

Systems Engineering and NEPA: We Need a Joint Process for Acquisition Programs

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Systems Engineering and The Missing Link

- The Systems Engineer: “I have a capability to design...nothing else matters.”
- The Logistician: “I have to sustain the capability...spares and consumables must be delivered.”
- The Installation Environmental Engineer: “I wonder what this thing is? Hey, I just found this in the dumpster, anyone recognize it? What do you mean it’s radioactive!!! Holy...”





Environmental Risks

- Systems Engineering and Logistics
 - Systems Engineering selects Materials, Chemicals and Processes
 - Recognized Risk – Constraints on Production Processes or Personnel Exposure
 - Configuration defines Operations and Support
 - Recognized Risk – Non-availability of a Consumable or Transportation Constraints
- Installation Management and Operations
 - Operations and Support define Natural Resource Impacts
 - Un-recognized Risk – Inability to Operate, Support, Test or Train
- Environmental Risks Begin Early in Technology Development





How Systems Engineering Impacts Installation Management

- Engineering
 - Are “new” materials and compounds are required as part of system operation and maintenance?
- Configuration
 - Does system operational size (e.g. weight, width, etc.) or maintenance area requirements differ from currently fielded systems?
- Constraints
 - Does the system require test or training conditions (e.g. training objectives, test requirements, etc.) that differ from current test or training conditions?
- Management/Mission
 - Does the system have a mission that is strictly unique to the system and no other fielded system (e.g. increased mobility and/or range of operation)?





The Important SE Data

- General System Characteristics
 - Wheeled vs. Tracked
 - Mobile vs. Stationary
- Hazardous Materials
- Fuels, Lubricants, Gases
- Munitions
- Power Demands
- Water Demand
- Optempo/Training Scenarios
- Infrastructure Carrying Capacities
 - Facilities
 - Landscapes
 - Fording
 - Surface Danger Zones
- Emissions and Wastes
 - Air/Water/Land
 - Noise
 - Hazardous/Radioactive/Biological





National Environmental Policy Act (NEPA) and Army Acquisition

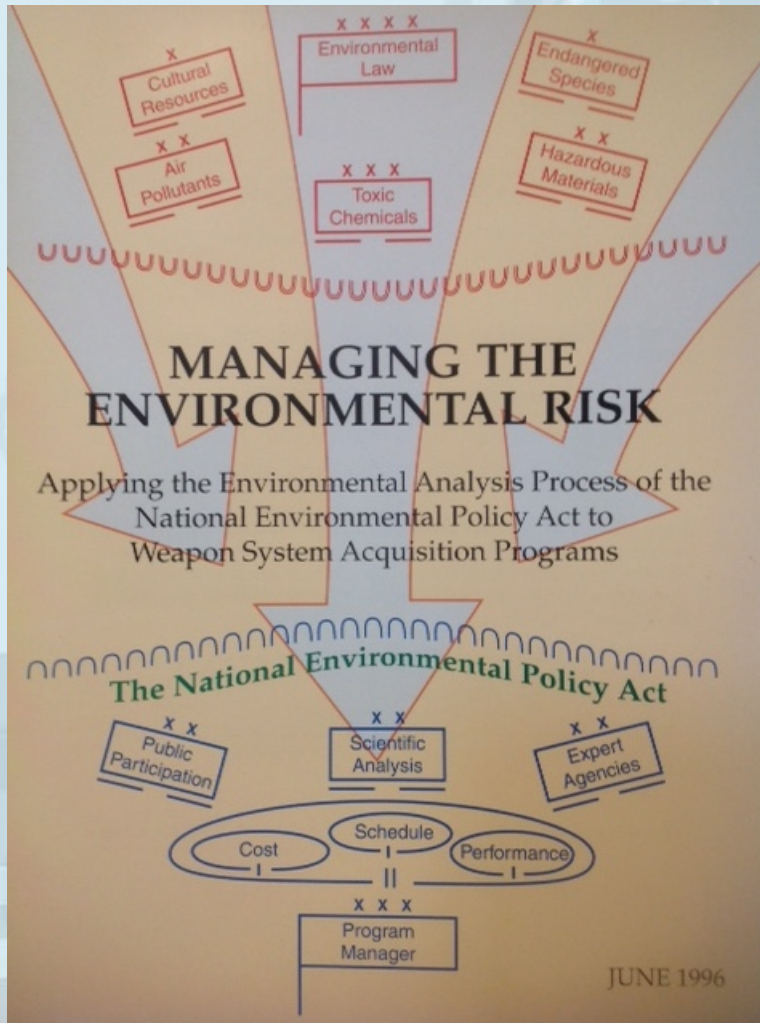
ATTACHMENT 1

ESOH Information to Support Materiel Fielding
(June 1, 2002, ASA(ALT) Digital Library)

General Characteristics

Installations are already operating under constraints and adding new equipment may increase those constraints. General characteristics of the system are used to estimate cumulative ESOH impacts when new materiel is added. Installation ESOH professionals will begin negotiating permit modifications with local regulators so system operation can begin immediately with minimal ESOH constraints. The PM should attempt to answer the following:

1. What is the system?
2. What does it do?
3. How many systems will be procured?
4. What locations will receive the system?
5. What units will receive the system?
6. How many systems will be fielded to each unit?
7. What is the time frame for fielding at each location and unit?
8. What mission equipment is installed on the system?
9. Are there types and variants on the basic platform?
10. Has the vendor documented hazardous materials in system?
11. Has the vendor documented hazardous materials in system support?
12. Has the vendor documented hazardous materials in system mission equipment?
13. Has the vendor documented hazardous materials in system mission equipment support?
14. Are any specially classified materials used in design, configuration and support of the system?
15. Are the systems mobile or stationary?
16. Will the system be self-propelled?
17. Will the system require transportation?
18. What are the size characteristics of the system?
 - a. Total surface area?
 - b. Length, width, height
 - c. Ground clearance?
 - d. Turning radius or maneuver restrictions?
19. What are the weight characteristics of the system?
 - a. What is the weight distribution?
 - b. What are contact surface characteristics (size, shape)?
 - c. For vehicles, is the system wheeled or tracked?
20. What are the storage characteristics of the system?
 - a. Fuel capacity?
 - b. Fluid capacity (oils, lubricants, anti-freeze, coolants, etc.)?
 - c. Munition capacity and type(s)?
21. What is the anticipated operational tempo for the system?
22. What is maximum range and maximum effective range of weapon systems?
23. What times of the year will system be used and how often?
24. How many hours of operation are anticipated during training or between maintenance actions?



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Service NEPA Regulations

- 3 Services, 3 Regulations, 3 Approaches Plus the USMC Manual
 - Differences in Application of CATEXs
 - Army Acquisition Only
 - Record of Environmental Consideration
 - Programmatic Environmental Assessment
- Differences are Primarily Procedural
 - Cause Potential Conflicts as Milestones Approach
- All Focus on Events within Acquisition Schedules
 - Support the Decisions for those Events





What are Some of the Differences?

- When to use particular document types
 - EA vs. EIS vs. CATEX
- Level of Detail in Regulations related to the Use of EAs
 - Army's regulation is very detailed on what to include and when to use an EA
- Use of Programmatic Documents
 - Army tends to use Programmatic EAs for weapon system acquisition programs
 - Cover general system related impacts
 - Installations are responsible for site-specific NEPA
- Lists of CATEXs are significantly different
 - Examples:
 - Testing of weapon systems as long as it is similar to past actions that had no significant impact
 - Training w/ weapon systems as long as it is similar to past actions that had no significant impact
 - Decommissioning/Disposal of military equipment as long as it is IAW applicable regulations





What are Some of the Differences? (cont.)

- Army's use of a REC
 - Other agencies' CATEX documentation is similar
- Funding Requirements for Acquisition related NEPA documentation
 - Army regulation
 - PM will fund NEPA documentation related to generic vehicle programmatic environmental assessment (PEA)
 - Receiving installations are responsible for Site-specific NEPA documentation including funding





Scenario 1

- USMC is the lead agency of Joint program with the Army
 - Testing is being done at Army test site and Army does not have the Testing CATEX
 - Does the Army test site fall under the USMC CATEX since USMC is the lead agency?
 - From past experience, Army Test Site still prepares a REC based off of their existing EIS and does not use the CATEX
 - However, there could be a situation when an event has not already been covered by the test site's EIS





Scenario 2

- Army is the lead agency for a new truck program with the USMC participating
 - Army regulation would lead to the preparation of a Programmatic Environmental Assessment (PEA) funded by the PM
 - Army regulation requires that site-specific NEPA documentation be prepared and funded by the receiving installations
 - When preparing an EA, the USMC typically addresses the site-specific NEPA analysis as a part of the document or as appendices to the PEA
 - In this situation, who is responsible for preparing site specific NEPA documentation for USMC installations?





Current Guidance for Joint Programs

- 40 CFR 1501.5
 - Lead agency shall supervise the preparation of an EIS if more than one Federal agency is involved in the same action
- DoDI 5000.02 states....
 - *“The CAE (or for joint programs, the CAE of the Lead Executive Component) or designee, is the approval authority for system-related NEPA and E.O. 12114 documentation.”*
- *“Follow the Lead Agency’s Policy....”*





So, What's the Problem?

- The number of Joint Programs is growing
- “Follow the lead Agency” ...is not enough
- Better NEPA guidance is needed
 - Joint Regulation?
 - Joint guidance document?
 - Joint Process for Acquisition?





Path Forward for the Army

- Acquisition Community
 - Integrate and Align ESOH in Systems Engineering Analysis
 - Propose New CATEXs similar to USMC
 - Propose New NEPA Decision Process
 - CATEX/REC/PEA
 - Experience Points toward CATEX
 - Maintain Focus on Installation Data Needs
- Installation Community
 - Evaluating New Acquisition NEPA Procedures
 - Potential Change in NEPA Training
- Propose Joint Service Process to the DoD Acquisition ESOH IPT





Closing Thought

- “If I pollute, the enemy knows I was there.”
- “If I pollute, the local community does not want me there.”

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