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MIL-STD-882E:
Putting 882E on Contract

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Agenda

- Requirement to Use MIL-STD-882E
- Putting Mandatory Sections on Contract
- Putting the Optional Tasks on Contract
- Summary

Requirement to Use MIL-STD-882E

- Per DoD Instruction 5000.02, E12.6, date 8 Dec 2008
  - "The Program Manager (PM) shall integrate ESOH risk management into the overall systems engineering process for all developmental and sustaining engineering activities. As part of risk reduction, the PM shall eliminate ESOH hazards where possible, and manage ESOH risks where hazards cannot be eliminated."
  - "The PM shall use the methodology in MIL-STD-882D (now E), "DoD Standard Practice System Safety."
  - "The PM for all programs, regardless of ACAT level, shall prepare a PESHE which incorporates the MIL-STD-882D process and …"
- The DoD requirement is for all programs to use the system safety methodology (i.e. process) in MIL-STD-882E for ESOH risk management.
  - This does not mean the Standard must be put on contract, but it does mean the ESOH risk management process must use the process in MIL-STD-882E.

There is no requirement to put MIL-STD-882E on contract

Putting Mandatory Sections on Contract

- However, if the Government wants the Contractor to use the MIL-STD-882E methodology, the Government needs to specify it in the contract.
- Placing MIL-STD-882E on contract is an efficient way to instruct the contractor to meet the DoD policy requirement.
- When MIL-STD-882E is required in a solicitation or contract, only the following Sections apply:
  - Section 3 – Definitions, and
  - Section 4 – General Requirements.
- Section 4 includes System Safety Requirements, System Safety Process (the eight elements), and Software Contribution to System Risk.

Putting Mandatory Sections on Contract, Cont.

- Contractors may prefer to use ANSI-GEIA-STD-0010, Standard Best Practices for System Safety Program Development and Execution, or internal corporate system safety standards.
  - To anticipate this contingency, the RFP should require the contractor to demonstrate how its proposed alternative meets the minimal mandatory requirements in MIL-STD-882E Section 4.
  - The RFP could preclude the use of alternative standards in order to avoid the potential for future disconnects with risk acceptance authorities, safety review boards, program support reviews, etc.
- RFPs that require the use of MIL-STD-882E should identify the program's approved risk assessment matrix (to include the descriptions for each severity category and probability level) if it is not the one specified in MIL-STD-882E.

Putting the Optional Tasks on Contract

- There are 25 optional Tasks in MIL-STD-882E.
- These Tasks add additional detail to the system safety process requirements in Section 4.
- The ESOH staff will have to be prepared to justify the cost of adding optional Tasks to a contract based on the value added to the program.
  - May have to address this with the Program Manager, Lead Systems Engineer, contract administrator, and budgeting staff.
  - A strategy may be to include the optional Tasks in the Request for Proposal (RFP) and make a final determination on including the tasks on contract based on the respondent's price for each optional Task.

Note: A contractor's response to a RFP may include recommendations to add optional tasks not requested in the RFP.

Task Section 100 - Management

- Task 101 Hazard Identification and Mitigation Effort Using The System Safety Methodology
- Task 102 System Safety Program Plan
- Task 103 Hazard Management Plan
- Task 104 Support of Government Reviews/Audits
- Task 105 Integrated Product Team/Working Group Support
- Task 106 Hazard Tracking System
- Task 107 Hazard Management Progress Report
- Task 108 Hazardous Materials Management Plan

Task Section 200 - Analysis

- Task 201 Preliminary Hazard List
- Task 202 Preliminary Hazard Analysis
- Task 203 System Requirements Hazard Analysis
- Task 204 Subsystem Hazard Analysis
- Task 205 System Hazard Analysis
- Task 206 Operating and Support Hazard Analysis
- Task 207 Health Hazard Analysis
- Task 208 Functional Hazard Analysis
- Task 209 System-of-Systems Hazard Analysis
- Task 210 Environmental Hazard Analysis

Task Sections 300 – Evaluation

- Task 301 Safety Assessment Report
- Task 302 Hazard Management Assessment Report
- Task 303 Test and Evaluation Participation
- Task 304 Review of Engineering Change Proposals, Change Notices, Deficiency Reports, Mishaps, and Requests for Deviation/Waiver

Task Section 400 - Verification

- Task 401 Safety Verification
- Task 402 Explosives Hazard Classification Data
- Task 403 Explosive Ordnance Disposal Data

Putting the Optional Tasks on Contract, Cont'd

- Assessing the need to include optional Tasks on a contract
  - The basic system safety process is already required as described in Section 4
  - Reasons for adding optional tasks:
    - Ensure the Contractor performs certain tasks in a specified manner, e.g.
      - Task 106 - Hazard Tracking System (HTS)
      - Task 304 – Review of Engineering Change Proposals, Change Notices, Deficiency Reports, Mishaps, and Requests for deviation/waiver
    - Respond to the complexity of the system, e.g.
      - Task 203 – System Requirements Hazard Analysis
      - Task 208 – Functional Hazard Analysis
      - Task 209 – System-of-Systems Hazard Analysis
    - Specific types of systems , e.g., for ordnance systems consider
      - Task 402 – Explosives Hazard Classification Data
      - Task 403 - Explosive Ordnance Disposal Data

Putting the Optional Tasks on Contract, Cont'd

- Assessing the need to include optional tasks on a contract, Cont.
  - Reasons for adding optional tasks, Cont.:
    - Concerns about potential Contractors' ESOH capability, e.g.
      - Task 103 - Hazard Management Plan
      - Task 106 – Hazard Tracking System
    - Potential for high consequence mishaps, e.g.
      - Task 202 – Preliminary Hazard Analysis
      - Task 203 – System Requirements Hazard Analysis
      - Task 204 – Subsystem Support Hazard Analysis
      - Task 205 – System Hazard Analysis
      - Task 206 – Operating and Support Hazard Analysis
    - Potential for significant environmental impacts, e.g.
      - Task 108 – Hazardous Materials Management Plan
      - Task 210 – Environmental Hazard Analysis

Suggested Key Tasks

- For a “typical” DoD acquisition program where the potential Contractors have demonstrated ESOH capabilities, putting only the basic 882E with the mandatory Sections 3 and 4, should be sufficient
  - Section 4 describes the system safety methodology required by DoDI 5000.02
  - 882E significantly increased the detailed descriptions of each of the eight elements of the methodology and added the software contribution to system risk
- However, to enhance the integration of ESOH considerations into systems engineering, programs should consider these optional Tasks
  - Task 105 - Integrated Product Team/Working Group Support
  - Task 304 - Review of Engineering Change Proposals, Change Notices, Deficiency Reports, Mishaps, and Requests for Deviation/Waiver

Summary

When MIL-STD-882E is required in a solicitation or contract but no specific task is identified only Sections 3 and 4 are mandatory.

- Section 3 contains definitions
- Section 4 describes the eight elements of the system safety methodology plus the software contribution to risk

The DoD priorities for using the system safety methodology in MIL-STD-882E are the following:

- The ESOH management effort has to be fully integrated into all aspects of the systems engineering processes of a program
- The HTS is the fundamental core product that demonstrates the effective and efficient implementation of the system safety methodology for managing ESOH risks

Questions?

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