10097 – Environment, Safety, and Occupational Health (ESOH) Lessons Learned from DoD Acquisition Systems Engineering Program Support Reviews
Environment, Safety, and Occupational Health (ESOH) Lessons Learned from DoDAcquisition Systems Engineering Program Support Reviews

Presented at the NDIA Environment, Energy Security & Sustainability (E2S2) Symposium & Exhibition held 14-17 June 2010 in Denver, CO.
Current Initiatives Target the Entire Life Cycle Framework

- ESOH in Joint Capabilities Integration & Development System (JCIDS)
- Environmental Sustainability Criteria used for decision making
- Expanded use of DFAR Clauses
- Expanded review of documentation

Participation in Program Support Reviews
Overview

- PSR Policy
- PSR Practice
- PSR ESOH Lessons Learned
8 Dec 2008 DoDI 5000.02, Operation of the Defense Acquisition System

Section E12, Systems Engineering

- Section E12.6, ESOH
  - Integrate ESOH into Systems Engineering using MIL-STD-882D, the DoD Standard Practice for System Safety
  - Use MIL-STD-882D in all developmental and sustaining engineering activities
  - As part of risk reduction, eliminate ESOH hazards where possible, and manage ESOH risks where hazards cannot be eliminated
8 Dec 2008 DoDI 5000.02, Operation of the Defense Acquisition System

Section E12, Systems Engineering

Section E12.6, ESOH continued

The PM must report the status of all High and Serious ESOH risks and applicable ESOH Technology Requirements for program reviews and fielding decisions

Prior to exposing people, equipment, or the environment to a known system-related ESOH hazards

Risks must be accepted by the appropriate authority

User concurrence for High and Serious risks
8 Dec 2008 DoDI 5000.02, Operation of the Defense Acquisition System

- Section E12, Systems Engineering
  - Section E12.6, ESOH continued
    - Prepare Programmatic ESOH Evaluation (PESHE)
    - Maintain a NEPA Compliance Schedule and prepare or assist in preparation of NEPA documents to support site specific actions
  - Participate in Class A & B mishap investigations
8 Dec 2008 DoDI 5000.02, Operation of the Defense Acquisition System

- Section E2, Procedures
  - Section E2.9, Review Procedures
    - Section E2.9.f, Program Support Reviews (PSRs)
      - Done to support DAB reviews or requests by AT&L or PM
      - Conducted by DDR&E/SE
      - Focused on technical planning and management processes
      - Use cross-functional and cross-organizational teams

Guidance Documents

- Defense Acquisition Guidebook (DAG)
Guidance Documents continued

- Defense Acquisition Program Support (DAPS) Guide
  - Section 4.0, Technical Processes
    - Sub-Area 4.1, Design Considerations
      - Factor 4.1.4, ESOH (pages 223-232)
      - Factor 4.1.7, Corrosion (Hexavalent Chromium)
  - Criteria and Focus Questions for
    - Pre-Milestone A
    - Pre-Milestone B
    - Pre-Milestone C
    - Post-Milestone C (Production & Deployment)

As of: 16 Jun 2010
PSR Practice 1 of 5

- ESOH Participation
  - OSD Systems Engineering-led PSRs underway since 2006
  - DDR&E/SE team of in-house Systems Engineering Subject Matter Experts (SMEs) with additional OSD specialty-area SMEs
  - Originally, PSR teams had no ESOH SMEs
  - DoD Acquisition ESOH IPT led by DUSD (I&E) got ESOH content added to DAPS guide
  - In 2009 and 2010, DUSD (I&E) led teams of ESOH SMEs from DoD Acquisition ESOH IPT Service reps to support several PSRs
  - Efforts underway to formalize that process for including ESOH SMEs on all or most PSRs

As of: 26 Feb 09
ESOH Participation Objectives

- Asses program compliance with the DoDI 5000.02 and DAG
- Focus on PESHE
  - Integration strategy (ESOH into SE)
  - ESOH hazard tracking data
  - NEPA compliance schedule
- ESOH current High and Serious risk and technology requirements reporting using DAG templates
- Look for consistency with AS, SEP, & TEMP
- Utilize the DAPS guide Criteria and Focus Questions
- Findings help inform policy and guidance changes

As of: 26 Feb 09
PSR Practice 3 of 5

Acquisition ESOH Policy

Program Support Review

Interpretation & Execution By Program Offices

Analyze PSR Findings & Assist Program (if needed)

As of: 16 Jun 2010
Colors:
G: On Track, No/Minor Issues
Y: On Track, Significant Issues
R: Off Track, Major Issues
W: Not assessed
↑: Improvement from initial assessment

Initial assessment: Jan 2010
Current assessment: Feb 2010

Note: Roll-up is worst case

DAPS-level results
13 positive findings
16 neutral findings
30 negative findings
57 issues
35 risks
46 recommendations
**Risk:** Cost Increase  
**Drivers:**  
- Resource Management Decision (RMD) 802 quantity reduction (C)  
- Unknown sustainment strategy (C)  
- Business Case Analysis (BCA) timeline impact to POM-12 (C)  
**Recommendations:**  
- MS budget for highest-cost sustainment alternative, expedite BCA analysis

**Risk:** Initial Operational Capability  
**Schedule**  
**Drivers:**  
- Early use of schedule reserve (S)  
- Recent training delays (S)  
- Limited Production Qualification Testing (PQT) assets (S)  
**Recommendations:**  
- Program update technical documentation: SEP, AS, MOSA, PESHE, etc.  
- MS define block-upgrade strategy  
- MS monitor logistics data / spares, consider adding materiel availability ($A_m$) goal

**Risk:** Program Manning  
**Drivers:**  
- MS authorization for staffing has not been approved by System Center (S, P)  
- NA-1 Aircraft Product Directorate personnel turn-over / vacancies (S)  
- Competition for qualified personnel (S)  
**Recommendations:**  
- Program update technical documentation: SEP, AS, MOSA, PESHE, etc.  
- MS define block-upgrade strategy  
- MS monitor logistics data / spares, consider adding materiel availability ($A_m$) goal

**Risk:** Initial assessment: Jan 2009  
**Current assessment: Feb 2010**  
**Recommendation shows progress and / or completion**

**Risk:** Transition Planning  
**Drivers:**  
- Transition Support Plan lacks details for adoption of MS processes and procedures  
- Potential Concept of Employment (CONEMP) differences (C, S)  
**Recommendations:**  
- MS get PCO on-board, conduct detailed review of contract, identify / implement changes  
- Program identify process differences and planning gaps in Transition Support Plan

**Risk:** Sustainment Planning  
**Drivers:**  
- Inadequate sustainment planning at program inception, RMD 802 forces re-evaluation (C, S)  
- BCA late-to-need for supportability decision  
- No visibility into repairs and FRACAS for components below line-replaceable-unit level  
- Insufficient plan for design sustainment (C, P)  
- Lack of defined block-upgrade strategy  
- ESOH, PESHE and Corrosion plans are incomplete  
**Recommendations:**  
- Program update technical documentation: SEP, AS, MOSA, PESHE, etc.  
- MS define block-upgrade strategy  
- MS monitor logistics data / spares, consider adding materiel availability ($A_m$) goal

As of: 16 Jun 2010
PSR ESOH
Lessons Learned 1 of 2

- Common findings
  - ESOH risk data and technology requirements not in PESHE
  - PESHE does not describe actual ESOH program implementation
  - Program Office ‘System Safety’ and ‘ESOH’ efforts not integrated
  - Lack of emphasis on implementing ESOH mitigations
  - Failure to address USD (AT&L) hexavalent chrome policy

- See consistency between ESOH management and other program management areas, both good and bad
- Including ESOH in PSRs focuses Program Managers on ESOH
  - See OSD concerned about ESOH
  - Take responsibility for solving problems

As of: 26 Feb 09
PSR ESOH
Lessons Learned 2 of 2

- Personal observations
  - David Asiello, DUSD (I&E) PSR ESOH Team Lead
    - "Structured process"
  - Lori Hales, Booz Allen Hamilton
    - "ESOH Risk Management integration"
  - Bill Thacker, Booz Allen Hamilton
    - "Review actual data"
  - Lucy Rodriguez, Booz Allen Hamilton
    - "System Safety and ESOH not integrated"
  - Karen Gill, Booz Allen Hamilton
    - "Disconnect between documents and reality"

As of: 26 Feb 09