



Case Study Enterprise Integrated Safety Management (EISM) Implementation at the Nevada National Security Site (NNS)

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Enterprise Integrated Safety Management (EISM) Vision



*Transparency to All ISM Related Information
Leading Indicators to Drive Improvement*

- NNSA Nevada Nuclear Security Site (NNSS)
 - 1,350 square miles of area
 - One of the largest test areas in the United States
 - Founded as a on continent proving ground
 - Site now used for activities such as hazardous chemical spill testing, emergency response training, and conventional weapons testing
- Baseline NNSS Conditions
 - Exposure Assessment: Paper based exposure assessment program
 - Requirements are in place to automate and integrate exposure assessment information
 - Former Worker Program
 - Largest population of potentially exposed population do to proximity to Las Vegas and historic testing, many inquires on historic exposures, lack of continuity in exposure records over time.
 - NNSS has one of the largest payouts under EEOICPA to pay former workers/families that have been exposed to work related illnesses





- 10 CFR 851, Presidential Directive 5 NNSA is required to have in place a Longitudinal Exposure Record for each of its employees from the date the person entered the government service for 75 years from their departure from the department
- 10 CFR 851.21 requires documented Hazard Identification and Assessment Processes
- 10 CFR 851.22 requires documented Hazard Prevention and Abatement Processes
- 10 CFR 851 compliant Industrial Hygiene Programs must document results of baseline and periodic surveys to identify and evaluate potential worker health risks
- 10 CFR 851 requires electronic medical records
- EO 13514 Federal Leadership in Environmental, Energy, and Economic Performance
- Sites are reporting Non-compliance with 10 CFR 851 Hazard Analysis requirements

- Clean Air Act
- Chemical Tracking
- Hazardous Waste Tracking
- Employee Longitudinal Health Record
- Injury and Illness Tracking
- GHG Emissions
- Energy Consumption/Green IT
- Medical Surveillance and Records (EEOICPA)
- **Integrated Safety Management (ISM) – DOE**

NNSS and NNSA EISM Timeline



2004

- Needed solid exposure assessment (EA) policy to track employee work related exposures
- Looked at program that was set up by the DOD called the Defense Occupational and Environmental Health Readiness System (DOEHRS)

2005

- Started to build the business case for the implementation of EISM based upon the Hill Air Force Base as the model
- Developed a cost estimate and ROI for EISM

2006

- Completed the business case and verified that the findings were valid to go forward with EISM
- Implemented first release of DOEHRS at NNSS, which was hosted on the DOD DISA environment

2007

- Began the EISM Documentation process for NNSA
- Started to provide a series of webinars that provided EISM information to all DOE sites

2008

- Validated the need for high level requirements for EISM and determined measurement metrics for the DOE
- Conducted NNSA IH Workshop for EISM to explain direction with EISM and conducted Hill AFB tour to observe EESOH at a facility

2009

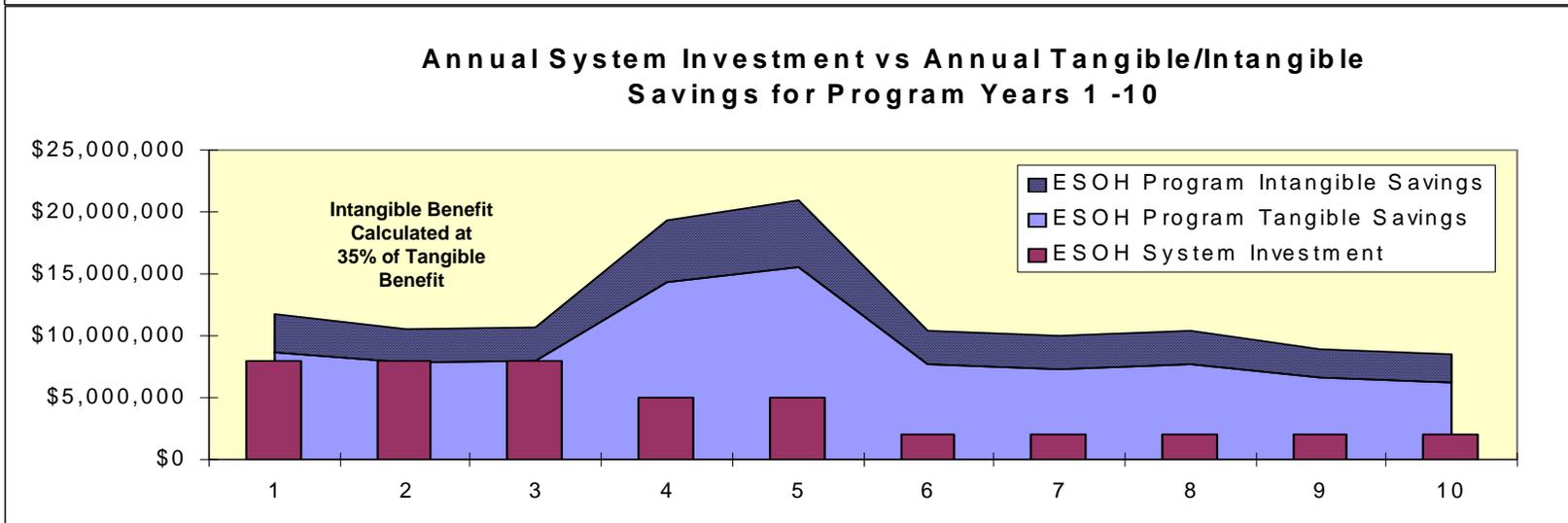
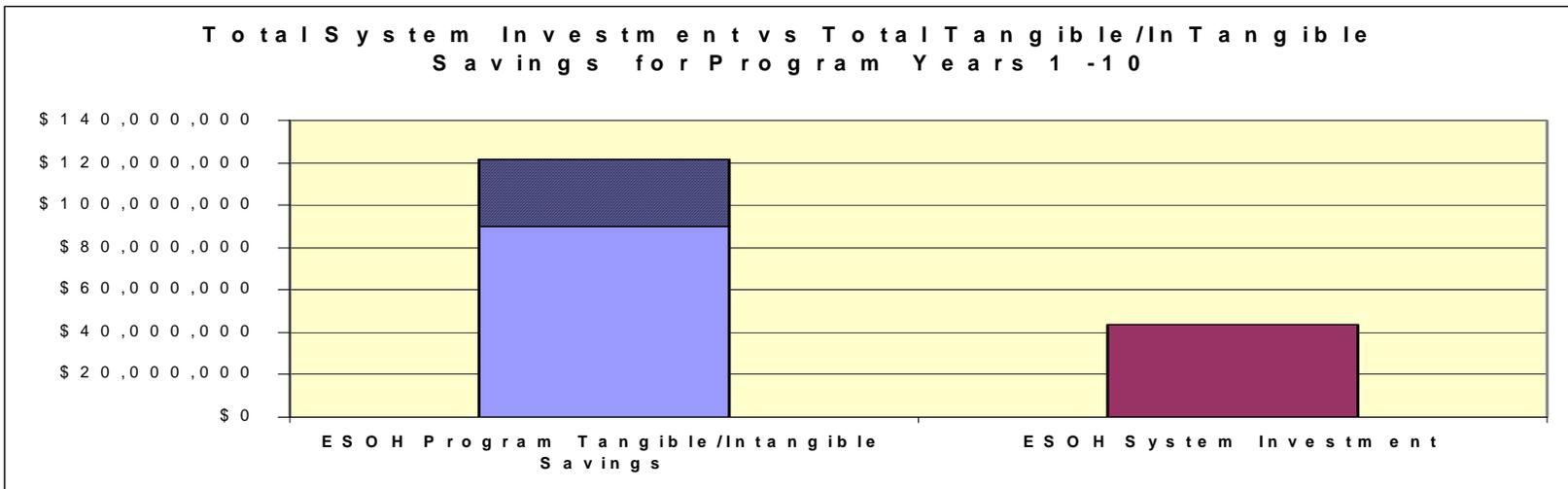
- Conducted an EISM Management Workshop at NNSS for all NNSA and DOE sites
- Validated DOEHRS as the EISM-EA module for the DOE.
- EISM gained acceptance of concept of concept from EFCOG groups and committees
- Generation of critical decision package and enterprise requirements

2010

- Obtained a copy of DOEHRS as part of a cooperative agreement between the DOD and DOE
- Implementation of EISM-EA and business process improvement at SRS
- Implementation of EISM (EA, Chemical Tracking, HazWaste, Air Quality) at NNSS

Business Case for EH&S Information System

Composite View of Factors Over Life Cycle



EESOH Returns From the Start and Continues To Deliver Value

- Implementation of EISM-EA
 - Validate ability for NNSA and EM to use common application
 - Verify Common Structure for Exposure Records and interoperability
- Business Process Improvement Pilot (IH and OM)
 - Establish common applications in IH and OM at three sites
 - Requested NTS/SRS/Y-12 participation
 - Identify any Data Gaps and Business Process concerns
 - Verify IH and OM data sets and business process can interoperate
- Business Process Improvement Pilot (Stewarded Data)
 - Gained acceptance of concept from EFCOG groups and committees
 - Requested NTS/SRS/Pantex/Y-12 participation
 - Validate that Chemical Hazard and MSDS data can be reused across sites
 - Verify concept of centralized stewarded data provisioning is possible.

- Interoperability with Contractor Assurance Systems (CAS)
 - Submitted ISM goals to 5 year strategic plan process
 - Integrating CAS work group and guidance with ISM goals
 - Validating interoperability of “Management Systems”

- Common Work Taxonomy
 - Commonize the definition of work across sites
 - Verify that process centric (work driven) hazard assessment is viable
 - Requesting site participation with scope definition

- Environmental Sampling
 - Establish common sampling and tracking application at multiple sites
 - Validate that sampling performed at sites can be supported by common business process and stewarded data sets
 - Requesting site participation with scope definition

- Establish EISM Governance Board and CCB
 - Establish governance board and CCB for EISM applications
 - Define Governance Change Control structure and scope
 - Current concept is to use the EFCOG committees and structure

- 2006: Implemented DOEHRS at NNSS, which was hosted on the DOD DISA servers. DOEHRS was used to establish an employee longitudinal exposure records to meet 10 CFR 851 requirements.

- 2010: Implemented EISM at NNSS, which included
 - Exposure Assessment
 - Chemical Tracking
 - Hazardous Waste Management
 - Air Quality Management (GHG Tracking)
 - Process Authorization
 - Environmental Sampling
 - Migration of BEIDMS Data into EISM (CCS)

- DOE Infrastructure does not support enterprise services from other agencies
 - DOEHRS running off DOD services provided various security problems that included credentialing, performance issues, access issues and no mobile capabilities
 - EISM system needs to be hosted on DOE enterprise services
- Sites need to identify a common set of application requirements ISM in terms of functionality and services and obtain buy-in from the various organizations (i.e. environmental, health, IT, work planning)
- EISM process centric approach must be implemented to tie planning and programming to forecast hazards and their mitigation.
- Maintain the taxonomy required to interrelate major work types such as R&D, production, assembly, storage, delivery and destruction, clean up, and renewable activities.
- Common infrastructure is required to expedite and document the flow of ISM related information between responsible parties
- The need to tie EISM to other enterprise applications such as personnel management or work planning to make sure any changes in personnel or work activity can trigger reevaluation of ISM requirements.
- Use of stewarded data (chemical, hazards, MSDS) sets needs to be utilized across the enterprise to provide high data quality and reduce duplicative data management efforts.



QUESTIONS??