System Safety, Reliability, and Quality Assurance

Presentation to
Process Control Team

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Overview

- Supplier Assessment Organization Structure
- Procurement
- The Five Functions of Supplier Assessment
- Supplier Assessment Cause and Effect
- Supplier Assessment Leveraging
- Supplier Assessment The Bottom Line
Supplier Assessment
Organization Structure Within NASA
(SSP/Orbiter Example)
Procurement

Comparison on NASA Procurement
Total Procurement = 11 Billion out of 13.5 Billion Budget
Procurement

NASA Procurement Spending
FY 2000 Forecast

Level 3 (greater then $5 million)
Level 2 (between $5 million and $1 million)
Level 1 (under $1 million)
Procurement

Type of Level 3 Contracts

- Service: 61%
- Supplies: 6%
- R&D: 33%
The Five Functions of Supplier Assessment

“or” gates represent risk decisions based on confidence in supplier and complexity/criticality of the products/processes involved.
Supplier Assessment - Cause and Effect

Things That Effect Supplier Assessments

- People
- Process
- Environment
- Communication
Supplier Assessment Environment

- **Dependence on Prime's**
  - Top Two Prime's Represent 40% of the Contract Dollars
  - Only 72 R&D Contractors Over $5 Million
  - 80% of NASA's Budget is spent on Procurement

- **Information Security**
  - Competitive Information
  - ITAR
  - Proprietary Information

- **Acquisition Reform**
  - Insight versus Oversight
  - Risk Based Requirements (less standardization)

- **Voluntary Consensus Standards**
  - Performance Based Product not Process Oriented

- **Reduction in Requirements**
  - Voluntary Consensus Standards

- **Assessment Environment**
  - 6,000 DCMA Delegations
  - 60% of Contracting Goes to Sub Tier

- **Faster Better Cheaper**
  - (short schedules, tight cost)

- **Need for Timely Assessment Support**

- **Basic Quality Management System (ISO)**

- **Supplier Advanced Practices**

- **Quality Management System Framework**

- **Need for Flexible Assessment Support**

- **Product Specific Elements**

- **Higher Content Work Being Performed by Sub Tier**

- **Space Shuttle 5 Prime Contractors Have Over 600 Sub Tier**

- **60% of Contracting Goes to Sub Tier**

- **Sub Tier Work**

- **Quality Management System Framework**

- **Assessment Environment**
Supplier Assessment

Resources

- Quality Resource Alignment
- Product Process Technical Support
- Design Engineers
- Materials and Process Specialist
- Technology Specialists (EEE Parts Engineers for Example)

Program/Project S&MA
- Contract
- Program/Project Policy Direction
- QE and QA
  - Functional Support To The Projects/Programs

Center S&MA/QA
- Contract TMR/COTAR
- Agency
- Policy and Procedures
- Techniques, Tools, Training
- Advocacy
- Representation

NASA HQ
- Code Q
- Agency
- Policy and Procedures

- Techniques, Tools, Training
- Advocacy
- Representation

Quality Resource Availability
- About 300 NASA S&E S&MA Staff
- About 300 DCMA FTE Field Surveillance
- About 100-200 NASA Inspectors
- Support Contractors
- Prime Contractor Assessment Of Sub Tier
- Contractor Self Assessment
- Supplier Assurance Contract (SAC)
Supplier Assessment
Communication
Supplier Assessment
Leveraging

Individual Supplier Assessments May Find a Few Problems

Coordination across the Agency and emphasis on Prime flow down to Sub Has the Potential of Impacting a Broader Base of Activity

Emphasis is on Supplier Self Evaluation and Correction

Supplier Quality Management System
NASA has multiple organizational supplier assessment interfaces

NASA has five supplier assessment functions that need to be coordinated and implemented on a risk priority bases

Commonality in environment, people, process, and communication within NASA offers opportunities for coordination, sharing, and leveraging of supplier assessment functions

Areas to be discussed

- Shared information on assessment scheduling
- Shared information on assessment results
- Shared resources for conducting assessments
- Common approaches to
  - Quality Requirement Flow Down
  - Quality Management Systems/Assessments
  - Product/Process Audits
  - Surveillance
  - Process Control