect

Analyze

Assess

Update

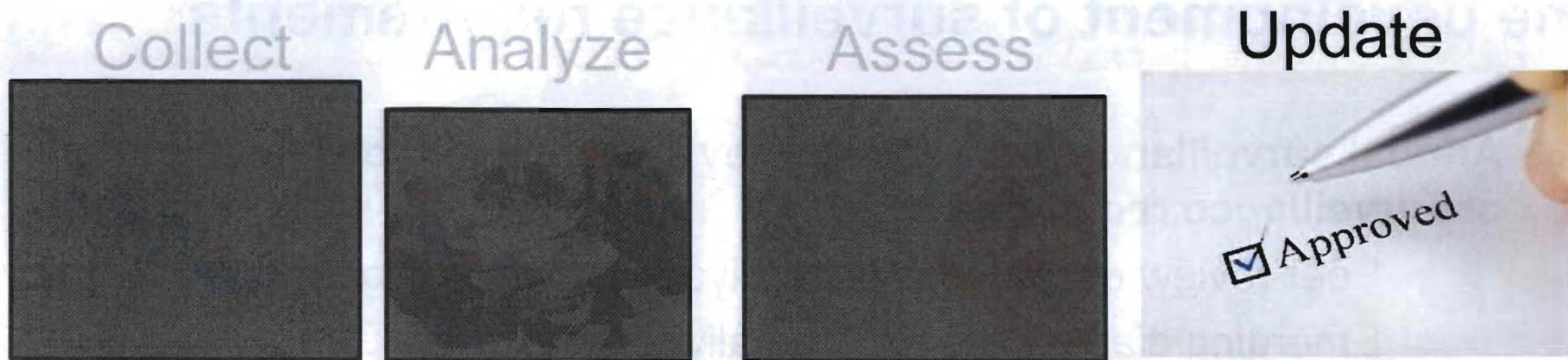


Assess

Surveillance Data

- Impacts on safety, performance, and reliability
- Knowledge gaps
- Assessment presented to Warhead Managers and physics
- Reviewed at Directors Briefings
- Communicated through Cycle Reports, POGSs, IWETs, Directors Assessment Letter

UNCLASSIFIED



Update

Surveillance Requirements

- Assessment process informs surveillance requirements
- Communicate requirements to PAs
- Update BG, BC, and BB documents as necessary
- Update TBSTP, QERTS, Reliability, and IWET plans
- In the future potentially CEPPC report updates

Checks and balances exist in the LANL process for the development of surveillance requirements

- **Annual surveillance analysis and reviews inform the development of surveillance requirements**
 - Peer review of surveillance analysis and emerging requirements
 - Emerging diagnostics are critically reviewed
- **Weapon physics and science community are consulted as part of the development process**
- **New requirements are reviewed/approved by Weapon Program Managers and upper management depending on impacts**

LANL is working toward development of a top level NEP Surveillance requirements management process

- **Use of DOORS (Dynamic Object Oriented Requirements System) to manage all surveillance requirements**
 - All levels of system requirements are captured and tracked in a database
 - External requirements
 - MCs, STS, ICDs, ...
 - Derived requirements
 - CDs, MEs, Product Spec's, Surveillance Spec's
- **Allows for verification and compliance status**
- **Configuration-controlled, links to configuration-controlled documents**

- Navy is issuing all requirements in DOORS format
- Air Force has purchased DOORS and is moving in the same direction
- PRIDE endorsed DOORS as the preferred RM Tool

No new recurring requirements in the FY11 LANL Core Surveillance program from the NA-12 Tasking

- All activities in the NA-12 tasking memo have formally released surveillance requirements
- Annual Assessment has identified knowledge gaps that required additional tests to help understand
 - W76-0 and W88 CSA evaluations have increased
- B61 Systems group has established a system requirement to define a baseline for the B61 LEP through a 28 unit study
- New STP diagnostics are being developed for deployment in FYNISP
 - Vetted in CEPPC reports and presented in IWET
 - Jointly developed with the PAs and ESC for qualification and deployment

LANL surveillance requirements have been consistent with what was submitted in IWET Plans

CEPPC recommendations for FY11

- Guidance needs to be finalized by SEPWG
- After guidance is published CEPPC groups need to meet to assess status path forward once guidance is published

CEPPC's would be a powerful, collaborative, and transparent way to improve and optimize the surveillance program