NASA's Agency-Wide Strategy for Environmental Regulatory Risk Analysis and Communication

Kristen Duda
CH2M HILL
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Agenda

- Overview: NASA Program Transition
- Overview: Principal Center for Regulatory Risk Analysis and Communication (RRAC PC)
- Regulatory Tracking and Communication Process
Program Transition

- **Vision:**
  - “To advance U.S. scientific, security, and economic interests through a robust space exploration program.”

- **NASA Strategic Goals 2006-2016, NASA 2006 Strategic Plan**
  - Complete International Space Station
  - Safely fly Space Shuttle until 2010
  - Develop and fly Crew Exploration Vehicle before 2014
  - Return to the Moon before 2020
  - Promote international and commercial participation
  - Develop supporting innovative technologies, knowledge, and infrastructures
  - Implement sustained and affordable human and robotic programs
Program Transition

• NASA plans for the Constellation Program’s vehicle designs to have long service lives
  ➢ Even more important to incorporate sustainable designs to avoid future regulatory issues and operational obsolescence
  ➢ Important to consider:
    ➢ *Materials selection to avoid obsolescence*
      • Design for obsolescence avoidance in long service-life programs
      • Minimize environmentally high-risk materials
RRAC PC Overview

- NASA’s Agency-wide resource for identifying and managing risks associated with changing environmental regulations

- Goals of the RRAC PC
  - Proactively detect, analyze and communicate environmental regulatory risks to NASA Programs and facilities
  - Communicate with regulators and participate in the mitigation of such risks
  - Provide centralized support on emerging regulations to NASA HQ Environmental Management Division
RRAC PC Focus in Perspective

Risks posed *by* the Program to the environment

- Identified under NEPA through the Environmental Impact Statement (EIS) process prior to Program inception
- The EIS describes programmatic options and addresses environmental considerations associated with each, usually in a one-time effort

Risks posed *to* the Program by environmentally-related drivers

- On-going effort through the life of the Program
- Risk to Program grows with time due to changes in laws and regulations
- Active participation in legislative and rulemaking processes reduces Program risk
Regulations Can Drive Program Risks

• Changing regulations have the potential to affect program activities directly and indirectly

➢ Could restrict certain activities, operations, or right to operate

❖ *Changes in operational activities*
  • High-efficiency spray equipment
  • Quantities of thinner allowed for coating application

❖ *Limitations on where or how operations can take place*
  • In spray booths rather than “in the field”
  • Require dipping or brushing instead of spraying

❖ *Changes to protective equipment requirements*
Regulations Can Drive Program Risks

➢ Could affect availability and usage of materials
  - Production phase-out or restriction on ability to apply or use materials
    • ODSs, brominated flame retardants, and others
  - Formulation changes by vendors to critical materials and/or components
    • Despite contractual notification clauses, can happen without notification
  - May require material replacement efforts
    • Replacement costs; potential schedule impacts; potential performance variance
Regulatory Tracking Process
RRAC PC Regulatory Monitoring

• Evolving applicability and relevance guidelines
  ➢ Programmatic
    ❖ human spaceflight, other space vehicles, aeronautics programs
    ❖ direct and indirect impacts
    ❖ critical supply chain issues
  ➢ Facilities
    ❖ NASA Centers
    ❖ Other critical processing facilities
    ❖ Emergency landing sites abroad

Lesson Learned

Recognize that the requirements of Programs and supporting Facilities CHANGE and that those changes can affect the applicability of emerging regulatory requirements

• Example: Regulatory applicability thresholds
Regulatory Tracking Process

RRAC PC Regulatory Monitoring

- Monitor emerging regulatory information from appropriate sources
  - “Official” Sources
    - Federal Register, Semiannual Regulatory Agenda, State regulatory notices
    - Other countries and international organizations
  - Other Sources
    - Regular communication with regulators
    - Networks with other stakeholders, especially other Federal agencies
    - Global trends

1. Statutory and regulatory requirements CHANGE
2. Just because a requirement doesn’t affect you directly, doesn’t mean it will not impact your operations at some point in time
3. The best information on emerging requirements is often found on the “grapevine”
   - Example: European Union regulations and international partnerships

Lessons Learned
When significant regulatory changes are identified, timely communication is essential.

- Communication of changing requirements to the regulatory stakeholders – NASA Programs and Facilities
- Communication of potential issues to management and, when appropriate, back to the regulating agency
Regulatory Communications Process

RRAC PC Regulatory Communication

• Communicate regulatory changes to the affected NASA Community
  ➢ General alerts and summaries
  ➢ Specifically-targeted technical working groups

• Solicit feedback on potential impacts from emerging regulatory changes
  ➢ Direct or indirect impacts
  ➢ Short-term or long-term
  ➢ Include worst-case scenario

1. Insist on knowing your technical community; they are the ones who know when a “potential impact” becomes an “issue”
2. For potentially mission-critical impacts, don’t assume the information will filter to the right person or organization – HUNT THEM DOWN
3. Don’t assume your Program is immune just because the requirement doesn’t directly affect you – you rely on your SUPPLY CHAIN
4. In determining potential impacts, be twice as pessimistic as the life of your Program
Regulatory Communications Process

RRAC PC Regulatory Communication

- Communicate identified impacts to management
  - Assess mitigation options
  - Follow the “greenest” path that still meets Mission requirements
- When necessary, communicate issues to regulators
  - Sometimes mission-critical technical performance or safety-related factors must be considered
  - Collaboration with regulators can produce effective, innovative regulatory solutions

1. Honest, open bilateral communications with regulators is essential
2. Focusing on technical requirements, data, and Mission success goes a long way toward establishing credibility
3. A clear, proven COMMITMENT TO DO THE RIGHT THING speaks volumes
RRAC PC Lessons Learned

• Programs and Centers are dynamic… so are regulations
  ➢ Just because regulations may not initially apply does not mean they will not in the future
  ➢ Just because regulations may not directly affect operations does not mean they won’t affect the program indirectly through the supply chain

• Communication is key when it comes to regulatory impacts
  ➢ Up and down the chain of command to ensure the right organizations and people are informed

• Maintaining a “do the right thing” commitment is critical to the long-term success of programs and should be a significant part of a strategy for compliance
Questions?

- For further information, please contact:
  Sharon Scroggins, NASA/MSFC
  256-544-7932
  sharon.scroggins@nasa.gov

http://www.rracpc.org/