Acquisition Environment, Safety, and Occupational Health (ESOH) – ODUSD(I&E) Role and Activities

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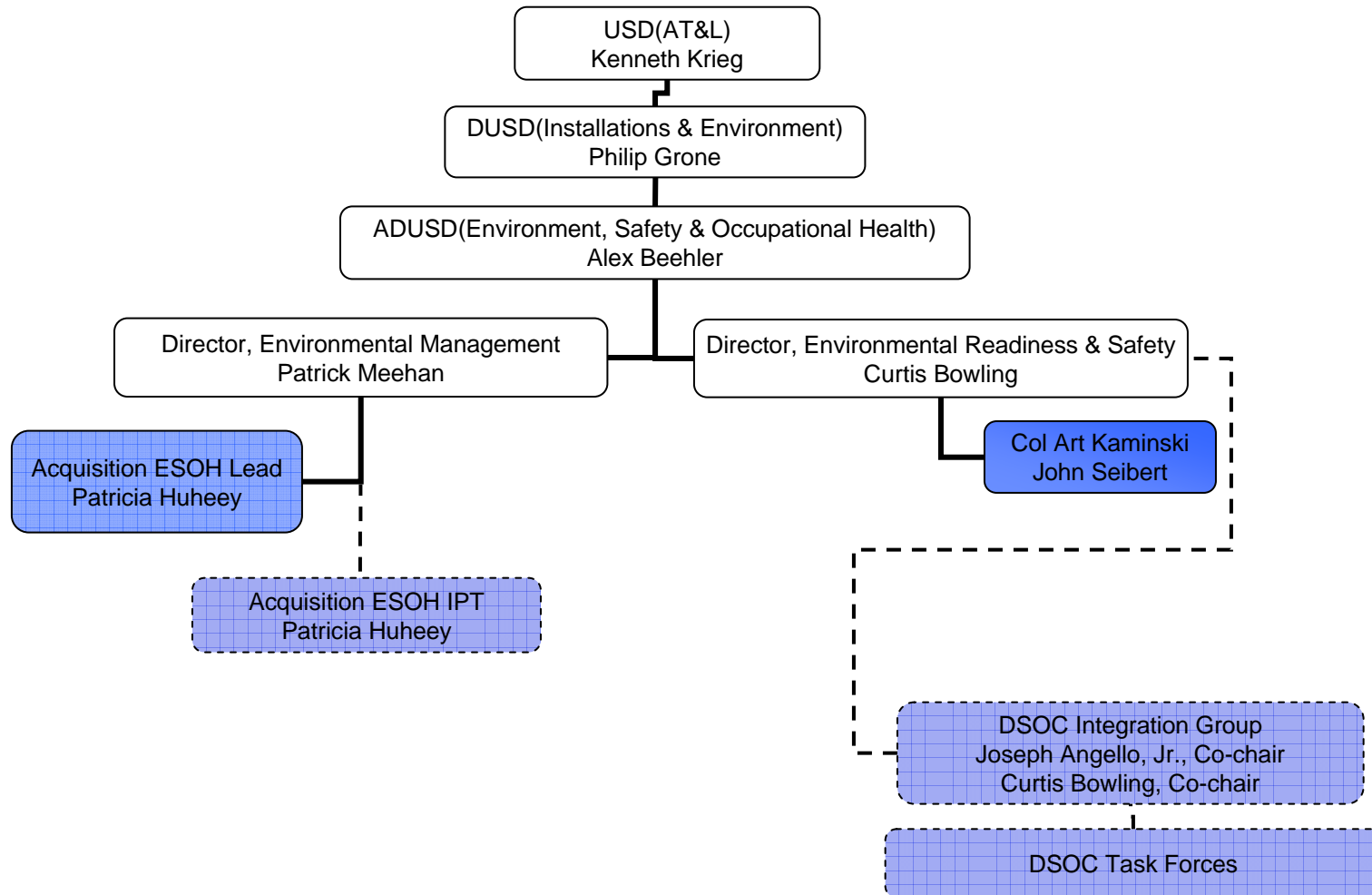
ODUSD(I&E) in AT&L Role

- Base Realignment & Closure
- Business Enterprise Integration
- Environmental Management
- Environmental Readiness & Safety
- Emerging Contaminants
- Housing & Competitive Sourcing
- Installation Requirements & Management
- DoD Explosives Safety Board
- Pest Management Board

- Manage DoD facilities and infrastructure
- Defense Facilities Strategic Plan
- Key metrics to provide quality facilities and infrastructure that directly support mission needs and readiness
- Manage Natural Infrastructure assets at installations and ranges in an environmentally sound manner to prevent encroachment and support military force operational needs

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ODUSD(I&E) Acquisition ESOH Leadership

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DSOC Task Forces

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ODUSD(I&E) Role in Acquisition

- DAB/ITAB Special Advisor for ESOH issues
- Oversight of ACAT 1D, IAM, and Special Interest programs
- Focus on DoD 5000 -- ESOH in acquisition policy development
- Develop guidance for acquisition ESOH policy
- ESOH input to CJCS 3170.01 series - JCIDS

ODUSD(I&E) Role in Acquisition

- Chair DoD Acquisition ESOH IPT
  - Consensus on ESOH policy and guidance
  - Influence NSS Acquisition Policy and JCIDS
- Member of the DAPWG/DAPSG
  - DoDI 5000.2 and Defense Acquisition Guidebook
  - Acquisition Community Connection (ACC) site
- Member of Defense Safety Oversight Council
  - Co-chair DSOC Integration Group
  - Acquisition and Technology Programs Task Force

ODUSD(I&E) Perspective

- Why be concerned with ESOH in Acquisition?
- ESOH considerations affect the operational effectiveness and sustainability of the system
  - There is a relationship between the natural infrastructure and the military mission
  - Compliance requirements and encroachment influence how DoD maintains and trains with the system
  - System design, operation, and maintenance parameters determine the installation and workforce needs to train and maintain the system

ODUSD(I&E) Perspective

- The goal is to identify life-cycle ESOH risks early and influence system design, not address them afterwards as operational considerations

- E, S, and OH considerations are inter-related and should be assessed holistically

- ESOH hazards are best addressed using a rigorous, analytical process

- System design is most effectively influenced through the system engineering (SE) process

ODUSD(I&E) Perspective

- ESOH risks include:
  - Hazardous materials and waste
  - Environmental and occupational noise
  - Personnel safety and occupational health
  - Regulatory compliance
  - System safety and explosives safety
- Need to manage ESOH risks associated with:
  - Routine operation and maintenance of the system
  - System failures
  - ESOH compliance requirements

ESOH Policy Requirements

- Top level principles:
  - Address safety throughout the acquisition process
  - Use a total systems approach to minimize or eliminate characteristics that produce environmental, safety or health hazards, where practicable and cost effective
  - Use the system safety methodology to minimize ESOH hazards where possible and manage ESOH risks where they cannot be avoided
  - Accept risks at designated management level
  - During system design, document HAZMAT in the system and plan for demilitarization/disposal

ESOH Policy Requirements

- Programmatic ESOH Evaluation (PESHE)
  - Updated at major milestones and must document:
    - Strategy for integrating ESOH considerations into the systems engineering process
    - Identification of ESOH responsibilities
    - Identification of ESOH risks
    - Method for tracking progress in the management and mitigation of ESOH risks
    - NEPA/EO 12114 Compliance Schedule

ESOH Policy Requirements

- USD(AT&L) Memorandum, Defense Acquisition System Safety, 23 September 2004
  - DoD Standard Practice for System Safety, MIL-STD-882D, must be used in all developmental and sustaining engineering activities
  - Systems Engineering Plan must include the strategy to integrate ESOH risk management into the systems engineering and overall risk management processes
  - ESOH risk status and acceptance decisions must be reported at technical reviews and in the Program Review Process

Acquisition ESOH Activities

- Program oversight and assistance
- ESOH risk acceptance policy
- Guidance – DAG and ACC
- Acquisition education and training – DAU
- System safety process – MIL-STD-882
- System safety-ESOH management evaluation criteria

Activities: Oversight

- Participate in MS and program review process
  - Attend program WIPT/OIPT/DAB
  - Review documents for ESOH coverage
    - PESHE and Acquisition Strategy
  - Exploring cooperation on DAPS and SEP Reviews
  - Work with programs to
    - Clarify DoD 5000 ESOH policy requirements
    - Emphasize integration of ESOH into SE
    - Focus on ESOH risk management

Activities: Risk Acceptance

- Draft revision to system-related ESOH risk acceptance policy to clarify existing DoD system-related ESOH risk acceptance requirements
  - Requires the user representative to be part of the ESOH risk acceptance process
  - Requires the user representative to formally concur with all Serious and High ESOH risk acceptance decisions
  - Requires formal acceptance of ESOH risks prior to exposing people, equipment, or the environment to a known system-related ESOH hazard

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Activities: Guidance

- **Defense Acquisition Guidebook**

  – System Safety Analyses added as Input and Output on systems engineering Vee-charts

  – Incorporate ESOH steps/activities into Section 4.3 Systems Engineering Activities and 4.4 Design Considerations

  – Update Section 4.4.11 ESOH

- **Acquisition Community Connection (ACC)**

  – Update and expand ESOH Special Interest Area

Activities: DAU Curricula

- System Safety in Systems Engineering Continuous Learning Module (April 2005)
  - Identifies System Safety activities supporting each of the SE activities in each phase of a systems life cycle
  - Course (CLE009) available on-line http://www.dau.mil/basedocs/continuouslearning.asp

- Conduct review of prioritized courses and provide ESOH input consistent with current policy
  - Acquisition core, SPRDE, Program Management, Acquisition Logistics, and Test and Evaluation

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Activities: MIL-STD-882

- DoD Acquisition ESOH IPT had concerns with "E" version and agreed to revise
  - More clearly reflect DoD intent of document
  - Connect to all segments of SE and ESOH
  - Clarify "ESOH" is an acronym, not a discipline
  - Return Section 4 (only) to 882D language and revise only as necessary for currency with DoD policy
  - Include some tasks as non-mandatory guidance
  - Standardize risk definitions

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Activities: Evaluation Criteria

- Focus on assessing overall management of System Safety - ESOH considerations as a part of the SE process – not specific ESOH risks

- Established four evaluation categories
  - ESOH Planning
  - ESOH Hazard Identification, Analysis, and Risk Acceptance
  - ESOH Requirements for the System and Associated Infrastructure
  - Personnel and Funding for ESOH

Activities: Evaluation Criteria

- Metrics for the four evaluation categories were developed for each acquisition phase

- Selected key activities or documentation that would be a strong indicator of a system safety (E, S, and OH) for each acquisition phase, and rated them as Green, Yellow, or Red (G/Y/R)

- Weighted each category metric for summing to a single overall rating (G/Y/R) for each life cycle phase

Activities: Evaluation Criteria

Four Categories covered in O&S Phase

ESOH Planning	ESOH Hazard Identification, Analysis, and Risk Acceptance	ESOH Requirements for the System and Associated Infrastructure	Personnel and Funding for ESOH
What are the mishap rates for class B and C mishaps during the reporting period, and how many class A mishaps for the system or subsystem occurred during the current calendar year? Green – No class A mishaps; no increase in mishap rates for either class B or C as compared to the prior calendar year Yellow – No class A mishaps; Mishap rate increasing for either class B or C mishaps as compared to the prior calendar year. Red – One or more class A mishaps reported in the current calendar year class A mishaps reported.	What is the highest risk category, are there any system level hazards with formally accepted high risks, and are there any system level hazards without formal risk acceptance? Green – No hazards with formally accepted high risks and no hazards without formal risk acceptance Yellow –One or more hazards with formally accepted high risks, or any hazards with medium and low risks that have not been formally accepted Red – One or more hazards with serious or high risks that have not been formally accepted	How many open technical data change requests (e.g. Technical Orders, Technical Manuals, etc.) have been submitted through the formal technical data change system to resolve hazardous material or safety issues for the system? Green – All open requests were received during the last six months Yellow – One or more requests has been open for six – 12 months Red – one or more requests have remained open for more than 1 year.	What is the level of effort (LOE) in man-years (recurring) expended by the program (organic, matrix, and contract) for environment, safety, and occupational health (ESOH) management? Green – constant LOE compared to the prior fiscal year. Yellow – decreasing LOE compared to the prior fiscal year. Red – zero LOE

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Activities: Evaluation Criteria

ESOH Hazard Identification, Analysis, and Risk Acceptance Category across all Phases

Concept Refinement	Technology Development	System Development and Demonstration	Production and Deployment	Operations and Support
Is there a Preliminary Hazard List (PHL) developed for each concept and is it used in developing the Analysis of Alternatives (AoA)? Green – Yes Yellow – Incomplete PHL or complete PHL, but not used to influence the AoA Red - No	Does the updated PHL evaluate enabling/critical technologies? Green – Yes Yellow – Some, but not all, of the enabling/critical technologies have been assessed for ESOH hazards Red - No	Are the appropriate levels of hazard analyses completed and presented at each major design review? For example, is the Preliminary Hazard Analysis (PHA) completed and status of hazards presented at Preliminary Design Review (PDR), the majority of hazard analyses completed and presented at Critical Design Review (CDR), and status of ESOH risks presented at Production Readiness Review (PRR)/System Verification Review (SVR)? Green – Yes Yellow – Not all the necessary hazard analyses have been completed, and/or presented at the design reviews Red – No, hazard analyses have not been completed in time to influence the design review process	Has the program (1) continued to evaluate the system's test and operational performance to identify new hazards, (2) continued to track all hazards, and (3) obtained formal acceptance, at the appropriate management levels, of all residual ESOH risks and communicated those risks to the receiving activities? Green – Yes Yellow – Satisfying two of the three criteria Red – Satisfying one or none of the three criteria	What is the highest risk category, are there any system level hazards with formally accepted high risks, and are there any system level hazards without formal risk acceptance? Green – No hazards with formally accepted high risks and no hazards without formal risk acceptance Yellow –One or more hazards with formally accepted high risks, or any hazards with medium and low risks that have not been formally accepted Red – One or more hazards with serious or high risks that have not been formally accepted

Activities: Evaluation Criteria

- Published an OSD Guide version 1.0
  - Technical and Program Reviews (self assessment)
  - Milestone Review Process (oversight assessment)
- Working with AT&L SSE to incorporate into the Defense Acquisition Program Support (DAPS) SE Assessment Methodology
- Include in:
  - Acquisition Community Connection, Defense Acquisition Guidebook, DAU curricula

Questions?

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ODUSD(I&E) Perspective

- Integrating ESOH considerations into systems engineering early in the acquisition process:
  - Protects military and civilian personnel by reducing hazards/risks to personnel and equipment
  - Reduces accidents proactively
  - Improves warfighting capability and combat readiness
  - Reduces total ownership costs
  - Lowers risk of environmental damage
  - Prioritizes hazards for corrective action
  - Reduces need for system retrofits

Activities: MIL-STD-882

- MIL-STD-882D, FEB00, DoD Standard Practice for System Safety

- Use of "D" version is mandatory for DoD

- Product of Specs & Stds reform
  - 7 of 26 pages mandatory
  - Prescribes "What" not "How"
  - Not popular with many System Safety practitioners

- Preparing Activity sent out final draft "E" version out for informal review
  - Significant departure from MIL-STD-882D
  - G-48 "E" version seeks to restore lost guidance on "How" from "C" rejected during Acquisition Reform

- DoD Acquisition ESOH IPT asked to review by Lead Standardization Activity

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