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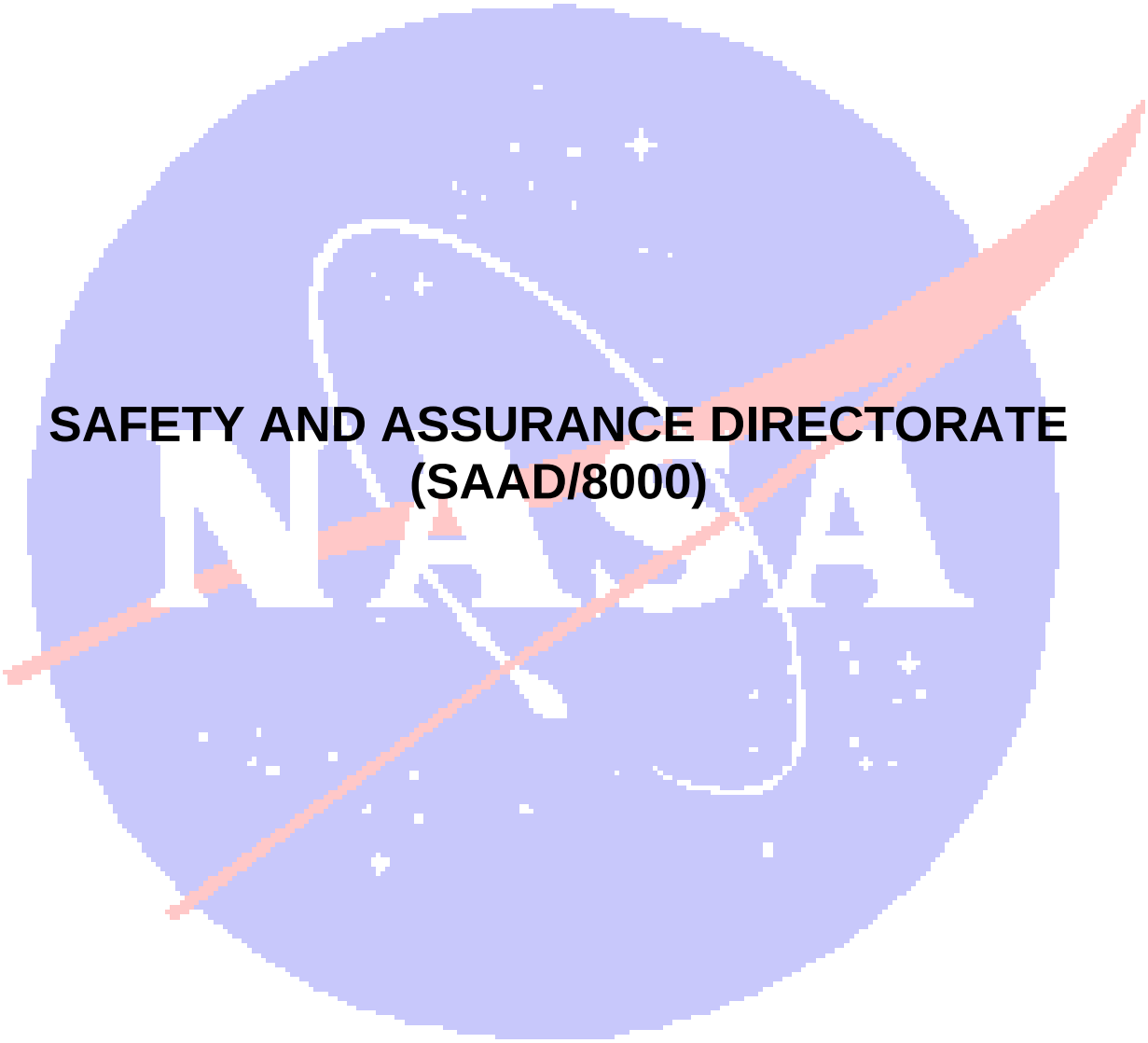

SAFETY AND ASSURANCE DIRECTORATE (SAAD/8000)

ANNUAL OPERATING AGREEMENT (AOA)
FY 2004

The undersigned parties have approved this Annual Operating Agreement that specifies the safety, security, environmental, risk management, and quality assurance products and services provided by the NASA Glenn Research Center, Safety and Assurance Directorate in support of the Center's aeronautics and space programs.

Vernon W. Wessel

DIRECTOR OF SAFETY AND ASSURANCE DIRECTORATE
NASA GLENN RESEARCH CENTER

Julia M. Earls

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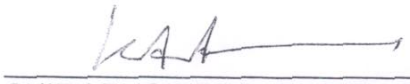
CODE Q/ASSOCIATE ADMINISTRATOR FOR SAFETY AND MISSION ASSURANCE

CODE R/ASSOCIATE ADMINISTRATOR FOR AEROSPACE TECHNOLOGY

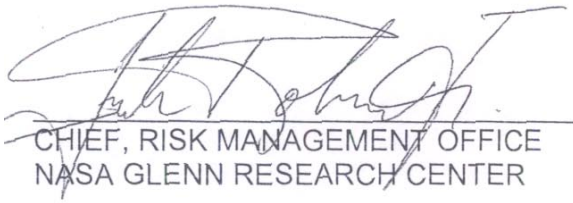
CODE J/ASSISTANT ADMINISTRATOR FOR MANAGEMENT SYSTEMS

CODE X/ASSISTANT ADMINISTRATOR FOR SECURITY MANAGEMENT AND SAFEGUARDS

This Annual Operating Agreement has been prepared and adopted by the following GRC SAAD Staff:



CHIEF ENGINEER, SAFETY AND ASSURANCE DIRECTORATE
NASA GLENN RESEARCH CENTER



CHIEF, RISK MANAGEMENT OFFICE
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CHIEF, QUALITY MANAGEMENT OFFICE
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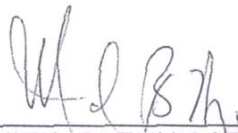

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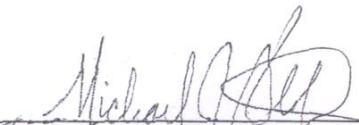

CHIEF, ENVIRONMENTAL MANAGEMENT OFFICE
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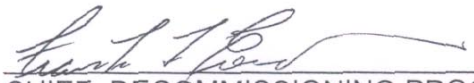

CHIEF, DECOMMISSIONING PROGRAM OFFICE
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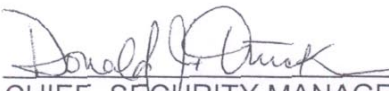

CHIEF, SECURITY MANAGEMENT AND SAFEGUARDS OFFICE
NASA GLENN RESEARCH CENTER

EXECUTIVE OFFICER, SAFETY AND ASSURANCE DIRECTORATE
NASA GLENN RESEARCH CENTER

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1.0 INTRODUCTION

The NASA Glenn Research Center Safety and Assurance Directorate Annual Operating Agreement (AOA) for FY04 establishes agreement among: The Director, NASA Glenn Research Center (GRC); the Director, Safety and Assurance Directorate (SAAD); the NASA Associate Administrator, Code Q, Office of Safety and Mission Assurance (OSMA); the NASA Associate Administrator, Code R, Office of Aerospace Technology; the NASA Assistant Administrator, Code J, Office of Management Systems; and the NASA Assistant Administrator, Code X, Office of Security Management and Safeguards. The AOA summarizes the Safety, Security, Environmental, Risk Management, and Quality Assurance products and services provided in support of GRC research and technology programs and the Center's institutional operations for FY04, and provides estimates for the out-years. The AOA details SAAD activities and processes, the metrics that will be used to gauge success, key deliverables for FY04, resources for FY04, and resource planning for FY04 through FY08.

1.1 PURPOSE

This Agreement outlines GRC SAAD support of Center, Headquarters, and Agency programs, activities, and operations in furtherance of the goals and objectives of the six Enterprises. All of these are encompassed in the diverse work products of the GRC. With primary focus on aeronautics and space propulsion, SAAD also supports the Center's significant activities in Microgravity space science, International Space Station power and science utilities, space communications, power, and other technology developments. The Office provides assessment, assurance, oversight, and insight capabilities that enable the various cross-cutting processes and optimize the value of the contributions made at GRC. SAAD activities in support of these Enterprise Strategic Initiatives are reflected in the detailed descriptions found in Sections 2 through 7.

1.2 SAAD MISSION

The mission of the GRC SAAD is to promote and advance the goals of the Center, NASA, and the Nation: To meet and exceed the expectations of those who rely on us to assure product safety and quality, program mission success and a safe, secure, environmentally sound and healthful workplace. We accomplish this through the development and application of value-added practices and services that identify, manage, and mitigate risk.

1.3 SAAD GOALS, OBJECTIVES, AND MEASURES

1. Ensure a safe, secure, environmentally sound and healthful workplace for the employees and the community. Use incident/mishap frequencies and severity, close calls, and the cost of damaged property, as metrics to drive an effective Center Safety Program. Provide GRC workforce, visitors, and neighbors an environment free from the threat of safety and health hazards; meet all regulatory standards; and support both the GRC mission and quality of life.
2. Assure that safety requirements are met for all space flight projects and that program and project mission risks are consistent with NASA and Center goals.
3. Support the GRC Aeronautics Program by the application of appropriate Safety and Mission Assurance (SMA), Risk Management disciplines, and techniques to improve the likelihood of mission success.
4. Support the Space Power, Communications, and Propulsion Research Programs with appropriate SMA disciplines and risk reduction technologies.
5. Maintain SAAD as the Office of Excellence at GRC in the development, implementation, and maintenance of process control technologies and tools. Lead the Center to its fullest

understanding of the value of process controls to assure the success of GRC programs, operations, and activities.
6. Provide an array of SMA, environmental, and security products and services, which meet and exceed the expectations of our customers. Maintain the Center's registration to ISO 9001 and ISO 14001.
7. Seek and develop new technologies that can be applied to improve the SMA, Environmental Management, and Security disciplines, and will enhance the value added to program, operations, and facility support.

1.4 AOA ASSUMPTIONS

1. GRC will continue to perform significant work in support of NASA's initiatives in Aerospace Technology, Earth and Space Sciences, and the Human Exploration and Development of Space and Education.
2. SAAD is responsible for assuring the implementation of appropriate, adequate, and effective environmental, security, and SMA programs for GRC projects and operations. This is accomplished with the direction and support of Agency and Center Management.
3. SAAD is responsible for assuring that all GRC employees work in a safe, secure, and healthful environment.
4. Resources are planned consistent with the workforce and budget requirements at GRC.
5. Planned resources for civil servant complement, Research Operations Support, Program Support, Codes Q and R projects, and Construction of Facilities projects, will be available.
6. The internal and external regulatory environment will remain relatively stable, with regulatory requirements becoming somewhat more stringent over time.
7. Ongoing remedial investigations at GRC will not reveal significant new environmental hazards beyond those for which mitigation and remediation have been planned.

1.5 STRATEGIC LINKAGES

This AOA outlines a plan for FY04 that reflects the NASA requirements from top-level NASA and GRC documents as shown in Figure 1.0. Through these relationships, the AOA is directly linked to the goals and objectives contained in the NASA Strategic Plan and responds to the NASA Administrator's five questions relative to program viability:

1. How does it implement the NASA vision and mission?
2. What is the potential science or technical return?
3. What is the contribution to national needs and benefit to society?
4. Why NASA (and not someone else)?
5. Is this the right time?

The AOA references the ten goals of the NASA Strategic Plan for which SAAD will provide significant support during the year. Table 1.0 lists these goals and delineates the applicable AOA functional activities that relate to them.

Figure 1.0

SMA OPERATIONAL STRUCTURE

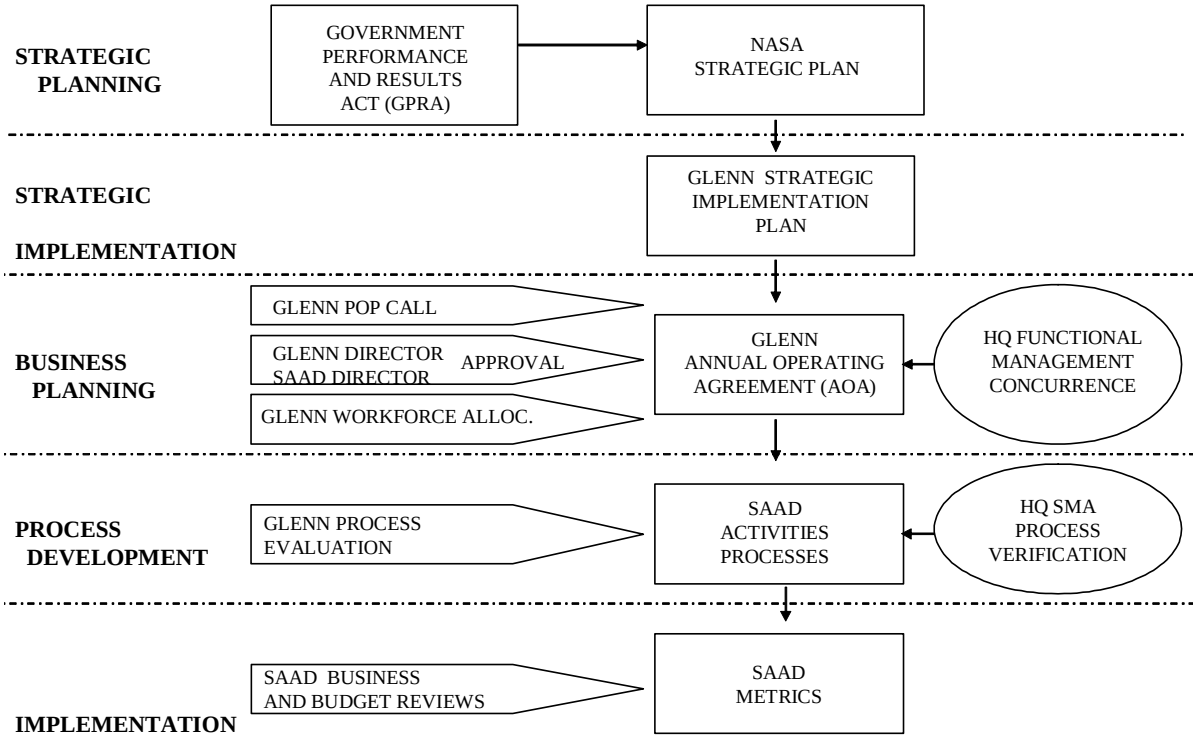


TABLE 1.0. AOA LINKAGES TO GRC STRATEGIC IMPLEMENTATION PLAN

	STRATEGIC PLAN GOAL	*AOA FUNCTIONAL ACTIVITY*
MISSION I		
1	Understand Earth's system and apply Earth system-science to improve the prediction of climate weather, and natural hazards.	3.1.3 MISSION AND SCIENCE MEASUREMENT (MSM)
2	Enable a safer, more secure, efficient, and friendly air transportation system.	3.1 AEROSPACE TECHNOLOGY
3	Create a more secure world and improve the quality of life by investing in technologies and collaborating with other agencies, industry, and academia.	3.1 AEROSPACE TECHNOLOGY
MISSION II		
4	Explore the fundamental principles of physics, chemistry, and biology through research in the unique natural laboratory of space.	3.2 BIOLOGICAL AND PHYSICAL RESEARCH ENTERPRISE
5	Explore the solar system and the universe beyond, understand the origin and evolution of life, and search for evidence of life elsewhere.	3.3 SPACE SCIENCE ENTERPRISE
MISSION III		
6	Inspire and motivate students to pursue careers in science, technology, engineering, and mathematics.	1.7.6 NASA SPACE ACT AGREEMENT-TUSKEGEE UNIVERSITY
7	Engage the public in shaping and sharing the experience of exploration and discovery	3.5.2 ASSURANCE TECHNOLOGY CENTER
ENABLING SERVICES		
8	Ensure the provision of space access and improve it by increasing safety, reliability, and affordability.	3.5 SAFETY AND MISSION ASSURANCE ENTERPRISE
9	Extend the duration and boundaries of human space flight to create new opportunities for exploration and discovery.	3.4 SPACE FLIGHT ENTERPRISE
10	Enable revolutionary capabilities through new technology.	3.5.5 RESEARCH TECHNOLOGY OPERATING PLANS (RTOPs)

1.6 EXECUTIVE SUMMARY

Six organizational offices, along with the Directorate-level staff office, comprise the Glenn Safety and Assurance Directorate (SAAD) and are delegated the responsibilities to meet the mission, goals, and objectives detailed in this AOA. Figure 2.0 summarizes the key activities and processes for each of SAAD's five division level offices. Sections 2 through 7 of this AOA provide an overview of the Division level offices and the Decommissioning Project Office planned operations, management issues and concerns, key FY04 deliverables, and associated metrics.

The Management Operations Staff Office (8000) is the focus for strategic, business, and resource allocation planning in the Office. The Office assures the adequate implementation of NASA and GRC administrative, human resources, and fiscal policies, while supporting office managers and personnel in providing centralized resource, technical, personnel, and administrative management expertise.

The Decommissioning Project Office (8010) is tasked with the safe decommissioning of the Plum Brook Reactor Facility (PBRF) and the timely termination of the Nuclear Regulatory Commission (NRC) "possess but do not operate" license. This includes the decontamination, demolition, and disposal of equipment, systems, soil, buildings and structures that comprise PBRF. The Office is the central point of contact with the NRC and the other state, federal, and local regulators as well as the public.

The Risk Management Office (RMO 8100) is tasked with providing assurance, insight, independent assessment, and SMA support to GRC Aerospace Programs/Projects in a wide range of disciplines. These include assurance management, system safety, risk management, reliability/availability/maintainability, software quality and safety, and EEE parts engineering.

The Quality Management Office (QMO 8200) provides the Center with the capability to assess the efficacy of its process controls and those of its suppliers through internal and external quality assessments. The Office maintains Materials Inter-Center Agreements with other NASA Centers and provides materials and processes review and approval for space flight programs. QMO provides quality assurance insight, independent assessment, quality engineering and material and processes support to programs and projects.

The Glenn Safety Office (GSO 8300) is responsible for the development, implementation, and execution of a safety program that is compliant with all applicable regulatory requirements. The safety program assesses the risks of GRC activities and operations, and informs cognizant management of those risks and the recommended actions developed to mitigate them. In addition, the Office is the Center lead for the implementation of the Agency Safety Initiative and the Voluntary Protection Program (VPP)**.** The GRC Emergency Planning and Response function is managed within the Glenn Safety Office.

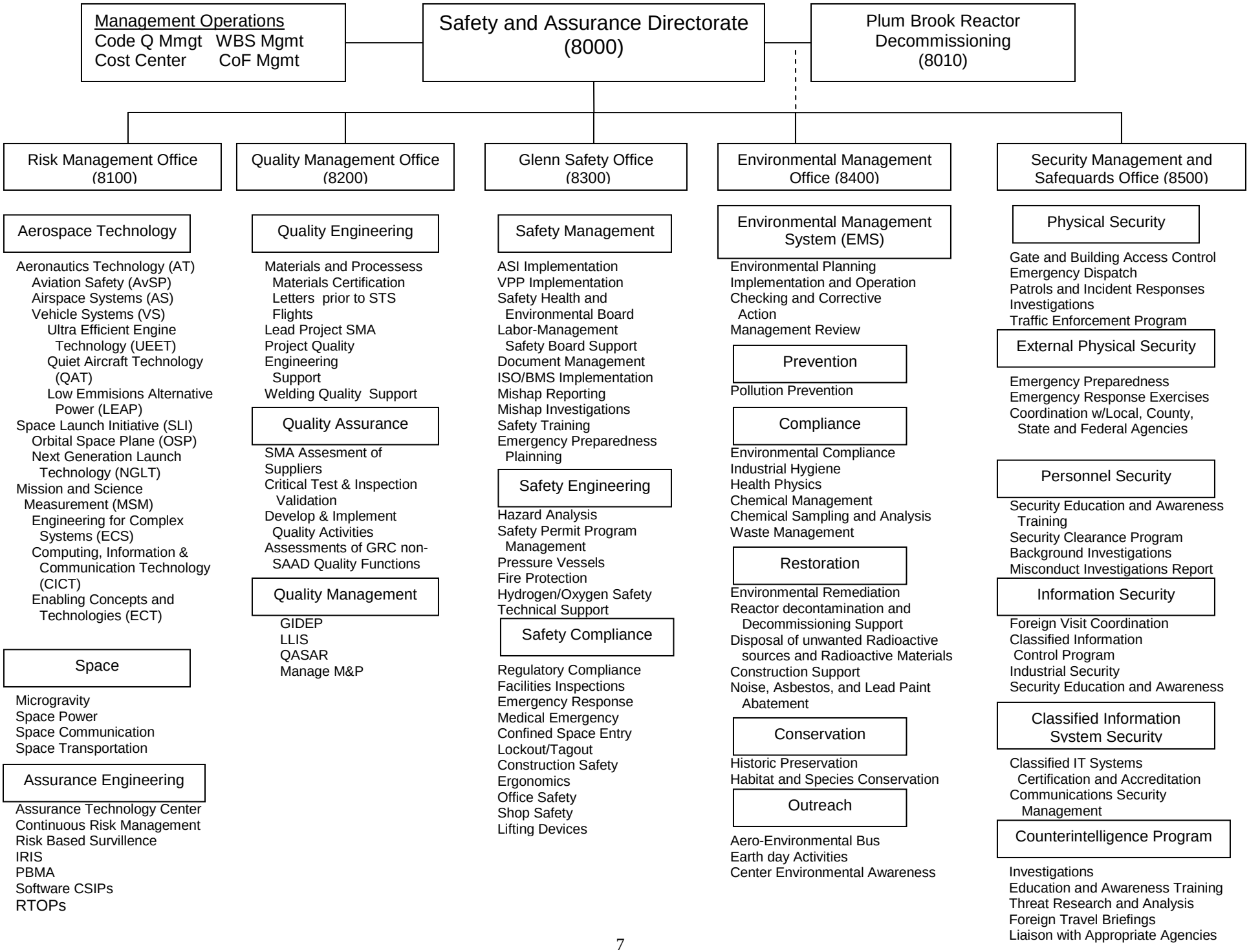
The Environmental Management Office (EMO 8400) is tasked with developing and managing an environmental management system at GRC that complies with Executive Order requirements and ensures compliance with all governing regulations; identifies risks posed by current and past GRC programs, operations, and activities (and by those of the predecessors on its sites); develops and implements processes to remediate, abate, and control these risks; and reports these activities to GRC and NASA Management.

The Security Management and Safeguards Office (SMSO 8500) is responsible for the development, implementation, and maintenance of processes and programs to insure that; Government personnel and those working or visiting at GRC are safe and protected from harm; NASA missions and programs are protected from terrorism; national security classified information and sensitive unclassified information is properly safeguarded against unauthorized disclosure or theft; and that NASA property is protected from theft and sabotage. The Security Program analyzes vulnerabilities and threats to people, property, and information; and in collaboration with the customer, designs effective and cost conscious solutions to minimize risk. The Counter Intelligence Program develops initiatives to detect, deter, and neutralize espionage, other intelligence activities, or sabotage conducted for or on behalf of foreign powers, organizations or persons, or international terrorist activities.

Appendix 1 provides a tabular summary of each office's activities for FY04.

The resources planned for the FY04 activities are summarized for each office in Appendix 2; which details both fully-funded activities and over-guideline, or under-funded activities. Appendix 3 summarizes the resources and activities planned by each office for both FY04 and future years. High-level summary spreadsheets for all of SAAD are provided in Figure 3-0 of Appendix 3.

Fig 2.0 (SAAD Activities and Processes)



1.6.1 SAAD ISSUES AND CONCERNS

- ***Risk Management Office – none***
- ***Quality Management Office – none***
- ***Glenn Safety Office – none***
- ***Environmental Management Office – none***
- ***Security Management and Safeguards – none***

1.6.2 METRICS

Metrics for the FY04 AOA will be updated on a monthly basis and will be posted on the SAAD website. These can be accessed at: http://SAAD.grc.nasa.gov/. Final metrics for FY98, FY99, FY00, FY01, FY02, and FY03 are also posted.

1.7 PROCESSES/ACTIVITIES FOR SPECIAL ATTENTION

In response to the Code Q memorandum of May 1, "FY2004 Safety and Mission Assurance (SMA) Annual Operating Agreement (AOA)" Guidance; this section presents the general implementation philosophy for processes/activities designated for special attention. Separate FTE and cost estimates are not supplied for these functions. Expenditures are included in the line items for the principal program activities and functional processes.

1.7.1 PLUM BROOK REACTOR DECOMMISSIONING

In September 1999, the management of the Plum Brook Reactor Facility (PBRF) Decommissioning Project was moved to the Safety and Assurance Directorate (SAAD). This is a very high visibility project for NASA and Glenn Research Center and must be considered an area of high risk until project completion. At NASA Headquarters, the Environmental Management Division (Code JE) will coordinate funding for completion of the effort in keeping with NASA policy for environmental projects. This AOA does list the decommissioning funding estimate in Appendices 2 and 3. In FY03, the Federal Sector Team, consisting of NASA, the US Army Corps of Engineers (USACE), and the Department of Energy - Argonne National Laboratory, along with their Contractor Team, continued decommissioning activities. New planning and scheduling, reflecting progress made during FY03, is in place for activities anticipated in FY04. Work will continue as per the *PBRF Decommissioning Plan* approved by the Nuclear Regulatory Commission and under its auspices. Work necessary to decommission the reactor facility site in general, and to demolish the reactors themselves for decommissioning, highlight the work planned for FY04. FY04 continues a two-year period of the most critical and technically challenging elements of the Project with the most cost and schedule risk. Removal of material stored in *"Hot and Dry"* storage, the *reactor internals,* and the reactor *tanks* themselves mark the most critical milestones for the project. Technical challenges and resource availability risks have been balanced to better ensure the project success.

During FY04 the plans for the Decommissioning Project Office are:

- Continue to work the general project plan, the *Operations Plan,* and complete all preparation work.
- Continue to implement the *Decommissioning Plan* as approved.
- Maintain (review and revise, as necessary) all plans required to execute the various phases of the PBRF Decommissioning Project.
- Remove, package and ship contaminated material from Hot and Dry Storage, spaces internal to the Reactor Vessels, and from other areas of high contamination.
- Segment and remove the Containment Vessel Tank and begin demolition and disposal of the Containment Building itself.

These are addressed in detail in section 2.0A, Decommissioning Project Office.

1.7.2 SOFTWARE ASSURANCE

Software Assurance (SA) is a multi-discipline function that ensures that safe, reliable, and secure software products of high quality are delivered to and used within NASA. SA assists in risk identification and mitigation by minimizing defects, preventing problems, and enabling improvement of future products and services. The SA process is a planned and systematic set of activities that ensure conformance of software life cycle processes and products to specified requirements, standards, and procedures. This process can be applied to programs, projects, and facilities.

While keeping abreast of the latest advances in software engineering, software management, and software assurance, the RMO provides SA support to numerous projects in Microgravity, Aeronautics, Facilities, Space Transportation, and Space Communication. A portion of the SA efforts is dedicated to researching and advancing the state-of-the-art in software assurance, software management, and software safety. This is done through the NASA Office of Safety and Mission Assurance, Software Assurance Research Program. In addition, SA personnel develop and teach classes for formal inspections, software safety, and general software processes. SA personnel are a vital part of the Glenn Software Engineering Process Group and the Glenn Software Working Group, as well as the NASA Software Working Group, helping to institute the best software processes, procedures, and guidance for Glenn's software engineers, scientists, and managers.

All software developed and managed at GRC needs to be evaluated for the level of software control and the need for Independent Verification and Validation (IV&V). SA can assist project management with these evaluations. The required SA activities applied to a project are directly related to the software control level and the need for IV&V. Since SA and IV&V activities overlap, an agreement is made by project management on which areas to individually focus SA and IV&V. SA activities, and possibly IV&V activities, must be applied to all high and critical control level software efforts. Low and medium control levels will only be considered on an as needed or desired basis depending on resources.

1.7.3 TRAINING

SAAD provides web-based training for all SMA professionals through the Professional Development Initiative (PDI); available at: https://solar.msfc.nasa.gov. Provisions are made for developing, institutionalizing, utilizing, and continually improving a comprehensive and documented training and career development program. Each Staff member plans a program of study and develops their skills using the Individual Development Program, which is reviewed and approved each year as part of the Performance Review process.

The Glenn Safety Office, Risk Management Office, and the Environmental Management Office are working to improve the training survey process that is being developed. This process was designed to obtain from supervisors, safety, health, and environmental training needs information. This information is used to develop the training plan for the following fiscal years. In addition, this information will be used to develop Job Safety Analysis for all job series in the Center. The Glenn Safety Office continues to coordinate training needs with the NASA Safety Training Center (NSTC) at JSC. The master training schedule includes training the NSTC will be offering at GRC, as well as contracted training and in-house training.

1.7.4 SAFETY AND ENVIRONMENTAL PROGRAMS

1.7.4.1 AGENCY SAFETY INITIATIVE (ASI)

ASI implementation is continuing. The Hazard Analysis Program is being developed and implemented. The PEP results of the past three years demonstrate that the program has the correct emphasis and has had a positive impact on the Center. However, there is a concern that if FY04 funding is less than projected, there may be a negative impact on full implementation of ASI as currently scheduled.

1.7.4.2 VOLUNTARY PROTECTION PROGRAM (VPP)

The Center has an implementation plan for VPP certification at Plum Brook Station (PBS) and at the Glenn Research Center (GRC). The plan was approved by the Executive Safety Board and has the concurrence of the local OSHA office. The plan outlines the process aimed at certifying GRC in the spring of 2004. However, a funding shortfall in FY04 would affect the plan and the scheduled implementation.

1.7.4.3 ENVIRONMENTAL MANAGEMENT SYSTEM

NASA Glenn Research Center, Lewis Field, Environmental Management System ISO 14001 registration was issued on June 26, 2001 with certification running from May 31, 2001 to May 30, 2004. While the registration is a great accomplishment for the Center, additional work remains to be done to refine and improve the EMS audit conformance to ensure the Center meets its environmental objectives and targets. In August 2002, the Center's ISO 14001 registration was transferred to a new registrar: NQA. During FY 2004 EMO will:

- Work with the ISO Program Office to integrate the EMS and BMS internal and external audits
- Work with the Plum Brook Management Office to implement the EMS at PBS and include PBS under the Center's ISO 14001 registration

1.7.4.4 CLEVELAND HOPKINS AIRPORT EXPANSION

The Cleveland Hopkins Airport expansion has resulted in increased demands on environmental staff to support facility relocations and coordination of CERCLA activities. This, coupled with the phased plan to augment environmental staff through FY04, is resulting in an increase in response time to respond to other Center environmental demands.

The Glenn Safety Office continues to dedicate large amounts of resources to this project. Currently there is one safety engineer (performance based contractor) providing direct support and three other members of the staff providing support ranging from 20 to 60% of their time. GSO predicts that this amount of support will continue during FY04.

1.7.5 SECURITY AND COUNTER INTELLIGENCE (CIP) PROGRAMS

1.7.5.1 COUNTER INTELLIGENCE

In January 2001, the NASA Counter Intelligence Program (CIP) was formally established. The objectives of the program are to detect, deter, and neutralize the potential threat posed by foreign entities. Glenn has had an active CI program since 1995, although the extent of the program was minimal due to limited resources. With the formal establishment of the NASA CIP, CI positions were allocated to the Centers along with a dedicated budget. The GRC CIP is responsible for developing capabilities to detect, deter, and neutralize espionage, other intelligence activities, or sabotage conducted for or on behalf of foreign powers, organizations, or persons, or international terrorist activities. These capabilities include CI investigations, CI education and awareness training, CI threat analysis, and liaison with appropriate agencies. After the September 11, 2001 terrorist attacks, GRC was requested to provide the entire Agency with threat information on a daily basis from its classified intelligence information retrieval system (Intelink-S), while a massive effort was underway to establish this capability at all of the other Centers. GRC was positioned to support all Centers, and since that time, it has delivered timely and quality threat information. Although many significant gains in the CI program have been achieved, additional work remains to be done to ensure GRC people, property, and information are adequately protected against espionage, other intelligence activities, sabotage, and foreign or domestic terrorism.

1.7.6 SPACE ACT AGREEMENT – TUSKEGEE UNIVERSITY

NASA GRC and Tuskegee University have entered into a Space Act Agreement for the purposes of having NASA GRC transfer its expertise and to provide training in order to assist Tuskegee in enhancing its existing safety, health, environmental, and risk management program.

NASA and Tuskegee together will develop training that will educate the faculty, staff, and students of Tuskegee about safety, health, environmental, and risk management policies and procedures. The trainings will cover topics such as identifying workplace hazards, developing an effective workplace safety, health and environmental culture, assisting participants with the development of safety, health and environmental programs within their workplace, and the application of risk management to programs/projects.

Tuskegee will:

1. Provide sample, overview, and/or summary information relative to Tuskegee's current safety, health, environmental and risk management program via a site visit to Tuskegee.

2. Develop a training document(s) incorporating the expertise from NASA GRC and Tuskegee that can be used as a model by other entities in establishing a safety and assurance technologies program.

NASA GRC will:

1. Provide selected training to Tuskegee personnel relative to safety, health, environmental and risk management issues.

2. Provide the requisite training either at Tuskegee University or at NASA GRC.

3. Provide training materials to Tuskegee.

2.0 SAAD MANAGEMENT OPERATIONS (OMO/8000)

The SAAD Management Operations Office (OMO) manages the Work Breakdown Structure (WBS), Cost Center, NASA Headquarters Code Q, and the CoF funding for the entire SAAD organization. In addition, personnel actions, training, travel, overtime, space management and awards are managed by this group. Personnel actions include promotions, transfers, and interim changes to employee status. Personnel records are maintained by each Division. Training actions are processed for the staff and coordinated with the Organizational Development and Training Office. Staff Management of technical professional development, engineering policy, and customer interfaces is also provided by OMO. Monthly Business Reviews are held to monitor costs against plan for institutional, programmatic, training, travel, overtime, and awards budgets. The Director of SAAD chairs the reviews and each Office Chief or their representative is in attendance.

Functional Activity Summaries that detail activity planning are on Pages 36 through 39 of Appendix 1. A Resource Summary for FY04 OMO is depicted in Figure 2-0 in Appendix 2. Out-year estimates are found in Figure 3-1 of Appendix 3.

2.1 CODE Q MANAGEMENT

A number of Code Q Technical Program Plans have been submitted for FY04. These Technical Program Plans include UPNs: 323-08, 323-29, 323-48, 323-50, and 323-78. The Technical Plans support Software Assurance, Safety, Risk Management, Probabilistic Risk Assessment, Non-Destructive Evaluation and other technology initiatives. Procurement actions are taken by the responsible technical manager based on authority received. Costs are projected to meet the current year 85 percent costing metric.

2.2 WBS ELEMENT MANAGEMENT

The Security Management and Safeguards Office is utilizing funding for the Counter Intelligence program. The Counter Intelligence program received initial funding in FY01 when the program was formally established at GRC. Purchase requisitions originate within the Security Management and Safeguards Office and are processed electronically to the Procurement Division. WBS funding must be obligated by fiscal year end. The funding levels are described in Appendices 2 and 3.

2.3 COST CENTER MANAGEMENT

The Cost Center budget supports administrative staff and technical support for the Offices, along with all purchased goods and services. Purchase requisitions originate within any of the Divisions and are processed electronically to the Procurement Division. Under the full cost accounting process WBS funding will no longer be provided for the purchased goods and services. All General and Administrative (G&A) functions will be funded by Cost Center funding. Cost Center funding must be 85% costed by fiscal year end. The funding levels are described in Appendices 2 and 3.

2.4 CoF MANAGEMENT

Funding requirements for support of environmental activities relating to remedial investigation/feasibility studies and remedial design are coordinated with NASA Headquarters Code JE. CoF funding for the Environmental Management Office and Plum Brook Decommissioning Office is tracked by the Environmental Management Office and PBRF Decommissioning Project Office, as appropriate.

2.5 OMO METRICS

1. Cost 85 percent in current fiscal year for Code Q funds
2. Obligate 100 percent in current fiscal year for WBS funds
3. Cost 85 percent in current fiscal year for Cost Center funds
4. Obligate 90 percent in current fiscal year for CoF funds
5. No greater than 5 percent difference between planned travel and actual cost on a quarterly basis
6. Maintain 85 percent of training budget allocated for in-house skill development versus advanced degrees

2.0A DECOMMISSIONING PROJECT OFFICE (DPO/8010)

The objectives of the Plum Brook Reactor Facility (PBRF) Decommissioning Project Office (PO) are to safely remove and dispose of contaminated equipment, components, and systems; safely decontaminate buildings and structures; safely demolish all existing buildings and structures; and appropriately dispose of the contaminated wastes that results, including contaminated material and soil, to enable the termination of the NRC licenses by 2007.

The PBRF Decommissioning Project Office (PO) provides the general management and the management, safety, environmental engineering, and technical oversight for the PBRF Decommissioning Project. A Federal Sector Team of experts and contractors supports the PO, and various GRC offices also provide direct and indirect support. The Federal Sector Team consists of members from NASA, the US Army Corps of Engineers (USACE), and the Department of Energy - Argonne National Laboratory (DOE-ANL). Other SAAD offices that support the Decommissioning Project Office include the Risk Management Office (RMO/8100), Quality Management Office (QMO/8200), Glenn Safety Office (GSO/8300), Environmental Management Office (EMO/8400), and Security Management and Safeguards Office (SMSO/8500). In addition to USACE and DOE-ANL, there is direct contractor support for Community Relations (Focus Group), and Station and Health Physics Services (the Plum Brook Operations Support Group (PBOSG)).

The key activities for the Decommissioning Project Office for the next year include the continued implementation and maintenance of the following Project governing management documents and the execution of its responsibilities as defined therein, including:

- NRC Approved Decommissioning Plan
- PBRF Decommissioning Project Plan
- Environmental Monitoring Program
- PBRF Risk Management Plan
- Community Relations Plan
- NASA –USACE Operations Plan

The Project Office also provides support and information to the following independent review and oversight activities to assure Project integrity and success:

- Glenn (Governing) Program Management Council
- Glenn Center Director Briefings
- Safety Health and Environmental Board
- Decommissioning Safety Committee
- GRC SMSO Integrated Independent Reviews

The Project supports and executes other activities critical to its success, as described in greater detail in the following sections, including:

- NEPA Process
    - Environmental Baseline
    - Historical Documentation
- Planning and Procurement
    - Finalize procurement activities for Decommissioning Operations Contractor
    - Procure equipment and services for Decommissioning Operations
- Decommissioning Activities
    - Continue Characterization activities
    - Segment Reactor Vessel and strip Containment Building of contaminated materiel
    - Remove and dispose of Vessel Segments and other Radioactively contaminated wastes
    - Dispose of loose equipment, systems, and other components from the site
    - Abate asbestos, lead paint and other hazardous material

The Resource Summary for FY04 operations is depicted in Figure 2-5 of Appendix 2. Out-year resource estimates can be found in Figure 3-2 of Appendix 3.

2.1A PROJECT MANAGEMENT

The project management approach of the PBRF Decommissioning Project Office incorporates some unique implementation of the Project Plan as outlined in NASA Policy Guidance NPG7120.5A to reflect this multi-year C of F project. Also included is the ongoing execution of the Environmental Monitoring Program, implementation of the *Community Relations Plan*, implementation of NASA Continuous Risk Management using the *PBRF Risk Management Plan*, and close review and oversight by GRC and NASA management.

The oversight is provided by the Glenn Program Management Council, Glenn Center Director Briefings, Safety, Health and Environmental Board, and GRC SMSO Independent Assessment.

The critical deliverables for FY04 are:

- Continued implementation of the PBRF *Decommissioning Project Plan* and of the *Operations Plan*
- Continued refinement and execution of the PBRF *Decommissioning Risk Management Plan* and Risk Database
- Continued implementation of the Environmental Monitoring Program, refinement of the *Environmental Baseline Study*, and execution of the Historical Preservation protocols
- Continued implementation of the *Community Relations Plan*
- Development and execution of Work Plans, Implementing Procedures, and Work Execution Packages

2.2A DECOMMISSIONING PLAN EXECUTION

The *PBRF Decommissioning Project Plan* was submitted to the Nuclear Regulatory Commission (NRC) on December 20, 1999, and approval was received on March 20, 2002

The critical deliverables for FY04 are:

- Respond to the NRC inquires and inspection findings in a timely manner
- Revise the *PBRF Decommissioning Project Plan*, if required, to accommodate any needed changes

2.3A NEPA PROCESS

The NRC has submitted their NEPA-required *Environmental Assessment* (EA). NASA submitted their NEPA-required EA, and after careful analyses, a subsequent *Finding Of No Significant Impact* (FONSI) was made. The Ohio State Historical Preservation Officer was contacted and the state required no further actions. However, NASA has decided to preserve the historical significance of the facility and has developed a Historical Preservation Plan.

The critical deliverables for FY04 are:

- "Execute" the *Historical Preservation Plan*
- "Update," via the Environmental *Management Plan* and the *Environmental Baseline Survey Report* (specifically the Data Gap closures, as the information for closure becomes available)

2.4A PRE-DECOMMISSIONING ACTIVITIES CLOSEOUT

Some *pre-decommissioning* activities started in FY01 and FY02 were performed without the need for, and outside the auspices of, a NRC approved Decommissioning Plan. These items include activation of facility support systems and removal of loose equipment from PBRF. The formal *pre-decommissioning* activities started in FY01 and were scheduled to be completed in FY02. Some items were completed before decommissioning activities began and others continue as part of the decommissioning activities. Each activity requires a characterization of hazards and then development of plans and procedures to implement the sampling, analysis, and eventual abatement or removal and disposal of these hazards.

The critical deliverables for FY04 are:

- Take and analyze samples from the remaining loose equipment per 10 CFR Part 61
- Prepare equipment for shipment to waste processor and/or disposal at a licensed facility
- Continue characterization of contaminated *loose* material on-site to prepare for demolition

2.5A PLANNING AND PROCUREMENT

NASA approves all the procurement activities and strategies for the execution of the PBRF decommissioning design and decommissioning phases of the project. The PO will develop, review, and approve all plans required to execute the decommissioning design and decommissioning of the PBRF. The following plans, previously developed, will be refined, revised, and approved as necessary by the PO: *Project Plan, Operations Plan, Environmental Management Plan, Radiation Protection Plan, Respiratory Protection Plan, Risk Management Plan, Safety and Health Plan, Nuclear* and *Hazardous Waste Management Plan.* The Federal Sector Team and their contractors will execute these plans. However, NASA as the licensee is ultimately responsible for the implementation and control of these plans and their implementing procedures.

The critical deliverables for FY04 are:

- Maintain the cost and schedule baseline and phasing plan for each year of the project as refined for each POP cycle
- Prepare and approve all procurement for decommissioning design, and the decommissioning phases of the project
- Revise, as necessary, the Inter-Agency agreements for decommissioning design, and the decommissioning phases of the project
- Refine the schedule of key environmental activities as overlaid on the overall PBRF Decommissioning Project schedule
- Revise, if necessary, any plans required to execute the various phases of the PBRF Decommissioning Project

2.6A DECOMMISSIONING ACTIVITIES

The decommissioning activities started in mid-FY02 and will continue for 5 years.

The critical deliverables for FY04 are:

- Prepare for the Reactor Vessel segmentation
- Continue vital Characterization activities
- Complete *Loose Equipment* removal from the Reactor containment vessel and other lab areas
- Maintain the site infrastructure to support Decommissioning activities including temporary services, waste removal, and waste disposal
- Execute the Decommission activities within the scope of the budget constraints for FY04, including *Loose Equipment* removal, vessel segmentation and removal, and waste removal
- Commence building demolition

3.0 RISK MANAGEMENT OFFICE (RMO/8100)

The Risk Management Office (RMO) support activities are described in the following Sections of the GRC SAAD AOA. RMO provides Safety and Mission Assurance (SMA) engineering support to GRC programs/projects and the institutional sector. The SMA key areas of support for RMO include:

The Aerospace Technology, Space Flight, Space Science, Biological and Physical Research Enterprises, and the Office of Safety and Mission Assurance, in the following disciplines:

Project Management
Risk Management
Project Assurance
System Safety
Materials and Processes
Quality Assurance
Reliability and Maintainability
Software Product Assurance
FAA Liaison
Process Based Mission Assurance (PBMA)

Functional Activity Summaries that detail planning are on pages 40 through 45 of Appendix 1. The Resource Summary for RMO operations for FY04 is depicted in Figure 2-1 of Appendix 2. Out-year resource estimates can be found in Figure 3-3 of Appendix 3.

3.1 AEROSPACE TECHNOLOGY

SMA support to Aerospace Technology Programs/Projects will remain the same in FY04. The GRC Aerospace Technology Business Management System has identified SMA support requirements for the following programs: Aeronautics Technology theme: Aviation Safety (AvSP) program; Airspace Systems (AS) program; and Vehicle Systems (VS) program which includes the Ultra Efficient Engine Technology (UEET) , Quiet Aircraft Technology (QAT), and Low Emissions Alternative Power (LEAP) projects; Space Launch Initiative (SLI) theme which includes the Orbital Space Plane (OSP) and Next Generation Launch Technology (NGLT) programs; and the Mission and Science Measurement (MSM) theme which includes the Engineering for Complex Systems (ECS), Computing Information and Communications Technology (CICT), and Enabling Concepts and Technologies (ECT) programs.

3.1.1 AERONAUTICS TECHNOLOGY

3.1.1.1 AVIATION SAFETY and SECURITY (AvS)

SAAD support to the AvS Program Office in FY04 will include project assurance, system safety, and (Federal Aviation Administration) FAA liaison. One tenth of a civil servant (0.1 CS), and one-half of a Performance Based Contractor (.5 PBC) or a total of 0.6 Full Time Equivalents (FTE) will be utilized to support AvSP.

3.1.1.2 VEHICLE SYSTEMS (VS)

3.1.1.2.1 SAAD support to the Aeropropulsion Research Program Office on the LEAP project in FY04 will include: project assurance, and risk management. One tenth of a civil servant (0.1 CS) and 25% of a Performance Based Contractor (.25 PBC), or a total of .35 of a Full Time Equivalent will be utilized for LEAP support.

3.1.1.2.2 SAAD support to the Ultra Efficient Engine Technology (UEET) Office in FY04 will include project assurance, risk management, and FAA Liaison support. Ten percent of a civil servant (0.1 CS) and one-half of a Performance Based Contractor (.5 PBC), or a total of 0.6 Full Time Equivalents will be utilized for UEET Support.

3.1.1.2.3 SAAD support to the Quiet Aircraft Technology (QAT) Engine System Noise Reduction project will primarily be project assurance. It is anticipated that no more than ten percent (.10 CS FTE) of a civil servant will be required.

3.1.1.3 AIRSPACE SYSTEMS (AS)

SAAD support to the Airspace Systems program is expected to be no more than ten percent (.10 CS FTE) of a civil servant in FY04.

3.1.2 SPACE LAUNCH INITIATIVE

3.1.2.1 NEXT GENERATION LAUNCH TECHNOLOGY (NGLT)

SAAD support to the Space Transportation Project Office and Aeropropulsion Projects Office (2600) in FY04 will include: Project Assurance, Risk Management, and Probabilistic Risk Assessment (PRA) activities. Projects supported will include Vehicle Systems Research and Technology, Propulsion Research and Technology, Rocket Based Combined Cycle (RBCC), and Turbine Based Combined Cycle/Revolutionary Turbine Accelerator (TBCC/RTA). Civil Servant support will be at a level of .50 CS FTE and 1.0 FTE PBC.

3.1.3 MISSION AND SCIENCE MEASUREMENT (MSM)

3.1.3.1 ENGINEERING FOR COMPLEX SYSTEMS (ECS)

SAAD support for the ECS program is expected to be no more than ten percent of a civil servant (.10 CS) for 2004. The activity will include closing out 2003 tasks, and work on future proposals, in response to the elimination of funding for the proposed 2004 System Reasoning and Risk Management task.

3.1.3.2 COMPUTING INFORMATION AND COMMUNICATIONS TECHNOLOGY (CICT) SPACE COMMUNICATIONS DATA SYSTEMS / ISS ADVANCED COMMUNICATIONS ARCHITECTURE DEMONSTRATION (ACAD)

Per customer input, RMO will reserve up to 1 FTE Civil Servant / contractor support for the Space Communications Office in FY04. This workforce would provide support, if needed, for the dvanced Communications Architecture Demonstration (ACAD) project, which is being submitted as an over-guidelines request for FY-04. The exact nature of any RMO support provided will be negotiated with the customer, depending on how the project is structured. However, since ACAD would eventually be a demonstration on the International Space Station (ISS), RMO expects that at least some safety and materials and processes support would be needed if the project is funded.

3.1.3.3 ENABLING CONCEPTS AND TECHNOLOGIES (ECT)

SAAD support to the Power and Propulsion Office (6900) in FY04 will primarily be project assurance and risk management, due to the basic research nature of the ECT program. The project supported will be NASA's Evolutionary Xenon Thruster (NEXT) development program. Resources required are estimated to be 0.5 CS and 0.5 PBC, for a total of 1.0 FTE.

3.2 BIOLOGICAL AND PHYSICAL RESEARCH ENTERPRISE

3.2.1 MICROGRAVITY SCIENCE

SAAD plans to support a variety of GRC Microgravity Science projects in FY04. In connection with this support, our customer, the Microgravity Science Division (MSD), has estimated a need for approximately 15 FTE Civil Servants (including ~4 FTE from QMO) and approximately 5-10 contractor personnel (the 15 CS FTE includes chargeback).

The Microgravity Research, Development, and Operations Contract (MRDOC), which began in FY00, is expected to continue during FY04. (Note that this contract was modified in FY03, and Exhibit 1 is no longer fixed price.). For MRDOC projects, SAAD's role is primarily focused on contractor surveillance and independent assessment of contractor deliverables and performance. In addition, SAAD assists in the procurement process, including the development and approval of MRDOC delivery orders. For non-MRDOC, or "in-house" projects, SAAD typically has a larger role, which may include "in-line" product assurance responsibilities. SAAD plans to support projects in various stages of development during FY04. Greater levels of support will be provided to mature projects in the process of developing flight hardware. However, a low level of concurrent engineering support will also be provided to Microgravity projects in earlier stages of development (i.e., Phase A/B), in anticipation that these projects will eventually receive authorization to develop flight hardware.

A number of MRDOC and in-house projects are expected to require SAAD support in FY04. MRDOC projects include: Fluids and Combustion Facility (FCF), Light Microscopy Module (LMM), Multi-user Droplet Combustion Apparatus (MDCA), and several associated fluid physics and combustion science experiments which will be conducted in the LMM and MDCA mini-facilities. In addition, there may be several other International Space Station (ISS) payloads, including investigations in the Microgravity Science Glovebox that will require SAAD support. Among these are the Space Acceleration Measurement System (SAMS), the Physics of Colloids in Space (PCS+/PCS-3) experiments and the Boiling Experiment Facility (BXF).

Other projects which SAAD expects to support include: the Flow Enclosure Accommodating Novel Investigations in the Combustion of Solids (FEANICS) mini-facility, the Granular Flow Module (GFM) mini-facility, the Multi-user Gaseous Fuels Apparatus (MGFA) mini-facility and the Microgravity Observations of Bubble Interactions (MOBI) experiment. SAAD will also support the Miscible Interfaces Dynamics and Simulation (MIDAS) experiment and Dispositif Pour l'Etude de la Croissance et des Liquides Critiques (DECLIC), a French-built fluids mini-facility for both French and GRC-developed experiments.

SAAD will continue working with our customer to expand the use of the formal risk management process called for in NPG 7120.5. SAAD will continue to train project personnel in the continuous risk management (CRM) process and help projects develop and implement Risk Management Plans. SAAD will also encourage and assist projects in using risk-based surveillance to help ensure the most effective application of their surveillance resources.

Finally, in addition to providing overall product assurance guidance to MSD management and specific "in-line" support to in-house projects, SAAD will retain the responsibility for independent assessment of flight projects and will provide that assessment to Glenn and Headquarters management, as requested.

3.3 SPACE SCIENCE ENTERPRISE

Support in the space power and propulsion area for FY04 has been established at a level of 2.25 FTE. Support will be provided by a work force comprised of civil servants (1.5 FTE) and contractors (.75 PBC). The Safety and Mission Assurance products and services are mainly in support of the Project Prometheus Program which includes the Stirling Radioisotope Generator, Nuclear Propulsion Research, and the Jupiter Icy Moons Orbiter.

3.4 SPACE FLIGHT ENTERPRISE

Support in the space flight area for FY04 has been established at a level of 0.6 FTE. Program Assurance products and services are being supplied in support of ISS EPS Subsystem Management Team activities.

3.5 SAFETY AND MISSION ASSURANCE ENTERPRISE

3.5.1 CONTINUOUS RISK MANAGEMENT

RMO will be involved in various activities to support Continuous Risk Management (CRM) at the Center. SAAD will assist these Programs/Projects/Facilities in the application of CRM principles, tools and techniques, including those of NPG 7120.5 where appropriate, by providing a vast array of assurance services. These services include consultation/facilitation for both top-level and detailed risk-decision processes; training in the many applicable risk assessment/management tools; as well as detailed development of risk assessments data and metrics. These services will be applied based on the respective Program/Project/Facility level of programmatic and safety risks. For FY04, a workforce of 1.7 Civil Servant and 0.5 FTE Performance Based Contractors (PBC) will be used to support GRC CRM Implementation.

3.5.2 ASSURANCE TECHNOLOGY CENTER (ATC)

This initiative provides the infrastructure and resources for the guidance and completion of Agency-wide Safety & Mission Assurance activities as documented in the ATC 3-Year Operating Plan. In total, the ATC workforce will consist of 2 Civil Servant and 8 FTE Performance Based Contractors.

3.5.2.1 EDUCATION & CAREER MANAGEMENT

For FY04, a workforce of 0.5 Civil Servants and 4 FTE Performance Based Contractors will support Education & Career Management activities. These activities will include development of a comprehensive SMA Training Model, implementation of an SMA Training Management System, and process development for a SMA Intern program for NASA.

3.5.2.2 DATA COLLECTION & INFORMATION MANAGEMENT

For FY04, a workforce of 0.5 Civil Servants and 2.5 FTE Performance Based Contractors will support Data Collection & Information Management activities. These activities will include a development study for an Advanced SMA Knowledge Portal, SMA Data Infrastructure Development & Maintenance, a Monthly Newsletter, and SMA Success Stories development.

3.5.2.3 MISHAP INVESTIGATION

For FY04, a workforce of 0.5 Civil Servants and 1 Performance Based Contractors will support the Mishap Investigation activities. These activities will include Enhanced Incident Reporting Information

System (IRIS) Implementation, IRIS Data Analysis and Countermeasure Development, NASA IRIS Users Group support, NASA Mishap Investigation Working Group support, and Mishap Investigation Facilitators development.

3.5.2.4 RESEARCH & DEVELOPMENT

For FY04, a workforce of 0.5 Civil Servants and 0.5 Performance based Contractor will support the Research & Development (R&D) activities. These activities will include R&D updates for Agency SMA personnel and dissemination of SMA R&D Activities across the NASA SMA Community.

Program Management

A Safety and Mission Assurance Knowledge Management tool, management of PBMA will be transferred in its entirety to GRC in FY04. This Code Q RTOP has expanded from its basic Training and Deployment task in FY01 and FY02 to now encompass the entire PBMA Program beginning in FY04, bringing approximately $1.7M annually to GRC. The following tasks comprise the PBMA RTOP: Training and Deployment to all NASA Centers; Develop Communities of Practice, Knowledge Maps throughout NASA; Computer architecture which supports PBMA, including servers and software, Video nugget documentation, Wizard functions for Program Assessments, and SMA Program Plan Development. For FY04, a workforce of 8.75 FTE will be used. This workforce will include 0.75 Civil Servant and approximately 8 FTE Performance Based Contractors.

3.5.4 CENTER SOFTWARE INITIATIVE PROPOSALS (CSIP)

CSIPs are research efforts to advancing the state-of-the-art in software assurance, software management, and software safety. CSIPs are anticipated to increase in research activities. This research is funded by Code Q and managed by the IV&V center. RMO efforts in this area have grown from 3 CSIPs in FY01 to 7 CSIPs in FY03. In FY04, 2 CSIPs will be phased out but the remaining 5 CSIP will be at their peak research activities. The workforce for CSIPs includes 0.5 FTE Civil Servants and 3 FTE Performance Based Contractors for a total of 3.5 FTE.

3.5.5 RESEARCH TECHNOLOGY OPERATING PLANS (RTOPs)

3.5.5.1 FLYWHEEL BATTERIES

These RTOP proposals support the Aerospace Flywheel Storage System Technology activities. NASA's flywheel development efforts today are aimed at increasing the performance of flywheels so that they can be used as efficient energy storage devices in aerospace power systems. The three proposals deal with Composite Life Prediction Modeling, Flywheel Life Cycle Testing, and Touchdown Bearing development. A total of 0.6 FTE civil servants and 3.25 FTE PBC will be required to support these efforts.

3.5.5.2 SILICON CARBIDE RISK BASED ACQUISITION SPECIFICATION

This RTOP proposal supports the new ultra-reliability initiative at NASA and describes the need to develop risk based acquisition specifications for Silicon Carbide (SiC) electronic devices. SiC technology represents a breakthrough in establishing ultra-reliability electronic parts because of the temperature tolerance of the materials. 0.1 Civil Servant FTE and 0.75 FTE PBC will be required to support this effort.

3.5.5.3 ULTRA RELIABILITY FOR AERONAUTICS TEST FACILITIES

This proposal provides for the opportunity to improve the reliability of new designs for Aeronautics Test Facilities by an order of magnitude. By using standard methods to evaluate the reliability of existing Aeronautics Test Facilities, and by further expanding the reliability support to include Reliability Centered

Maintenance, Spares Prediction and Human Factors Reviews, the reliability will be improved, reducing the downtime of the facility.

3.5.5.4 PROBABILISTIC RISK ASSESSMENT (PRA)

The 2004 Code Q proposal initiates a new PRA tool development activity at GRC. Specifically, GRC is concentrating its efforts on the development of a tool for mechanical and electrical components Support will be provided at a level of .5 Civil Servants and .4 PBC, for a total of .9 FTE.

3.6 RMO METRICS

1. Risk Management Plans Completed for all Post Phase A GRC Programs/Projects
2. 100% of Five (5) Continuous Risk Management Workshops Completed
3. 100% of Product Assurance Plans Completed for pre-Preliminary Design Review Programs/Projects

4.0 QUALITY MANAGEMENT OFFICE (QMO/8200)

The Quality Management Office (QMO) provides Quality Assurance and Quality Management to aeronautics, space research, and technology projects. This Office also provides Safety and Mission Assurance (SMA) support directly to GRC institutional activities. The Chief of QMO approves critical Materials Usage Agreements (MUA) and prepares Materials Certification Letters in support of intercenter agreements with Johnson Space Center (JSC). QMO also manages Materials and Process Program Support. The QMO provides expertise in failure analysis of both electronic and mechanical components and systems. The QMO performs internal assessments of the internal quality system and supplies lead and internal auditors to the ISO Project Office. When requested, the QMO supports the GRC ISO 9001 preventative and corrective action system and database. The key activities and processes of QMO are:

Quality Engineering

- Materials and Processes Support
- Materials Certification Letters prior to STS flights
- Lead, Project Mission Assurance
- Project Quality Engineering Support
- Welding Quality Support

Quality Assurance

- SMA Assessment of Suppliers
- Critical Test and Inspection Validation
- Develop and Implement Quality Activities
- Assessments of GRC, non-SAAD Quality Functions

Quality Management

- Government-Industry Data Exchange Program (GIDEP)
- Lessons Learned Information System (LLIS)
- Quality Assurance Special Accomplishment Recognition (QASAR) Management
- Manages Materials and Processes and Quality Assurance Functions

Functional Activity Summaries that detail activity planning are on Pages 46 through 48 of Appendix 1. The Resource Summary for QMO FY04 operations is depicted in Figure 2-2 of Appendix 2. Out-year resource estimates can be found in Figure 3-4 of Appendix 3.

4.1 QUALITY ENGINEERING

The QMO provides personnel, matrixed through the Risk Management Office (RMO), directly to aeronautics and space flight. QMO provides contract review, specification development, requirements tailoring, and general quality expertise to these projects, as well as M&P Engineering, Non-Destructive Engineering (NDE) guidance, fabrication guidance, and processing expertise. In addition, specific, related engineering expertise exists in many specialized fields including: scanning electron microscopy analysis of both electronic and mechanical failures; electronic component design and fabrication; materials selection; materials processing, such as heat treatment, welding, and brazing; and composite fabrication in Kevlar and graphite/graphite. This Office also maintains the Material and Processes (M&P) intercenter agreements.

The critical deliverables for FY04 include:

1. Technical evaluations based on engineering and standard practices

4.2 QUALITY ASSURANCE

The Quality Assurance activity provides surveys, facility assessments, vendor surveillance, and product oversight, and leads SAAD in implementing ISO within SAAD. The Quality Assurance activity routinely surveys the Center for adequate process management and product assurance controls. QMO can verify that product design requirements are met and can validate testing, critical inspections, and corrective actions. Any number of facility evaluations are performed or verified including: hazard controls, process capabilities, compliance safety, and/or environmental requirements.

The critical deliverables for FY04 include:
1. Quality surveys/audits and reports
2. Quarterly reports on assistance provided to RMO

4.3 QUALITY MANAGEMENT

QMO provides several unique quality services. This service includes the *GIDEP*, a NASA/DOD sponsored activity that facilitates the voluntary exchange of technical data related to parts, components, materials, and the Lessons Learned Information System (LLIS), a system that collects and makes available, for whomever may have benefit from the experience of others, the lessons learned from almost forty years in the aeronautics and space business.

The QMO also administers the *QASAR Program*, a program that recognizes accomplishments in quality-assurance disciplines for both civil servants and contractors.

QMO manages the M&P and quality assurance resources of the RMO and reports activities to the 8000 office monthly.

The critical deliverables for FY04 include:
1. GIDEP Reports, including analysis, when appropriate
2. Quarterly (and Best of the Best annual) QASAR selection and award
3. Quarterly LLIS reports on new activities

4.4 QMO METRICS

1. Sixty percent QMO Staff “Project Direct”
2. Ninety percent of scheduled annual audits completed

5.0 GLENN SAFETY OFFICE (GSO/8300)

The Glenn Safety Office (GSO) provides safety engineering and technical support to all GRC activities. The support is provided based on a comprehensive safety program, defined specifically for GRC. The Program ensures that the Center follows recognized safety codes and standards in all areas of operation, including the modification to, construction of, or demolition of Center facilities. By fulfilling this role, GRC ensures the implementation of the Agency Safety Initiative (ASI) and in the future the OSHA Voluntary Protection Program (VPP) Certification. The key activities and processes for the Glenn Safety Office are:

Safety Management

- ASI Implementation
- VPP Implementation
- Safety Health and Environmental Board
- Labor Management Safety Board Support
- Document Management
- ISO/BMS Implementation
- Mishap Reporting
- Mishap Investigations
- Safety Training
- Emergency Preparedness Planning

Safety Engineering

- Hazard Analysis
- Safety Permit Program Management
- Pressure Vessels
- Fire Protection
- Hydrogen/Oxygen Safety
- Technical Support

Safety Compliance

- Regulatory Compliance
- Facilities Inspections
- Emergency Response
- Medical Response
- Confined Space Entry
- Lockout/Tagout
- Construction Safety
- Ergonomics
- Office Safety
- Shop Safety
- Lifting Devices

These programs are described in greater detail in the following sections.
Functional Activity Summaries that detail activity planning are on Page 49 through 51 of Appendix 1. The Resources Summary for GSO FY04 Operations is depicted in Figure 2-3 of Appendix 2. Out-year resource estimates can be found in Figure 3-5 of Appendix 3.

5.1 SAFETY MANAGEMENT

The GSO organization supports the Center operations by coordinating day-to-day safety program activities. These activities relate to the implementation requirements of 29 CFR 1960, *"Occupational Safety & Health Administration-Safety and Health Standards."*

The Safety Program is based on the risk management principles outlined in NASA Policy Guidance NPG 7120.5A. Safety, Health and Environmental Board (SHEB) defines the guidelines for assessing and accepting risk, and the Glenn Safety Office supports line management in the management of risk at the Center associated with project and program support.

As part of the implementation of ASI, GRC supports the Performance Evaluation Profile (PEP) survey, the main metric that the Agency uses to assess improvements within the Safety Program. This is also a primary tool for the implementation of VPP at the Center.

GSO Manages the Emergency Preparedness Planning and Response functions for the Center and is responsible for maintenance and revision activities for the Center "*Emergency Preparedness Plan*."

The GSO provides the following management activities: support to line management for mishap/incident investigation and reporting, tracking and analysis of mishap/incident data, and support to the SHEB and Area Safety Committees.

The NASA Safety Reporting System (NSRS) can use by employees to report unsafe or unhealthy condition anonymously. The Safety, Health, and Environmental Help Line can also be used to report unsafe and unhealthy conditions as well as concerns and questions.

GSO has developed procedures in response to the GRC Business Management Systems (BMS) and ISO 9001 requirements, including a Document Management System. The primary document that outlines the safety program and meets ISO/BMS requirements is the Glenn Safety Manual. GSO manages the Glenn Safety Manual, including development/revision, and configuration control.

GSO coordinates training needs that ensure compliance with all OSHA requirements. The GSO supports all supervisors in assessing the safety training needs of their personnel. GSO provides safety training, alert bulletins, and awareness programs.

This element addresses Core Program Requirements (CPR) 1and 4 under ASI. This program requirement includes Management Commitment and Employee Involvement and Safety Training.

The critical deliverables for FY04 include:
1. Complete ASI Implementation Plan
2. Review and modify the Glenn Safety Manual
3. Review and update Safety Training Program for employees and supervisors
4. Emergency Preparedness Table Top Exercises [Goal- Conduct at least five]

5.2 SAFETY ENGINEERING

Safety Committees (ASC) provide third-party safety reviews to project and program support activities at GRC. The Safety Permit Program has been modified to ensure that all required records meet the criteria specified by ISO 9001 and Business Management System (BMS). GSO is the repository of all active and expired/terminated permits. These permits contain critical information that includes qualified operators lists, research facility configuration, check sheets, and emergency procedures.

GSO supports on-going Center activities by supporting all facilities and research operations. It coordinates the technical review of safety, engineering, and procurement deliverables.

GSO also provides engineering review services (fire protection/life safety, electrical, mechanical/HVAC, chemical/process/materials, aircraft safety).

The Safety Office's technical support is based upon the risk management principles outlined in NPG 7120.5A. The individuals in the GSO who provide technical support perform third-party reviews for all on-going facility programs and processes at GRC. Such reviews provide an independent and impartial perspective on technical safety and engineering requirements. The ESB, the Safety

Committees, and the GSO support line management in managing risks at the Center associated with technical support activities.

This element addresses CPR 2 and 3 under ASI. These program requirements include Worksite Hazard Analysis (CPR 2) and Hazard Prevention and Control (CPR 3).

The critical deliverables for FY04 include:

1. Implementation of the Hazard Analysis program
2. Continue Implementation of the Job Hazard Analysis Program
3. Complete Audit Actions
4. Review and update as required GRC, emergency preparedness plan annexes and submit report to NASA Headquarters Code Q

5.3 SAFETY COMPLIANCE

GSO is involved in technical support activities involving Government and industry codes, regulations, and standards that apply to the technical discipline under consideration. It also provides technical support services like interdisciplinary reviews (procurement deliverables, safety permits, confined space permits).

GSO is responsible for responding to emergencies, including medical emergencies. Personnel provide these services 24 hours a day, 7 days a week. This process is outlined in the Center's Emergency Preparedness Plan (EPP).

The GSO supports the Center construction activities by coordinating day-to-day safety program activities, conducting or coordinating safety-training programs, and developing and communicating safety policy. Construction Support safety activities are based upon, but not limited to, the requirements of 29 CFR 1926, *"Occupational Safety & Health Administration-Safety and Health Regulations for Construction*."

Construction programs include the modification to, construction of, or demolition of Center facilities. GSO provides the following construction support services: construction inspections, including, but not limited to, lockout/tagout, construction safety, personal protective equipment, confined space entry, cranes/lifting devices, mishap/incident investigation and reporting, vehicle and pedestrian safety, and reviews of safety requirements for each project.

This element addresses Core Program Requirements (CPR) 1 and 3 under ASI. These program requirements include: Management Commitment and Employee Involvement (CPR 1), and Hazard Prevention and Control (CPR 3).

The critical deliverables for FY04 include:

1. Verify that all current activities comply with OSHA requirements
2. Conduct quarterly and annually facilities safety inspections
3. Review and update Building Evacuation Program

5.4 GSO METRICS

1. Employee Lost Time Rate [Goal – Less than .10 per 200,000 hours worked]
2. Project Reviews [Goal – Complete reviews on agreed schedule]
3. Hazard Analysis [Goal – Complete assessments on agreed schedule]
4. Safety Training [Goal – Develop Safety Training Assessment tool]
5. Safety Training [Goal – Train supervisors on the use of the Safety Training Assessment tool]
6. Facilities inspections [Goal – complete planned facilities inspections]
7. Safety Audits [Goal – complete planned programmatic audits]

6.0 ENVIRONMENTAL MANAGEMENT OFFICE (EMO/8400)

The Environmental Management Office (EMO) provides programs and services to ensure GRC personnel meet environmental requirements and minimize environmental liability. EMO supports the GRC mission by fostering a safe and healthful workplace for its employees and ensures that operations are protective of the community and the environment.

EMO provides products and services to our customers at GRC and supports Plum Brook Station (PBS) environmental, health, and safety personnel in their implementation and execution of environmental, health, and safety services at PBS.

The key activities and processes for the EMO are:

Environmental Management System (EMS)
- Environmental Planning
- Implementation and Operation
- Checking and Corrective Action
- Management Review

Prevention
- Pollution Prevention

Compliance
- Environmental Compliance
- Industrial Hygiene
- Health Physics
- Chemical Management
- Chemical Sampling and Analysis
- Waste Management

Restoration
- Environmental Remediation
- Reactor Decontamination and Decommissioning Support
- Disposal of unwanted radioactive sources and radioactive materials
- Construction Support
- Noise, Asbestos, and Lead Paint abatement

Conservation
- Historic and Archeological Preservation
- Habitat and Species Conservation

Outreach
- Aero-Environmental Bus
- Earth Day Activities
- Center Environmental Awareness

Functional Activity Summaries that detail activity planning are on Pages 52 through 57 of Appendix 1. The Resource Summary for EMO FY04 operations is depicted in Figure 2-4 of Appendix 2. Out-year resource estimates can be found in Figure 3-6 of Appendix 3.

6.1 ENVIRONMENTAL MANAGEMENT SYSTEM

Glenn Research Center's ISO 14001-compliant Environmental Management System (EMS) provides the organizational infrastructure for achieving the Center policy to operate in a manner that preserves and protects the environment through pollution prevention, the continual improvement of operations, and compliance with regulations.

EMS activities include environmental planning to identify the potential environmental impacts associated with the Center activities, regulatory requirements, and degree of risk. Center-wide objectives and targets are established for all priority impacts. Controls for the Center environmental impacts are specified in the Center Environmental Programs Manual. Periodic reviews are conducted to determine conformance to procedures. Non-conformances are entered into the Center Corrective and Preventive Action Reporting system and tracked to ensure corrective action is completed. The Safety, Health and Environmental Board conducts periodic management reviews of the EMS.

The critical deliverables for FY04 include:

1. Facilitating and tracking progress towards achieving the Center environmental objectives and targets
2. Integration of the EMS and BMS internal and external audits
3. Implementation of the EMS at PBS

6.2 PREVENTION

EMO manages a Pollution Prevention (P2) program with the goal of reducing the use of hazardous materials and the generation of waste, reducing costs to the Center and minimizing future liability. The P2 effort is lead by a P2 Team with membership from multiple organizations. Working with customers and stakeholders, the team identifies and evaluates pollution prevention opportunities, assisting in the implementation of opportunities that have merit.

The critical deliverables for FY04 include:

1. Identify and evaluate P2 opportunities
2. Develop and implement a program to recycle or reuse construction waste.
3. Facilitate implementation of worthwhile opportunities

6.3 COMPLIANCE

Environmental compliance products and services include serving as a liaison between GRC and the external regulating agencies and actively participating with all GRC organizations in planning, conducting, and monitoring activities which could have environmental implications. Included is waste management, monitoring of fuel storage tanks, processing and maintaining air and water permits, performing environmental site assessments, and lending technical assistance to ensure activities conducted at the facility are accomplished in compliance with federal, state, and local regulations.

Occupational health compliance activities focus on satisfying OSHA and NRC regulations as well as relevant industry standards to ensure GRC maintains a healthful work environment. Specific functional areas of the Occupational Health teams include hearing conservation, respiratory protection, asbestos, lead, and mercury surveillance and abatement, assessment of worker exposures to chemical and physical hazards, process ventilation, chemical management and hazard communication, ionizing radiation safety, and laser and non-ionizing radiation safety.

EMO also supports the Glenn Safety Office (GSO) in periodic self-inspections of the Center compliance with safety, health, and environmental regulations.

In FY04 the critical deliverables are:

1. Compliance with all environmental permits, licenses, and regulatory requirements
2. Support to the GSO in achieving goals under the Agency Safety Initiative
3. Compliance with OSHA and NRC standards as well as guidelines specified in selected industry standards.

6.4 RESTORATION

EMO's restoration services include abatement programs for noise, asbestos, and lead-containing paint; feasibility studies and remedial activities under CERCLA (Comprehensive Environmental Response, Compensation, and Liability Act); RCRA (Resource Conservation Recovery Act) remediation approved by Ohio EPA for underground storage tank sites at Plum Brook Station; supporting the decommissioning of the Plum Brook Reactor Facility; and disposal of unwanted radioactive sources and of miscellaneous radioactive materials associated with the past operations of the GRC cyclotron facility..

The Center funds pro-active noise, asbestos and lead abatement programs. Funding for CERCLA and RCRA activities is from the Environmental Compliance and Restoration portion of the Agency CoF program.

In FY04, the critical deliverables are:

1. Complete CERCLA remediation feasibility studies under the State of Ohio Findings and Orders
2. Design and complete the remediation projects in accordance with the Environmental Compliance and Restoration Program Plan (see Appendix 2)
3. Continue RCRA closure of underground storage tank areas at Plum Brook
4. Provide support to the Plum Brook Reactor Decommissioning project team
5. Disposal of unwanted radioactive sources and low level radioactive wastes
6. Identify projects requiring abatement, and work with Center management to ensure project funding and execution

6.5 CONSERVATION

EMO manages programs to identify and conserve sensitive habitat, prevent adverse impacts on surrounding environs, preserve archeological value present, and preserve the historic value of GRC facilities. Glenn Research Center's Lewis Field is adjacent to the Cleveland Metro Parks and the Rocky River watershed that empties into Lake Erie, popular recreational areas for residents of the Greater Cleveland area. Plum Brook Station is also near Lake Erie and the major recreational and tourist attractions near Sandusky, Ohio. Lewis Field and Plum Brook Station are also home to, and provide habitat for, several threatened species. Finally, GRC has several facilities that are important historically and the property may have archeological value. It is critical that GRC operates to conserve existing sensitive habitat, to preserve its archeological and historical value, and to prevent adverse impact on surrounding areas.

In FY04 the critical deliverables are:

1. Develop and implement a species management plan for Lewis Field and Plum Brook Station
2. Continue to support activities to preserve the history of the Plum Brook Station Reactor Facility
3. Develop and implement an historical preservation program based upon the results of the FY 2002 archeological survey of Lewis Field and Plum Brook Station

6.6 OUTREACH

EMO "Outreach" programs are intended to educate, inform, and provide a means for a public interchange of ideas and concerns about the environment and to help avoid unnecessary public concern and misunderstanding that can result in loss of productivity and costly delays. The main outreach arm for the EMO is the NASA Glenn Earth Day Committee, chartered to educate and provide awareness in the areas of occupational health and the environment. It includes activities that highlight the environment and environmental accomplishments at GRC, Plum Brook Station, and within NASA.

EMO takes a leadership role in Earth Day events and manages and schedules the Aero-Environmental Traveling Exhibit Bus. EMO supports joint activities with other organizations, such as the Aeronautics Directorate, United States Environmental Protection Agency (USEPA), and Adopt an Interchange program. The EMO also supports student program activities; including participating in career day events, school educational programs, and student internships.

In FY04, the critical deliverables are:

1. Continue to deliver outreach services through management of the Aero Environmental Bus
2. Develop and implement an EMS awareness program so that all Center personnel are aware of the EMS and its role in ensuring that the Center achieves its environmental objectives and targets

6.7 EMO METRICS

1. Zero non-compliances with environmental permits, licenses, and regulations
2. 100% completion of full or interim corrective actions from facility inspections within 90 days
3. 100% Accomplishment of Center-wide environmental objectives and targets (http://osat.grc.nasa.gov/emo/EMS/Targets.PDF)

7.0 SECURITY MANAGEMENT AND SAFEGUARDS OFFICE (SMSO/8500)

The **Security Management and Safeguards Office (8500)** is responsible for the development, implementation, and maintenance of processes and programs to insure that: Government personnel and those working or visiting at GRC are safe and protected from harm; NASA missions and programs are protected from terrorism; national security classified information and sensitive unclassified information is properly safeguarded against unauthorized disclosure, espionage or theft; and NASA property is protected from theft and sabotage. The Security Program analyzes vulnerabilities and threats to people, property, and information, and in collaboration with the customer, designs effective and cost conscious solutions to minimize risk. The Counterintelligence Program develops initiatives to detect, deter, and neutralize espionage, other foreign intelligence activities, or sabotage conducted for or on behalf of foreign powers, organizations or persons, or international terrorist activities.

Physical Security
- Gate and Building Access Control
- Emergency Dispatch
- Patrols and Incident Responses
- Investigations
- Traffic Enforcement Program

External Physical Security
- Emergency Preparedness
- Emergency Response Exercises
- Coordination with Local, County, State and Federal Agencies

Personnel Security
- Security Education and Awareness Training
- Security Clearance Program
- Background Investigations
- Misconduct Investigation Support

Information Security
- Foreign Visit Coordination
- Classified Information Control Program
- Industrial Security
- Security Education and Awareness

Classified Information Systems Security
- Classified IT Systems Certification and Accreditation
- Communications Security Management

Counterintelligence
- Investigations
- Education and Awareness Training
- THREAT Research and Analysis
- Foreign Travel Briefings and Debriefings
- Liaison

Functional Activity Summaries that detail activity planning are on Page 58 through 64 of Appendix 1. The Resource Summary for SMSO FY04 operations is depicted in Figure 2-6 of Appendix 2. Out-year resource estimates can be found in Figure 3-8 of Appendix 3.

7.1 PHYSICAL SECURITY

Physical security projects and services include conducting reviews of GRC designated facilities where classified or sensitive research or testing is being conducted. The reviews are designed to ensure compliance with national and NASA regulations, and through process verification, that access control systems are efficient, effective, and user friendly.

SMSO provides timely and effective responses to incidents and emergencies, conducting incident investigations in a thorough and timely manner, and ensuring that corrective action is taken to prevent future re-occurrences. These measures include oversight of the implementation operation, and use of physical security barriers, lighting, fencing, CCTV and sensor systems, and technical security devices and systems. The function includes the oversight of a guard force. The SMSO also enforces the Center vehicle traffic regulations.

FY04 planned critical deliverables:

1. Installation of Access Control System (ACS) in critical buildings based on a 5-year prioritized plan that began in FY00 and consistent with the availability of funds
2. Implementation of OMB Supplemental Security Funding requirements consistent with GRC plan

7.2 EXTERNAL PHYSICAL SECURITY

The Security Management and Safeguards Office personnel support the various boards and committees necessary to maintain the GRC presence in, and impact on, NASA and the local and regional emergency planning community. This includes participation on the NASA Headquarters' Emergency Preparedness Committee and with local, county, and state emergency management agencies. Community Outreach includes Boards of Education career programs, information programs and speaker requests, and ad hoc committees and panels. The Office participates in the GRC Emergency Preparedness and Response activities, coordinating with three municipal fire and emergency response operations (Cleveland, Brook Park, and Fairview Park) and other federal, county, and state agencies. These activities include:

Emergency Preparedness
Community Support Activities
Emergency Response
Incident Command
24-hour Emergency Coordination
Community Response
Emergency Planning Committees
Law Enforcement Liaison

FY04 planned critical deliverables:

1. Community review of GRC emergency requirements
2. Provide community exercise training
3. Complete Emergency Preparedness Exercises
4. Maintain communication with GRC Safeguards Office counterintelligence for threat information affecting the GRC emergency preparedness program

7.3 PERSONNEL SECURITY

Personnel security services and products include processing government and contractor employees for background investigations, security clearance actions, and serious conduct issue resolutions.

FY04 planned critical deliverables:

1. Transfer Security Information Management System (SIMS) data to the upgraded information technology system
2. Update of background investigations that are due to expire and certification of their continued need
3. Process security checks in support of information technology position sensitivity program

7.4 INFORMATION SECURITY

Information security involves the identification of security controls and measures for the protection of classified and sensitive information.

FY04 planned critical deliverables:

1. Conduct annual review of classified holdings
2. Develop and implement an effective Operational Security (OPSEC) program by providing OPSEC awareness and evaluations

7.5 CLASSIFIED INFORMATION SYSTEMS SECURITY

Classified information systems security includes assessments of computer systems to identify vulnerabilities and establish effective countermeasures to deal with those threats to the system. This is done in close coordination with systems and data owners to assure information processed, stored, or transmitted in automated systems is protected in accordance with federal regulations.

FY04 planned critical deliverables:

1. Re-certify and re-accredit all classified computer systems in accordance with established national standards

7.6 COUNTER INTELLIGENCE PROGRAM (CI)

The Counter Intelligence program develops the necessary capabilities to detect, deter, and neutralize espionage, other intelligence activities, or sabotage conducted for or on behalf of foreign powers, organizations or persons, or international terrorist activities. These capabilities include CI investigations, CI education and awareness training, CI threat analysis, and liaison with appropriate agencies. The CI program works in close coordination with program managers, employees, the Headquarters CI Program Coordinator, and personnel from other agencies to ensure CI requirements are effectively implemented.

FY04 planned critical deliverables:

1. Conduct CI Education and Awareness Briefings for managers and employees in possession of sensitive information and employees traveling to foreign countries
2. Liaison with Program Managers, local law enforcement and intelligence agencies and others with CI interest to share intelligence information
3. Develop CI Web page with awareness information on Counter Intelligence and Counter-terrorism
4. Develop CI database for the analysis of foreign threat information

7.7 SMSO Metrics

1. Classified Security Containers [Goal- Review 100%]
2. Building Security System Installations [Goal- 2]
3. COMSEC Reviews [Goal-100%]
4. Theft Reduction [Goal-zero tolerance]
5. Surveys and Assessments [Goal-five]
6. Foreign Travel Briefings and Debriefings [Goal-100%]

GLENN RESEARCH CENTER

SAAD AOA - FY04

APPENDIX 1

FY04 FUNCTIONAL ACTIVITY SUMMARIES

SAFETY AND ASSURANCE DIRECTORATE
NASA GLENN RESEARCH CENTER
SAAD MANAGEMENT OPERATIONS (8000)
FY04 FUNCTIONAL ACTIVITY SUMMARIES

ACTIVITY DESCRIPTION: CODE Q MANAGEMENT

Center Technical Program Plans (CTPP) are developed each year by 8000 personnel and other Directorates at the Center. Projects approved by NASA Headquarters, Code Q receive funding. Funding is received at the overall program and allocated to projects. Code Q has mandated 85% cost and 100% obligation requirements for current year funds. More than half the funds support activities within the 8000 organization. The remaining funds support activities in the 2000, 5000, 6000 and 7000 organizations.

METRIC(S):	GOAL(S)
1. Percent funds costed 2. Percent funds obligated	1. 85% costed in current FY 2. All obligated in current FY
TASK(S):	CUSTOMER(S):
1. Code Q cost performance	1. CTPP Managers 2. Code Q Financial Management

SAFETY AND ASSURANCE DIRECTORATE
NASA GLENN RESEARCH CENTER
SAAD MANAGEMENT OPERATIONS (8000)
FY04 FUNCTIONAL ACTIVITY SUMMARIES

ACTIVITY DESCRIPTION: WBS FUNDING MANAGEMENT

Funds are allocated to 8000 activities in Institutional Safety, Risk Management, Quality Management, Environmental, and Security. Funds are distributed from GRC's Work Breakdown Structure funds. The majority of commitments provide support service contractors for the organizations. Funds are committed early in the fiscal year and closely tracked to cost projections for the Offices.

METRIC(S):	GOAL(S):
1. Percent obligated	1. All obligated in current FY
TASK(S):	CUSTOMER(S):
1. Functional budget (WBS)	1. Staff 2. 0200/Resource Management and Analysis Office

SAFETY AND ASSURANCE DIRECTORATE
NASA GLENN RESEARCH CENTER
SAAD MANAGEMENT OPERATIONS (8000)
FY04 FUNCTIONAL ACTIVITY SUMMARIES

ACTIVITY DESCRIPTION: COST CENTER FUNDING MANAGEMENT

Funds are allocated to 8000 activities in Institutional Safety, Risk Management, Quality Management, Environmental, and Security. Funds are distributed from GRC's Cost Center funding. The majority of commitments provide support service contractors for the organizations. Funds are committed early in the fiscal year and closely tracked to cost projections for the Offices.

METRIC(S):	GOAL(S):
1. Percent costed	1. All costed in current FY
TASK(S):	CUSTOMER(S):
1. Functional budget (Cost Center funding)	1. Staff 2. 0200/Resource Analysis and Management Office

SAFETY AND ASSURANCE DIRECTORATE
NASA GLENN RESEARCH CENTER
SAAD MANAGEMENT OPERATIONS (8000)
FY04 FUNCTIONAL ACTIVITY SUMMARIES

ACTIVITY DESCRIPTION: CoF MANAGEMENT

Environmental Compliance and Restoration

Requirements are identified by a planning process that includes appropriate personnel from facilities, Plum Brook, and the Environmental Management Office (EMO). The requirements are communicated to NASA Headquarters, Code JE, and funding requests are submitted when projects are ready to move forward. Once funding is received, projects are managed either by the PBRF Decommissioning Office, EMO, or the Facilities and Test Engineering Division.

METRIC(S):	GOAL(S):
1. Percent obligated	1. 90% obligation in the current FY
TASK(S):	CUSTOMER(S):
1. Complete remedial investigation/feasibility study 2. Prepare remedial design 3. Contract for remedial action	1. HQ/Code JE 2. 0200/Resources Analysis and Management Office

SAFETY AND ASSURANCE TECHNOLOGIES DIRECTORATE
NASA GLENN RESEARCH CENTER
RISK MANAGEMENT OFFICE (8100)
FY04 FUNCTIONAL ACTIVITY SUMMARIES

ACTIVITY DESCRIPTION: AEROSPACE TECHNOLOGY ENTERPRISE

SAAD provides program/project assurance for Aerospace Technology Enterprise activities at GRC. GRC activities include developing hardware and software to conduct Aerospace Technology propulsion research. To reduce risk and help assure safety and mission success, SAAD provides support in several disciplines. At this time, these include risk management; system safety; materials and processes; reliability and maintainability; software product assurance, and quality. SAAD has been successful in working with the Aeronautics and Space Directorates to initiate new program/project assurance activities for the UEET, AvSP, APP, CICT, ECS, ECT, 3rd Generation RLV, Airspace Systems, and 2ND Generation RLV programs/projects.

RISK OF DOING NOTHING:

Not performing assurance for Aerospace Technology projects will increase risk of mission failure, including the possibility of injury to personnel or damage to test hardware and test facilities.

METRIC (S):	GOAL (S):
1. Percent customer satisfaction rating. 2. Percent of programs/projects contacted. 3. Percent requests supported per AOA agreement. 4. Percent of IA requests completed.	1. 95% customer satisfaction rating, to assess value added to projects. 2. 95% of programs/projects contacted to describe PAP and RMP support capabilities, so that the programs/projects understand what is available. 3. 100 Percent of programs/projects supported with PAP/RMP activity as requested, to assure project safety and mission success. 4. 100% of IA's requested completed.
TASK (S):	CUSTOMER (S):
1. Distribution of customer survey forms to Aerospace Technology Program/Project Managers. 2. Contact programs/projects to describe PAP and RMP support capabilities so that they understand what is available. 3. Support programs/projects with PAP/RMP activity as requested, to assure project safety and mission success. 4. Complete all IA's requested.	1. NASA Headquarters Codes Q & R 2. Director, Aeronautics Directorate 3. Director, Space Directorate 4. Vehicle Systems Program Office 5. Chief, Aviation Safety Office 6. 2nd Generation Program Office 7. CICT Program Office 8. ECS Program Office 9. Airspace System Program Office 10. 3rd Generation Program Office 11. Enabling Concepts and Technology Program Office

SAFETY AND ASSURANCE TECHNOLOGIES DIRECTORATE
NASA GLENN RESEARCH CENTER
RISK MANAGEMENT OFFICE (8100)
FY04 FUNCTIONAL ACTIVITY SUMMARIES

ACTIVITY DESCRIPTION: SPACE - MICROGRAVITY SCIENCE

SAAD provides program/project assurance support to space experiment project activities at GRC and its contractors. These activities include creating hardware and software to conduct combustion/fluid physics Microgravity experiments and to make Microgravity acceleration measurements on-board sounding rockets, the Space Shuttle, and the International Space Station.

To reduce risk and help assure the safety and success of GRC Microgravity Experiments, SAAD provides support to flight projects in several SR&QA disciplines. These include risk management (including CRM training), system safety, materials and processes, quality assurance, reliability/maintainability, and software product assurance.

SAAD's standard work process with space experiment developers includes a Product Assurance Plan based on GRC's "Standard Assurance Requirements and Guidelines for Experiments" (SARGE). The plan defines work accomplished to ensure that hardware/software delivered for flight is safe and has a reasonable expectation of meeting performance requirements and achieving science objectives.

SAAD will assist the Microgravity Science Division in developing MRDOC delivery orders and evaluating MRDOC deliverables. SAAD will also conduct insight/oversight surveillance as necessary to assure that contract requirements are properly satisfied.

RISK OF DOING NOTHING:

The risk in not performing Program/Project Assurance for GRC space experiments (including the surveillance of payload development performance-based contractors), is an increased probability of mission failure. This includes an increased possibility of death or serious injury to astronauts/other personnel, or damage to the launch vehicle, flight hardware, or other equipment.

METRIC (S):	GOAL (S):
1. Percent of successful flight experiments. 2. Percent planned FTE program support per month. 3. Percent of the MRDOC annual surveillance requirements completed. 4. Percent customer satisfaction rating.	1. 100% of the flight experiments actively supported by SAAD attaining minimally demonstrated success as defined by the project. 2. 95% attainment of AOA planned resource support per month. 3. 100% completion of MRDOC annual surveillance requirements. 4. 95% customer satisfaction rating.
TASK (S): 1. Provide required safety and mission assurance support to space experiment flight projects. 2. Continue working with the customers and the SAAD Quality Management Office (QMO) to effectively implement the surveillance process for MRDOC. 3. Complete surveillance annual auditing requirements for MRDOC in collaboration with QMO. 4. Distribution of customer survey forms to Microgravity Science Program/Project Managers.	CUSTOMER (S): 1. NASA HQ Codes Q & M & U 2. GRC Director, Space 3. Microgravity Science and other GRC Divisions with Space Experiments: • Division Management • Program Managers • Project Managers

SAFETY AND ASSURANCE DIRECTORATE
NASA GLENN RESEARCH CENTER
RISK MANAGEMENT OFFICE (8100)
FY04 FUNCTIONAL ACTIVITY SUMMARIES

ACTIVITY DESCRIPTION: Space - Space Technology

SAAD provides program/project support to Space Technology activities at Glenn Research Center and its contractors. These activities include developing hardware and software to conduct space flight experiments. To reduce risk and help assure safety and mission success, SAAD provides support in several disciplines. These include system safety, materials and processes, quality assurance, reliability/maintainability, and software-product assurance. SAAD provides SMA support to the Space Power and Propulsion, the Space Communications, and Space Transportation Programs at GRC.

RISK OF DOING NOTHING:

Not performing program/project assurance for these activities will increase probability of mission failure. This includes the possibility of death or serious injury to astronauts/other personnel or damage to the launch vehicle, flight hardware, or other equipment.

METRIC (S):

1a. Percent customer satisfaction.
1b. Percent total yearly SMA resources vs total yearly project budget.
1c. Percent Total Project SMA budget vs. percent Project science objectives achieved.
1d. Number of PAP and RMP completed.
2a. Number of closed vs. open risks.
2b. Average time to close risks.
2c. Ratio of risks to risks that became problems.

GOAL (S):

1. All Customers believe RMO is providing value added service in helping meet mission objectives.
2. Highly effective risk management process for Projects/Programs.

TASK (S):

1. Send out customer surveys on a quarterly basis.
2. Compile yearly Project SMA resources expended and compare to total yearly Project budgets.
3. Compile total Project SMA resources expended and compare to Project success in meeting mission objectives.
4. Compile information from risk management database (Number open, closed, time to closure).
5. Compare information from risk database to information in PRACA database.
6. Compile information on completed PAPs and RMP and update Microsoft Project list.

CUSTOMER (S):

1. NASA HQ Codes Q & M
2. Director, Space
3. Chief, Power and Propulsion Office
4. Chief, Space Communications Office
5. Manager, Space Transportation Project Office

SAFETY AND ASSURANCE TECHNOLOGIES DIRECTORATE
NASA GLENN RESEARCH CENTER
RISK MANAGEMENT OFFICE (8100)
FY04 FUNCTIONAL ACTIVITY SUMMARIES

ACTIVITY DESCRIPTION: Safety and Mission Assurance Enterprise Support

Assurance Technology Center - Coordination and leadership for the Assurance Technology Center is required to support Agency Safety and Mission Assurance efforts. The primary focus for these activities is in four areas: Education & Training; Data Collection & Knowledge Management; Mishap Investigation; and Research & Development. Safety & Mission Assurance professionals throughout the Agency rely on this coordination to assist them with their individual activities.

RISK OF DOING NOTHING:
Loss of a coordinated effort within the Safety & Mission Assurance community to gather, compare and promote the many resources and efforts currently accomplished at the Field Centers throughout the Agency. Loss of the ATC Champions established in FY03 to assist in this coordination and communication across Center boundaries regarding Safety & Mission Assurance activities.

METRIC (S):
1. Training & Education: Number of Tools/Outputs from ATC Champions
2. Training & Education: Number of existing training programs reviewed for input to ATC Training Materials or Training Model
3. Data Collection & Knowledge Management: Complete development and deliver monthly newsletters to SMA personnel on demand
4. Mishap Investigation: Number of NASA Centers that have begun implementation of the enhanced Incident Reporting Information System
5. Research & Development: Number of research symposia and/or training classes supported and/or hosted at the ATC facility

GOAL (S):
1. 4 tools/outputs that can be used Agency –wide by Safety & Mission Assurance professionals
2. 6 programs from throughout the Agency, including traceability to the specific inputs from each program
3. Completion of capability by September 30, 2004
4. 100% of Centers utilizing the enhanced IRIS system by the end of FY04
5. 6 symposia and/or training classes hosted at the ATC facility

TASK (S):
1. Work with the ATC Champions to develop meaningful tools for the Safety & Mission Assurance community
2. Review Center-specific training programs and incorporate appropriate elements into an Agency-wide Safety & Mission Assurance resource
3. Complete development of website infrastructure and delivery capability
4. Complete Phases I, II and III of the planned implementation across the Agency
5. Continue advocacy of ATC facilities as a hub for Safety & Mission Assurance training and learning across the Agency

CUSTOMER (S):
1. NASA Headquarters Codes Q, R, S, J, F, A and H
2. NASA Centers SMA organizations

SAFETY AND ASSURANCE DIRECTORATE
NASA GLENN RESEARCH CENTER
RISK MANAGEMENT OFFICE (8100)
FY04 FUNCTIONAL ACTIVITY SUMMARIES

ACTIVITY DESCRIPTION: Safety and Mission Assurance (Continued)

Continuous Risk Management - RMO will be involved in various activities to support Continuous Risk Management (CRM) at the Center. SAAD will assist these Programs/Projects/Facilities in the application of CRM principles, tools and techniques, including those of NPG 7120.5 where appropriate, by providing a vast array of assurance services. These services include consultation/facilitation for both top-level and detailed risk-decision processes; training in the many applicable risk assessment/management tools; as well as detailed development of risk assessments data and metrics. These services will be applied based on the respective Program/Project/Facility's level of programmatic and safety risks. Specific implementation of both Risk Based Acquisition Management (RBAM) and Process Based Mission Assurance (PBMA) will be facilitated on GRC acquisitions and programs as appropriate. Deliverables associated with this effort include risk management plans, risk lists and risk metrics for new and existing programs. Coordination and leadership for the Assurance Technology Center is required to support Agency Safety and Mission Assurance efforts.

RISK OF DOING NOTHING:
Not performing risk management activities for GRC programs, projects, and facilities will increase the risk of mission failure, including the possibility of injury to personnel or damage to test hardware and facilities. Not doing PBMA will result in programs and projects not being aware of requirements and writing new Program and Project plans from 'scratch'. Without the web-based resource contained in the PBMA, decision-makers are limited to phone conversations or video conferencing rooms.

METRIC (S):
1a. Number of Projects/Programs (P/P) trained in CRM.
1b. Scores on CRM course evaluation forms.
1c. Number of implemented RM Plans.
1d. Duration required for P/P to implement RM Plans.
2a. Number of SOW reqts derived from risks.
2b. Number of Acquisition Plans addressing risks.
2c. Number of RFPs incorporating risks.
2d. Number of source selections using risks as evaluation criteria.

GOAL (S):
1. Facilitate the integration of CRM into all applicable GRC Projects/ Programs.
2. Fully integrated RBAM process into the GRC Procurement processes.

TASK (S):
1a. Provide CRM training and tools to P/P.
1b. Perform corrective action based on feedback from CRM course evaluation forms.
1c. Assign CRM facilitators to P/P.
1d. Conduct CRM implementation assessments.
2a. Monitor GRC acquisition forecasts
2b. Assign SMA/RBAM personnel to SEB to facilitate RBAM process
2c. Conduct RBAM Workshops with SEBs.

CUSTOMER (S):
1. NASA Headquarters Codes Q, R, S, J and H
2. NASA Centers SMA and Procurement organizations
3. NASA GRC Program/Project/Facility Managers

SAFETY AND ASSURANCE DIRECTORATE
NASA GLENN RESEARCH CENTER
RISK MANAGEMENT OFFICE (8100)
FY04 FUNCTIONAL ACTIVITY SUMMARIES

ACTIVITY DESCRIPTION: Safety and Mission Assurance (Continued)

Process Based Mission Assurance (PBMA)-A Safety and Mission Assurance Knowledge Management and Collaboration tool, PBMA, will be transferred to GRC from Headquarters for it's operational phase and will operate in this mode in FY04. These Code Q RTOPs have been expanded to two RTOPs and a special task. Three tasks are associated in computer architecture, content management, Knowledge Registry, Communities of Practice and training updates. It is priced at 9 FTE at $1.3M. The second RTOP for FY04 establishes a new level of operational security for Secure Socket Layer Work Groups such as Source Evaluation Boards and Mishap Investigations Boards and is priced at 4 FTE and $0.5M. A special task is associated with secure white boarding and is currently an in house activity. PBMA has a function to support the new NASA Engineering and Safety Center (NESC) with Communities of Practice and its Knowledge Registry. PBMA won the Pioneer Award in e-Government in 2003 and was recognized by the CAIB in its final report as a supportive factor in accomplishing the Return to Flight Goal as soon as possible.

RISK OF DOING NOTHING:
Not performing program/project assurance for these activities will increase probability of losing the base of knowledge that exists at NASA as the work force ages and retires. PBMA directly supports the Presidential Agenda in e-Government.

METRIC (S):	GOAL (S):
1. Percentage of growth in number of Communities of Practices and memberships from baseline. 2. Percentage of growth in monthly visitors to web site. 3. Number of NASA people trained on PBMA Updates in FY 04. 4. Number of people in the Knowledge Registry. 5. Number of documents and video nuggets added to the PBMA website.	1. A ten percent increase. 2. A ten percent increase. 3. 250 people 4. 1000 Subject Matter Experts 5. 50 total
TASK (S):	CUSTOMER (S):
1. Track the number of Communities of Practices and memberships at the Intranet.com providers. 2. Track the number of visitors to the Web site. 3. Schedule training sessions and count the number of attendees at the training sessions. 4. Count the number of names in the Knowledge Registry database on a continuing basis. 5. Count the number of participants in the COP III Workshop. 6. Count the number of documents and video nuggets added to the PBMA website.	1. NASA Headquarters Code F, Q 2. All NASA Centers 3. NESC 4. DOD

SAFETY AND ASSURANCE DIRECTORATE
NASA GLENN RESEARCH CENTER
QUALITY MANAGEMENT OFFICE (8200)
FY04 FUNCTIONAL ACTIVITY SUMMARIES

ACTIVITY DESCRIPTION: QUALITY ENGINEERING

Quality Engineering provides contract review, specifications development, requirements tailoring, and general engineering expertise as outlined:

Non Destructive Engineering - selection of appropriate process
Materials & Process – provide matrix support of M&P function
Scanning Electron Microscopy - failure analysis and material identification
Welding Engineering/Quality – lead weld quality effort in concert with engineering

Documentation Review for parts or systems in general
Recommendations on feasibility, cost, and goodness of design
Electrical, Electronic and Electromagnetic components design and fabrication analysis

Review and Preparation of Material Usage Agreements
Review and Preparation of Materials Identification and Usage Lists
Maintenance of Materials and Processes Intercenter Agreements

RISK OF DOING NOTHING:

Cost and schedule impacts as well as potential added safety and reliability risk.

METRIC(S):	GOAL(S):
1. Number of QMO Staff "Project Direct"	1. Project Direct staff up to 3.5 FTE
TASK(S):	CUSTOMER(S):
1. Perform Failure Analysis 2. Review and Prepare MIULs 3. Review and Prepare MUAs 4. Space Project SMA	1. Glenn Project Managers 2. Product Assurance Leads, Product Assurance Managers

SAFETY AND ASSURANCE DIRECTORATE
NASA GLENN RESEARCH CENTER
QUALITY MANAGEMENT OFFICE (8200)
FY04 FUNCTIONAL ACTIVITY SUMMARIES

ACTIVITY DESCRIPTION: QUALITY ASSURANCE

Quality Assurance activities provide facility assessment, vendor surveillance, and general insight and oversight, as an integral part of the quality assurance function as outlined:

Support the ISO/BMS Process as requested by the ISO Project Office
Maintain GRC's internal assessment system for quality functions
Provide facilities surveys as needed or requested
Validate tests, data, or processes
Provide critical inspection verification when requested by the Risk Management Office (RMO) or Inspection Office
Verify hazard controls when requested by the RMO

RISK OF DOING NOTHING:

1. Products that do not meet requirements or specifications
2. ISO noncompliance
3. Projects taking un-quantified risks

METRIC(S):	GOAL(S):
1. Number of independent quality assessments of GRC functional area 2. Assigned ISO audits completed	1. Perform all assessments as per schedule 2. Participate in Internal Audit
TASK(S):	CUSTOMER(S):
1. Internal audits for ISO 9000 2. Facilities surveillance 3. Validation and verification	1. ISO Project Office 2. SAAD supported projects 3. Matrixed quality functions

SAFETY AND ASSURANCE DIRECTORATE
NASA GLENN RESEARCH CENTER
QUALITY MANAGEMENT OFFICE (8200)
FY04 FUNCTIONAL ACTIVITY SUMMARIES

ACTIVITY DESCRIPTION: QUALITY MANAGEMENT

GIDEP is monitored to provide a closed loop internal evaluation of active GIDEP Alerts across the Center. Lessons Learned are reported through the Quality Management function with Headquarters coordination. The QASAR Awards are monitored and the Best of the Best QASARs are selected through this Office for submission to Code Q.

RISK OF DOING NOTHING:

Critical Engineering disciplines will not be covered leading to higher risk, poor products, or unsafe conditions.

METRIC(S):	GOAL(S):
1. Number of lessons Learned entered 2. Number of QASAR awards submitted	1. Enter all LLIS items across GRC 2. Award one QASAR in each category each quarter
TASK(S):	CUSTOMER(S):
1. Support ISO 9001 2. Administer the LLIS 3. Administer the QASAR System 4. Evaluate GIDEP Alerts	1. Glenn programs, projects, activities, and operations requiring process improvement data

SAFETY AND ASSURANCE DIRECTORATE
NASA GLENN RESEARCH CENTER
GLENN SAFETY OFFICE (8300)
FY04 FUNCTIONAL ACTIVITY SUMMARIES

ACTIVITY DESCRIPTION: SAFETY MANAGEMENT

This activity consists of two major work areas:

1. Ensure implementation of programs at GRC/PBS to meet Safety Requirements
2. Develop training programs to ensure compliance with all OSHA Requirements

RISK OF DOING NOTHING:

1. Increased probability of personnel injury and/or death
2. Non-compliance with OSHA, NASA and other regulatory requirements

METRIC(S):	GOAL(S):
1. Review safety training for employees and supervisors 2. Reduce lost time events at GRC/PBS	1. Develop safety training assessment tool and train supervisors on use 2. Lost time rate below .10 per 200,000 hours worked
TASK(S):	CUSTOMER(S):
1. Conduct Safety Training/Awareness programs/ Activities 2. Implement Voluntary Protection Program 3. Implement Agency Safety initiative	1. Center Management/Staff 2. Facility Managers 3. R&D Organizations

SAFETY AND ASSURANCE DIRECTORATE
NASA GLENN RESEARCH CENTER
GLENN SAFETY OFFICE (8300)
FY04 FUNCTIONAL ACTIVITY SUMMARIES

ACTIVITY DESCRIPTION: SAFETY ENGINEERING
This activity consists of four major work areas:

1. Safety Permit Program
2. Hazard Analysis
3. Fire Protection
4. Technical Engineering Support

RISK OF DOING NOTHING:

1. Increased probability of personnel injury and/or death
2. Non-compliance with OSHA, NASA and other regulatory requirements

METRIC(S):	GOAL(S):
1. Completion of project reviews 2. Continue implementation of Hazard Analysis Program	1. Complete 100% of the engineering project reviews within the agreed schedule 2. Complete 100% of the planned hazard analysis requests within the agreed schedule
TASK(S):	CUSTOMER(S):
1. Oversight and review of permitted activities 2. Management of membership and chairperson appointments for Safety Committees (SCs) 3. Train managers and assist them with conducting Job Safety Analyses (JSAs) and facility hazard analyses 4. Oversight and review of hazard analysis 5. Oversight of project reviews	1. Center Management/Staff 2. Facility Managers 3. R&D Organizations

SAFETY AND ASSURANCE DIRECTORATE
NASA GLENN RESEARCH CENTER
GLENN SAFETY OFFICE (8300)
FY04 FUNCTIONAL ACTIVITY SUMMARIES

ACTIVITY DESCRIPTION: SAFETY COMPLIANCE

This activity consists of two major work areas:

1. Develop programs to ensure compliance with all OSHA Requirements
2. Perform facility Safety Inspections and programmatic audits

RISK OF DOING NOTHING:

1. Increased probability of personnel injury and/or death
2. Non-compliance with OSHA, NASA and other regulatory requirements

METRIC(S):	GOAL(S):
1. Ensure compliance with regulatory requirements 2. Perform Monthly, Quarterly and Annual facilities safety inspections	1. Perform 100% of planned programmatic audits 2. Perform 100% of the planned facilities safety inspections (monthly, quarterly and/or annual)
TASK(S):	CUSTOMER(S):
1. Conduct facility safety inspections and programmatic audits 2. Manage Confined Space Entry and Lock out Tag Out (LOTO) Programs 3. Implement Agency Safety initiative 4. Emergency response drills (eg. Safety Training in the Execution of Emergency Procedures (STEEP) drills	1. Center Management/Staff 2. Facility Managers 3. R&D Organizations

SAFETY AND ASSURANCE DIRECTORATE
NASA GLENN RESEARCH CENTER
ENVIRONMENTAL MANAGEMENT OFFICE (8400)
FY04 FUNCTIONAL ACTIVITY SUMMARIES

ACTIVITY DESCRIPTION: ENVIRONMENTAL MANAGEMENT SYSTEM

Activities include: Environmental planning to identify environmental aspects and impacts of Center activities; determine regulatory requirements; and evaluate environmental risk. Establishment and tracking of Center-wide environmental objectives and targets. Management and implementation of operational controls to minimize environmental impacts. Auditing conformance to environmental program and tracking non-conformances to closure. Reporting on the status and viability of the EMS to the Safety, Health and Environmental Board (SHEB).

RISK OF DOING NOTHING:

Increased risk of noncompliance with EPA and OSHA standards. Lost opportunities for continual improvement of operations.

METRIC(S):	GOAL(S):
1. Time to correct non-conformances 2. Achievement of Center-wide objectives and targets	1. Non-conformances corrected within 90 days 2. Achieve all objectives and targets
TASK(S):	CUSTOMER(S):
1. Environmental planning 2. Determine regulatory requirements 3. Risk assessment 4. Tracking objectives and targets 5. Auditing conformance to EMS 6. Ensuring corrective action completed 7. Management review of EMS	1. Center Management 2. GRC Research Organizations 3. Project Management

SAFETY AND ASSURANCE DIRECTORATE
NASA GLENN RESEARCH CENTER
ENVIRONMENTAL MANAGEMENT OFFICE (8400)
FY04 FUNCTIONAL ACTIVITY SUMMARIES

ACTIVITY DESCRIPTION: PREVENTION

Activities include: Work with customers and stakeholders to identify and evaluate opportunities to reduce the use of hazardous materials and the generation of waste. Assist in the implementation of opportunities that have merit. Advocate for funding from NASA Code JE for those projects requiring seed money.

RISK OF DOING NOTHING:

Increased cost due to inflation of hazardous waste costs over time and increased future liability associated with hazardous waste disposal.

METRIC(S):	GOAL(S):
1. Percent of EMS pollution prevention objectives and targets achieved 2. Percent of GRC projects with appropriate NEPA documentation (measured semi-annually)	1. Achieve 100% of pollution prevention targets 2. 100% of projects meet NEPA requirements
TASK(S):	CUSTOMER(S):
1. Identify P2 opportunities 2. Evaluate P2 opportunities 3. Implement P2 opportunities 4. Track implementation success and cost savings 5. Publicize P2 Program	1. Center Management 2. GRC Research Organizations 3. Project Management

SAFETY AND ASSURANCE DIRECTORATE
NASA GLENN RESEARCH CENTER
ENVIRONMENTAL MANAGEMENT OFFICE (8400)
FY04 FUNCTIONAL ACTIVITY SUMMARIES

ACTIVITY DESCRIPTION: COMPLIANCE

Activities include: Maintaining a site-wide inventory of chemicals and containers, managing OSHA Hazard Communication Standard Compliance Program for GRC, and preparing reports on chemical release per EPA requirements; overseeing the use of radioactive materials at GRC so as to ensure compliance with NRC regulations; overseeing the use of lasers and other equipment that produce ionizing and non-ionizing radiation to ensure compliance with industry guidelines; conducting noise surveys within buildings to determine sound levels; responding to community noise complaints, and conducting hearing conservation training; management of asbestos, lead, cadmium, and other OSHA regulated materials programs; management of the indoor air quality program; response to emergencies; collecting and arranging off-site disposal for hazardous wastes; managing wastewater discharges; obtaining needed permits for air emissions; performing assessments of the environmental impacts of new projects; response to spills and other emergencies; management of fuel storage issues; analyzing building materials to determine whether asbestos is present and at what concentrations; analyzing paint samples to determine lead content; analyzing water samples for wastewater permit parameters; analyzing oil samples for chlorine and mercury content; and performing other analyses as needed.

RISK OF DOING NOTHING:

Noncompliance with EPA OSHA, and NRC standards; unacceptable employee exposures.

METRIC(S):

1. Noncompliance issues corrected, or corrective action plan implemented, within 90 days (measured quarterly)

GOAL(S):

1. 100%

TASK(S):

1. Site-wide chemical inventory
2. Providing labels & MSDS's
3. Chemical release reports
4. Managing NRC license compliance & radiation safety program
5. Managing laser safety program & laser safety permit process
6. Oversee cyclotron & reactor facilities
7. Hearing conservation program management
8. Community noise complaint response
9. Asbestos & lead paint survey/support
10. Indoor air quality management
11. Review safety plans and permits
12. Hazardous waste management
13. Environmental permitting and monitoring
14. Environmental impact assessment
15. Chemical analyses
16. Respiratory protection management
17. OSHA regulated chemical management
18. Ventilation surveys and management
19. Bloodborne pathogen program
20. Chemical hygiene program management

CUSTOMER(S):

1. Center Management
2. GRC Research Organizations
3. Project Management

SAFETY AND ASSURANCE DIRECTORATE
NASA GLENN RESEARCH CENTER
ENVIRONMENTAL MANAGEMENT OFFICE (8400)
FY04 FUNCTIONAL ACTIVITY SUMMARIES

ACTIVITY DESCRIPTION: RESTORATION

Surveying building materials throughout the Center to determine asbestos content, identifying the highest priority areas for removal; contracting and overseeing abatements, documenting results and interfacing with regulatory agencies; surveying painted areas for lead content, identifying the highest priority areas for removal, contracting for, and overseeing abatements, documenting results, and working with regulatory agencies. Noise monitoring is performed to identify hazardous areas and noise reduction controls are developed and implemented. Managing and prioritizing the disposal of unwanted radioactive sources and radioactive materials.

FY04 projects include remedial action at GRC, remediation of underground storage tank sites at Plum Brook, and characterization and disposal of cyclotron beam collimating tips and other miscellaneous equipment/parts activated by cyclotron operation. Funding is from the Environmental Compliance and Restoration portion of the C of F program. It must be noted that remediation schedules and budget are driven by Ohio EPA requirements and are not under the direct Center control. Costs, schedule, and report requirements may change during the remediation process.

RISK OF DOING NOTHING:
Violation of OSHA and EPA regulations. Violation of consent order with Ohio EPA and regulations on underground storage tanks. Increased future liabilities/costs associated with the disposal of radioactive sources/materials.

METRIC(S):	GOAL(S):
1. Percent of required abatements funded, completed on time and within budget 2. Dollar amount reduction in the environmental liability (measured annually) 3. Percent of unwanted sources or Radioactive Material (RAM) disposed or funded for disposal 4. Number of activated cyclotron components characterized for disposal	1. Identify, obtain funding, and complete abatement projects 2. Obligate 80% of funding within 90 days of receipt 3. Optimize Environmental Compliance and Restoration (ECR) funds earmarked for radioactive source and RAM disposal
TASK(S):	CUSTOMER(S):
1. Complete feasibility studies 2. Prepare remedial design 3. Contract for remedial action 4. Support Plum Brook Reactor decontamination and decommissioning effort 5. Asbestos abatement process 6. Noise abatement process 7. Lead paint abatement process 8. Radiological characterization of miscellaneous equipment, materials, etc, used in support of the cyclotron and beam room facilities 9. Disposal of unwanted radioactive sources and other radioactive materials	1. Headquarters/Code JE 2. Center Management/Staff 3. Ohio Environmental Protection Agency

SAFETY AND ASSURANCE DIRECTORATE
NASA GLENN RESEARCH CENTER
ENVIRONMENTAL MANAGEMENT OFFICE (8400)
FY04 FUNCTIONAL ACTIVITY SUMMARIES

ACTIVITY DESCRIPTION: CONSERVATION

Activities include: Manage programs to identify and conserve sensitive habitat, prevent adverse impacts on surrounding environs, preserve archeological value present, and preserve the historic value of GRC facilities. Complete comprehensive habitat and species surveys of Lewis Field and Plum Brook Station. Support activities to preserve the history of Plum Brook Station.

RISK OF DOING NOTHING:

Violation of federal regulations and executive orders. Adverse public perception of Center.

METRIC(S):	GOAL(S):
1. Habitat and species preservation 2. Historic preservation	1. Implement a comprehensive habitat and species survey of Lewis Field and Plum Brook Station 2. Support historic preservation efforts for the Plum Brook Reactor Facility 3. Develop and implement a historic preservation management program for Lewis Field and Plum Brook Station
TASK(S):	CUSTOMER(S):
1. Habitat and species surveys 2. Historic preservation of PBRF 3. Archeological and historical surveys	1. Center Management/Staff 2. Regulatory agencies 3. NASA HQ 4. General public

SAFETY AND ASSURANCE DIRECTORATE
NASA GLENN RESEARCH CENTER
ENVIRONMENTAL MANAGEMENT OFFICE (8400)
FY04 FUNCTIONAL ACTIVITY SUMMARIES

ACTIVITY DESCRIPTION: OUTREACH

Activities include: Earth Day and Earth week activities, aeronautics education activities, Speakers Bureau, joint programs with USEPA and other agencies, and the management and scheduling of the Aeronautics Environmental Traveling Exhibit.

RISK OF DOING NOTHING:

Public and local staff will not be as informed of the activities at Glenn Research Center. The Space Act Agreement requires informing the public of our activities at GRC.

METRIC(S):	GOAL(S):
1. Number of events 2. Estimated number of people reached	1. To inform and educate the public about Glenn Research Center's Aeronautical Propulsion Project, and the reduced environmental impacts due to the direct contributions of the men and women at GRC 2. To inform and educate Center personnel in the EMS and their role in achieving environmental objectives and targets
TASK(S):	CUSTOMER(S):
1. Earth Week 2. Earth Day 3. Aero-Environmental Traveling Exhibit 4. Speakers Bureau assignments and public requests 5. Publicize Pollution Prevention program	1. GRC Management and Staff 2. General Public

SAFETY AND ASSURANCE DIRECTORATE
NASA GLENN RESEARCH CENTER
SECURITY MANAGEMENT AND SAFE GUARDS OFFICE (8500)
FY04 FUNCTIONAL ACTIVITY SUMMARIES

ACTIVITY DESCRIPTION: PHYSICAL SECURITY

The SMSO plans, develops and manages the GRC Physical Security Program. SMSO serves as the focal point for policy, procedure, and guidance for the protection of GRC personnel, facilities, buildings, property, material, and information. SMSO implements the GRC Workplace Violence Program and conducts investigations, as appropriate, in support of GRC's policy directive dealing with serious conduct issues. SMSO is the lead for coordinating non-Government serious conduct issues. The Office ensures proper physical security practices and procedures through oversight of the security contractor force that implements the Center security program, employee badge and pass office, traffic management, patrol officer activities, first response to incidents and investigations, emergency dispatch Center operations and locksmith services. These activities are monitored by NASA security specialists to ensure compliance with Executive Orders, NASA Security Handbook, NPG 1620.1, state and local laws, and GRC directives.

RISK OF DOING NOTHING:

Failure to implement and effectively manage a Physical Security Program would result in increased vulnerability and risk of damage or loss to property and equipment, and/or injury to personnel. The risk would include exposure to terrorist attacks. Property loss or damage would adversely affect project and program management and operations costs. Heightened risk of personal injury or loss of personal property would result in eroded employee morale, thereby adversely affecting employee performance and productivity.

METRIC(S):

1. Training Plan in place and percent of individual training records document training
2. Percent of officers receive required training
3. Percent Security Services pass performance tests
4. Percent of theft and incident investigations
5. Percent of access control, intrusion detection and CCTV installations

GOAL(S):

1. 100% individual
2. 100% receive required training
3. 95%/100% on retest
4. 100% of security incidents investigated
5. 100% of facilities identified for FY04

TASK(S):

1. Comply with Security Services Training Plan and Test Plan
2. Operate and maintain ACS, IDS, and CCTVs; install new systems 20% per year over a 5-year period beginning in FY00
3. Investigate thefts
4. Conduct vehicle inspections
5. Provide education and awareness training

CUSTOMER(S):

1. All Government employees
2. All contractor employees
3. All visitors
4. Office of Security Management and Safeguards (NASA Headquarters CodeX)
5. All NASA Center Security Offices
6. Selected Government agencies

SAFETY AND ASSURANCE DIRECTORATE
NASA GLENN RESEARCH CENTER
SECURITY MANAGEMENT AND SAFEGUARDS OFFICE (8500)
FY04 FUNCTIONAL ACTIVITY SUMMARIES

ACTIVITY DESCRIPTION: EXTERNAL PHYSICAL SECURITY

Provide facility, site-specific emergency information and logistic requirements. Participate in community outreach programs and HQ Committees for Emergency Preparedness (EP) program development and review. Develop working relationships with county and state emergency preparedness organizations by participating in local boards and by serving on various related committees. Participate in NASA functions in support of Federal Emergency Management Agency (FEMA) and the FBI under the Federal Response Plan.

RISK OF DOING NOTHING:

This activity involves Government, state, and local entities that are the only source of emergency response for GRC employees, facilities, and programs. Inaction could result in the Center's inability to meet its, and NASA's, response roles and responsibilities that could ultimately result in loss of life and property or cause severe schedule delays.

METRIC(S):	GOAL(S):
1. Review 10% of community responses 2. Number of exercises conducted 3. Number of Municipal responses evaluated 4. Arrange for training at GRC site	1. Complete community response reviews with the municipalities response forces 2. Two responses per quarter evaluated and documented 3. Utilize GRC facilities for 3 training activities
TASKS:	CUSTOMER(S):
1. Maintain operational EOC for GRC 2. Community response reviews and exercises 3. Participate in the development of Agency EPP planning and exercises 4. Participate in local EP boards and committees	1. Center Management/Staff 2. Surrounding Communities 3. Headquarters Code Q

SAFETY AND ASSURANCE DIRECTORATE
NASA GLENN RESEARCH CENTER
SECURITY MANAGEMENT AND SAFE GUARDS OFFICE (8500)
FY04 FUNCTIONAL ACTIVITY SUMMARIES

ACTIVITY DESCRIPTION: PERSONNEL SECURITY

The Personnel Security Program ensures compliance with Executive Orders that require a suitability investigation for each Government employee, and a security background investigation for each employee requiring access to national security (classified) information in the performance of his duties. Office of Personnel Management (OPM) and NASA directives establish the policy, procedures, and processes for selecting and initiating the appropriate type of investigation, the adjudicating of the investigation findings and the granting of a security clearance. Suitability investigations are intended to establish an employee's eligibility for Government employment, or an assignment to a position of trust that does not require access to classified information. Positions of trust include those with significant influence in Government programs and projects, commitment of Government funds, jobs in automated information systems, financial management, and similar positions of trust in which a non-trustworthy employee's performance could adversely affect the requirements of the position. Personnel security investigations are conducted upon entry to Federal employment for sensitive and non-sensitive positions. In addition to the required investigations, other supporting inquiries are conducted, typically to support or expand existing reports of investigation. Those include immigration and naturalization checks to validate citizenship status, credit checks to clarify or expand previously conducted investigations, or criminal history checks in support of criminal allegations and investigations.

RISK OF DOING NOTHING:

Noncompliance with the personnel security requirements listed above would put GRC in direct violation of Executive Orders and other national directives. Further, not accomplishing personnel security goals determining the suitability for Government employment and eligibility for access to national security information would result in program mismanagement and/or compromise, or loss of sensitive unclassified or classified information; thereby, compromising Agency programs and national security interests.

METRIC(S):	GOAL(S):
1. Number of personnel security records reviewed 2. Percent re-certification of clearance holders 3. Number of security education and awareness items 4. Percent security checks processed	1. 50 per month including investigations and adjudications 2. 100% clearance holders 3. 15 courses, briefings, and newsletters for GRC staff and SMSO staff 4. Quantity in accordance with established timeframes
TASK(S):	CUSTOMER(S)
1. Validate all clearance requests 2. Provide security education and awareness training 3. Re-certify all clearances 4. Review personnel security records 5. Process background investigations	1. All Government employees 2. All contractor employees 3. All visitors 4. Office of Security Management and Safeguards (NASA Headquarters Code X) 5. NASA Center Security Offices 6. Selected Government agencies

SAFETY AND ASSURANCE DIRECTORATE
NASA GLENN RESEARCH CENTER
SECURITY MANAGEMENT AND SAFEGUARDS OFFICE (8500)
FY04 FUNCTIONAL ACTIVITY SUMMARIES

ACTIVITY DESCRIPTION: INFORMATION SECURITY

The GRC Information Security Program provides protection for classified and unclassified sensitive information, the disclosure of which is controlled by Executive Order 12958, "The Space Act," and other applicable statutes and directives. The primary function of the activity is to provide policy and procedure interpretation and guidance for information protection issues, and to ensure compliance with governing directives. In the absence of formal classification guidance, interim guidance is provided for the protection of the information.

Executive Order 12958, or as revised, established the Information Security Oversight Office (ISOO) chartered to implement national program guidance for information classification management regarding classified information. The ISOO Directive Number 1 established national policy for information classification, marking, distribution, transmittal, disclosure, reproduction, storage, and destruction. The information security downgrade policy is also established by the ISOO. Reports of violations or compromise of classified information are investigated and resolved at GRC, or referred to the Federal Bureau of Investigation (FBI) as appropriate. As the lead center for Intelink-S, an online intelligence retrieval system, the GRC SMSO provides assistance to NASA Centers with implementation at their location. Operational Security (OPSEC) standards are maintained to protect against inadvertent disclosure by government and contractor employees.

Information security education and awareness is managed by the SMSO with briefings provided to all employees. Briefings and training sessions include: initial orientation for new employees; training sessions for new security clearance holders; periodic refresher briefings and awareness training to inform employees of security risks; and vulnerabilities and threats against GRC information and technology. The Security Awareness Program is mandated by 1620.1, "NASA Procedures and Guidelines" and is established as a separate AOA plan.

The SMSO provides guidance for industrial security applications in accordance with the National Industrial Security Program (NISP), to ensure compliance with national policy and procedures for contractor activities. Security guidance and compliance inspections are provided to off-site industrial and Government locations, consistent with policy and procedures established within NASA and at national policy decision levels.

The GRC Industrial Security Program provides for classified programs to operate within the required security specifications of EO 12958 and the NASA NPG for facility security certifications for both special access and collateral classified programs. The Office coordinates with the Defense Security Service in obtaining CAGE numbers, facility clearance, and obtaining facility clearances for new contractors. It also coordinates approval processes for access to the Defense Technical Information Certification (DD-1540) and the Scientific Technical Information Facility (NASA 713). All DD254 contractor documents outlining Security Specifications required by EO 12958 and the NASA NPG for facility security certifications for both special and collateral classified programs are reviewed. SMSO works with the Defense Security Service to conduct periodic inspections and assessments of contractor facilities holding security clearances.

SAFETY AND ASSURANCE DIRECTORATE
NASA GLENN RESEARCH CENTER
SECURITY MANAGEMENT AND SAFEGUARDS OFFICE (8500)
FY04 FUNCTIONAL ACTIVITY SUMMARIES
INFORMATION SECURITY (Continued)

RISK OF DOING NOTHING:

Noncompliance with the Information Security requirements listed above would put GRC in direct violation of Executive Orders, Agency and national directives. Further, not protecting classified or sensitive information would result in program mismanagement, compromise of sensitive unclassified and/or classified information; thereby, compromising Agency programs and national security interests. Failure to provide industrial security in accordance with DoD and NASA policy and procedures would result in non-compliance with the National Industrial Security Program.

METRIC(S):

1. Number of information security compromises
2. Number of classified contract reviews
3. Timeframe to process incoming and outgoing classified documents
4. Number of containers reviewed
5. Identify requirements and complete design for facility to serve SCIF/ITOC and classified programs
6. Number of OPSEC briefings
7. Number of OPSEC evaluations

GOAL(S):

1. Zero tolerance
2. Six reviews per year
3. Verify within two business days
4. 100% of total number of containers
5. 100% completion of requirements and design
6. Top five priority research programs
7. One OPSEC evaluation

TASK(S):

1. Establish viable OPSEC Program
2. Review classified contracts
3. Produce awareness material and information booklets
4. Process incoming and outgoing classified material
5. Review classified material holdings and downgrade or destroy as appropriate and consolidate into fewer containers

CUSTOMER(S):

1. All Government and contractor employees
2. All GRC contractor and government employees
3. GRC government and contractor employees and all visitors
4. Office of Security Management and Safeguards (NASA Headquarters Code X) and all NASA Center Security Offices
5. Selected Government agencies

SAFETY AND ASSURANCE DIRECTORATE
NASA GLENN RESEARCH CENTER
SECURITY MANAGEMENT AND SAFEGUARDS OFFICE (8500)
FY04 FUNCTIONAL ACTIVITY SUMMARIES

ACTIVITY DESCRIPTION: CLASSIFIED INFORMATION SYSTEMS SECURITY

Information Systems Security includes the activities of: Communications Security (COMSEC); TEMPEST (The protection of electronic emanations from classified processing equipment and systems); classified computing and unclassified sensitive computing and Technical Surveillance Countermeasures (TSCM) which encompass specialized security disciplines designed to prevent the unauthorized disclosure or compromise of national security information through electronic means. This information may be classified by National Security Directives or may be unclassified sensitive information protected against unauthorized disclosure by law. National security information, classified at the Confidential, Secret, or Top Secret level must be protected during its creation, preparation, data processing, publishing, transmission, storage or safeguarding processes, and through the final destruction process.

TSCM surveys are used to detect the presence of clandestine technical surveillance devices that may utilize audio, video or other associated technical applications and to detect inadvertent compromise caused by incorrect equipment installations/modification procedures or equipment malfunctions. Other technical security applications are evaluated for security cost and human resource savings.

RISK OF DOING NOTHING:

Failure to protect classified national security information or sensitive unclassified information in accord with federal laws, executive orders, and policy directive constitutes a violation of law, national policy, and NASA policy/procedures. Information lost, compromised, or otherwise altered, could cause exceptionally grave damage to national security, the loss of critical leading technologies, the loss of programmatic funding, and the loss of GRC credibility.

METRIC(S):	GOAL(S):
1. Percent re-accreditation of classified systems 2. Timeframe to accredit new or revised classified systems 3. Number of inventories of COMSEC items	1. 100% re-accreditation of classified systems 2. 30 days from final submission of supporting documentation 3. Total number of COMSEC items held in inventory
TASK(S):	CUSTOMER(S):
1. Accredit or Reaccredit all classified computer systems 2. Combinate COMSEC safes 3. Conduct inventory of COMSEC materials	1. All Government employees 2. All contractor employees 3. All visitors 4. Office of Security Management and Safeguards (NASA Headquarters Code X) 5. All NASA Center Security Offices 6. Selected Government agencies

SAFETY AND ASSURANCE DIRECTORATE
NASA GLENN RESEARCH CENTER
SECURITY MANAGEMENT AND SAFEGUARDS OFFICE (8500)
FY04 FUNCTIONAL ACTIVITY SUMMARIES

ACTIVITY DESCRIPTION: COUNTER INTELLIGENCE PROGRAM (CIP)

The GRC CIP is to provide for a capability that will detect, deter, and neutralize espionage, other intelligence activities, or sabotage conducted for or on behalf of foreign powers, organizations or persons, and domestic, or international terrorist activities. The SMSO CIP gathers information and conducts activities to protect GRC from this type of activity. Pursuant to the National Aeronautics and Space Act of 1958, with amendments, and in conformance with other applicable laws, Executive Orders, Presidential Decision Directives, and Federal Regulations, the Safeguards Office CIP conducts CI liaison, CI investigations, CI education and awareness training, CI analysis, and counterterrorism (CT) analysis. The Safeguards Office CIP liaison activity provides GRC with intelligence, terrorism and Counterintelligence information from the U. S. intelligence community. The Safeguards Office CIP program detects, deters and neutralizes the threat posed by foreign intelligence services and domestic or international terrorism. The SMSO CIP education and awareness training develops and conducts informative briefings for selected audiences and programs concerning current threats posed by intelligence services, domestic and international terrorism and others who attempt to illegally obtain NASA sensitive, export controlled or classified information. A viable threat program is maintained through contact and coordination with local and federal law enforcement agencies and the intelligence community. The SMSO CIP analyzes threat information and provides briefings to selected GRC personnel, programs, and operations. The results of threat analysis are used to implement countermeasures designed to minimize vulnerabilities and confront threats.

RISK OF DOING NOTHING:

Noncompliance with the Counter Intelligence program requirements listed above would put GRC in direct violation of Executive Orders; Agency and national directives. Further, not providing for a CI capability protecting classified or sensitive, personnel and property would result in program mismanagement and compromise of sensitive unclassified and/or classified information and personnel safety; thereby, compromising agency programs and national security interests.

METRIC(S):	GOAL(S):
1. Number of foreign visitor escorts and sponsors briefed 2. Number of critical projects, programs or technologies reviewed for CI risks and vulnerabilities 3. Foreign travel briefings and debriefings	1. 15 per year 2. 5 per year 3. 100% of foreign travel
TASK(S):	CUSTOMER(S):
1. Conduct Investigations 2. Review programs for CI issues 3. Provide awareness and education 4. Analyze threat information 5. Liaison with local CI agencies	1. All residents and visitors 2. NASA Office of Security Management and Safeguards (NASA Headquarters Code X) 3. Selected Government agencies

GLENN RESEARCH CENTER

SAAD AOA - FY04

APPENDIX 2

FY04
RESOURCE SUMMARIES

NASA GLENN RESEARCH CENTER
SAFETY AND ASSURANCE DIRECTORATE (8000)
SAAD DIRECTORATE OFFICE (8000)
FY04 RESOURCE SUMMARY

Fig. 2-0

Priority	Activity	Work Process	Enterprise Customer	Minimum Effective CS FTE	Cum. CS FTE	Cost for CS Support ($K)	PBC Cost ($K)	Code Q and other Contract Cost ($K)	Total Contract Cost ($K) (8+9)	Total Cost ($K) (7+10)
	SAAD Management Operation									
1	COST POOL	M,A	ALL	0.8		8	470		470	478
1	CODE Q	M,A	ALL	1.1				180	180	180
1	CoF MANAGEMENT	M,A	ALL	0.2					0	0
1	METRICS	M,A	ALL	0.2					0	0
1	TRAINING	M,A	ALL	0.2					0	0
1	TRAVEL	M,A	ALL	0.2					0	0
1	PERSONNEL	M,A	ALL	1.3					0	0
	TOTALS			**4.0**	**0**	**8**	**470**	**180**	**650**	**658**

Work Process Key:
M=Management
A=Administration

Enterprise Customer Key:
R=Aerospace Technology
S=Space Science
M=Space Flight
U=Biological and Physical Research
Q=Safety and Mission Assurance
N=Education
J=Management Systems

Notes:
Refer to PB Decommissioning for additional FTE

NASA GLENN RESEARCH CENTER
SAFETY AND ASSURANCE DIRECTORATE
RISK MANAGEMENT OFFICE (8100)
FY04 RESOURCE SUMMARY

Fig. 2-1

Priority	Activity	Work Process	Enterprise Customer	Minimum Effective CS FTE	Cum CS FTE	Cost for CS Support ($K)	PBC Cost ($K)	Code Q and other Contract Cost ($K)	Total Contract Cost ($K) (8+9)	Total Cost ($K) (7+10)
1	**AEROSPACE TECHNOLOGY ENTERPRISE**									
			R							
	Aeronautics Technology									
	Aviation Safety (AvS)	P,S,F		0.10			100		100	100
	Vehicle Systems								0	0
	Low Emissions Alternative Power (LEAP)	P,RM		0.10			50		50	50
	UEET	P,F,RM		0.10			100		100	100
	QAT	P								
	Airspace Systems	P								
	Space Launch Initiative									
	Next Generation Launch Technology (NGLT)	P,RM,S,R,Q		0.50			200		200	200
	Orbital Space Plane (OSP)	P,RM,S,R,Q		0.10					0	0
	Mission and Science Measurement (MSM)								0	0
	Engineering for Complex Systems (ECS)	P,R,RM		0.10					0	0
	Computing, Information and Communications Technology (CICT)	R,RM		0.10					0	0
	Enabling Concepts and technologies (ECT)	R,RM		0.75			100		100	100
	TOTAL AEROSPACE TECHNOLOGY			**1.85**			**550**		**550**	**550**
1	**SPACE FLIGHT and BIO AND PHYSICAL RESEARCH**		M & U							
	Microgravity Science									
	MG - ISS	A	U	6.10			1,000		1,000	1,000
	MG - R&D	A	U	1.00			200		200	200
	Other Space Research - Non Code R	A	M	0.10					0	0
	International Space Station (ISS)	P,E,Q,S	M	0.50					0	0
	TOTAL SPACE FLIGHT& BPR ENTERPRISES			**7.70**			**1,200**		**1,200**	**1,200**
1	**SPACE SCIENCE ENTERPRISE**		S							
	Project Prometheus	P,RM,S,R,Q		**2.35**			**300**		**300**	**300**
1	**SAFETY AND MISSION ASSURANCE**		Q							
	Code Q - SM & QA									
	Continuous Risk Management	A		1.70			100		100	100
	Assurance Technology Center (ATC)	A		2.00				1,700	1,700	1,700
	Process Based Mission Assurance (PBMA)	A		0.90				1,750	1,750	1,750
	Center Software Initiative Proposals (CSIP)	S/W		0.50				495	495	495
	Research Technology Operating Plans (RTOPs)	A		1.00				1,000	1,000	1,000
	TOTAL SAFETY AND MISSION ASSURANCE ENTERPRISE			**6.10**			**100**	**4,945**	**5,045**	**5,045**
2	**RMO ADMINISTRATIVE**	A				**27**				**27**
	GRAND TOTAL			18.00		27	2,150	4,945	7,095	7,122

Work Process Key:

P - Product Assurance
R-Reliability & Maintainability
S - Safety
S/W - Software Product Assurance
M - Materials & Processes
Q-Quality Assurance Engineering (see QMO)
F - FAA
A-ALL
RM - Risk Management

NASA GLENN RESEARCH CENTER
SAFETY AND ASSSURANCE DIRECTORATE
QUALITY MANAGEMENT OFFICE (8200)
FY04 RESOURCE SUMMARY

Fig. 2-2

Priority	Activity	Work Process	Enterprise Customer	Minimum Effective CS FTE	Cum CS FTE	Cost for CS Support ($K)	PBC Cost ($K)	Code Q and other Contract Cost ($K)	Total Contract Cost ($K) (8+9)	Total Cost ($K) (7+10)
	QUALITY ENGINEERING		R, S,M,U							
1		MRDOC		4.0			300		300	300
1		Microgravity		2.0					0	0
		Space Power & On-Board Propulsion		0					0	0
1		Space Communications		0					0	0
1		Space Transportation		0					0	0
1		UEET		0					0	0
1		Aero		1.0					0	0
1		Materials & Processes		0.5					0	0
1		Failure Analysis		0					0	0
1		Independent SMA Assessment		0					0	0
1		Facilities Evaluation		0					0	0
		TOTAL QUALITY ENGINEERING		**7.5**	**0**	**0**	**300**	**0**	**300**	**300**
	QUALITY ASSURANCE		R, S,M,U							
1		Critical Test & Inspection Validation		0.1					0	0
1		Maintenance of Quality Management Documentation		0.1					0	0
1		SMA Audit of Suppliers		0					0	0
1		Development & Implemention of Quality Activities		0					0	0
1		Audits of GRC non-OSAT Quality Functions		0.2					0	0
1		**TOTAL QUALITY ASSURANCE**		**0.25**	**0**	**0**	**0**	**0**	**0**	**0**
1										
	QUALITY MANAGEMENT		R, S,M,U							
1		Preventive and Corrective Actions -ISO		0.05					0	0
1		QASAR Management		0.05					0	0
1		GIDEP		0.1					0	0
1		Lessons Learned Database		0.05					0	0
		TOTAL QUALITY MANAGEMENT		**0.25**	**0**	**0**	**0**	**0**	**0**	**0**
	QMO ADMINISTRATIVE			**2.0**		**14**			**0**	**14.0**
	TOTALS			**10.0**	**0**	**14**	**300**	**0**	**300**	**314.0**

Enterprise Customer Key:

R=Aerospace Technology

S=Space Science

M=Space Flight

U= Biological and Physical Research

Q=Safety and Mission Assurance

N=Education

NASA GLENN RESEARCH CENTER
SAFETY AND ASSURANCE DIRECTORATE
GLENN SAFETY OFFICE (8300)
FY04 RESOURCE SUMMARY

Fig. 2-3

Priority	Activity	Work Process	Enterprise Customer	Minimum Effective CS FTE	Cum. CS FTE	Cost for CS Support ($K)	PBC Cost ($K)	Code Q and other Contract Cost ($K)	Total Contract Cost ($K) (8+9)	Total Cost ($K) (7+10)
	SAFETY MANAGEMENT		ALL							
1		ASI Implementation		0.5			80		80	80
2		VPP Implementation		0.5			90		90	90
3		Document Management		0.5			40		40	40
5		Executive Safety Board		0.5			24		24	24
6		Mishap Investigation/Reporting		1.0			30		30	30
		TOTAL SAFETY MANAGEMENT		**3.0**			**264**		**264**	**264**
	HAZARD ANALYSIS		ALL							
1		Hazard Analysis Program		2.0			55		55	55
2		Pressure Safety		1.0			30		30	30
		TOTAL HAZARD ANALYSIS		**3.0**			**85**		**85**	**85**
	CONSTRUCTION SUPPORT		ALL							
2		Site Inspections		0.5			20		20	20
1		Project Reviews		1.0			20		20	20
3		Mishap Reduction		0.5			20		20	20
		TOTAL CONSTRUCTION SUPPORT		**2.0**			**60**		**60**	**60**
	SAFETY PERMIT		ALL							
1		Area Safety Committee Support		1.0			50		50	50
2		Safety Permit Management		1.0			20		20	20
		TOTAL SAFETY PERMIT		**2.0**			**70**		**70**	**70**
	MISHAP PREVENTION		ALL							
4		Facilities Inspections		1.0			30		30	30
1		Regulatory Compliance		1.0			30		30	30
1		Mishap Reduction		1.0			20		20	20
4		Glenn Safety Manual		0.5			10		10	10
		TOTAL MISHAP PREVENTION		**3.5**			**90**		**90**	**90**
	EMERGENCY RESPONSE		ALL							
1		Incident Response		2.0			20		20	20
2		Emergency Prepardness Plan		0.5			15		15	15
		TOTAL EMERGENCY RESPONSE		**2.5**			**35**		**35**	**35**
	SAFETY TRAINING		ALL							
1		Safety Training Coordination		1.0			20		20	20
		TOTAL SAFETY TRAINING		**1.0**			**20**		**20**	**20**
	GSO ADMINISTRATIVE COST					**255**			**0**	**255**
	TOTALS			**17.0**		**255**	**624**		**624**	**879**

Enterprise Customer Key:
R=Aero-Space Technology
S=Space Science
M=Space Flight
U= Biological and Physical Research
Q=Safety and Mission Assurance
N=Education

NASA GLENN RESEARCH CENTER
SAFETY AND ASSURANCE DIRECTORATE
ENVIRONMENTAL MANAGEMENT OFFICE (8400)

FY04 RESOURCE SUMMARY

Fig. 2-4

Activity	Work Process	Enterprise Customer	Minimum Effective CS FTE	Cum. CS FTE	Cost for CS Support ($K)	PBC Cost ($K)	Environmental CoF and other Contract Cost ($K)	Total Contract Cost ($K) (8+9)	Total Cost ($K) (7+10)
			Minimum Effective CS FTE						
ENVIRONMENTAL		ALL							
	Compliance		9		44	1,423	348	1,771	1,815
	Abatenment		0						0
	Remediation		1				2,600	2,600	2,600
	Outreach		1		4				4
	Nets						200	200	200
	Total Environmental		11		48	1,423	3,148	4,571	4,619
OCCUPATIONAL HEALTH		ALL							
	Compliance		9		40	475		475	515
	Abatenment		1		25	125		125	150
	Remediation		0						
	Outreach		1		2				2
	Total Occupational Health		11		67	600	0	600	667
EMO ADMINISTRATIVE COST		ALL			6			0	6
	TOTALS		22		121	2,023	3,148	5,171	5,292

Enterprise Customer Key:
R=Aerospace Technology
S=Space Science
M=Space Flight
U= Biological and Physical Research
Q=Safety and Mission Assurance
N=Education

NASA GLENN RESEARCH CENTER
SAFETY AND ASSURANCE DIRECTORATE
PLUMBROOK DECOMMISSIONING OFFICE (8010)
FY04 RESOURCE SUMMARY

Fig. 2-5

Priority	Activity	Work Process	Enterprise Customer	Minimum Effective CS FTE	Cum. CS FTE	Cost for CS Support ($K)	Environmental C of F, PBC Cost ($K)	Other Contract Cost ($K)	Total Contract Cost ($K) (8+9)	Total Cost ($K) (7+10)
1	**Plumbrook Reactor Decommissioning ***	M,A	J	5.0			43,700		43,700	43,700
	TOTALS			**5.0**	**0**	**0**	**43,700**	-	**43,700**	**43,700**
	Work Process Key:	**Enterprise Customer Key:**				**Notes:**				
	M=Management	J=Management Systems				* Refer to Figure 2-5 (EMO) for 1 additional FTE				
	A=Administration									

NASA GLENN RESEARCH CENTER
SAFETY AND ASSURANCE DIRECTORATE
SECURITY MANAGEMENT AND SAFEGUARDS OFFICE (8500)
FY04 RESOURCE SUMMARY

Fig. 2-6

Priority	Activity	Process	Enerprise Customer	Minimum Effective CS FTE	Cum. CS FTE	Cost for CS Support ($K)	PBC Cost ($K)	Other Contract Cost ($K)	Total Contract Cost ($K) (8+9)	Total Cost ($K) (7+10)
	PHYSICAL SECURITY		ALL							
1		Gate & Building Access Control		0.1			1,718		1,718	1,718
1		Emergency Dispatch		0.1			325		325	325
1		Security Initiatives		0.3			125		125	125
1		Patrols & Incident Response		0.5			700		700	700
1		Security Program Management		1.0			98		98	98
		TOTAL PHYSICAL SECURITY		**2.0**			**2,966**		**2,966**	**2,966**
	EXTERNAL PHYSICAL SECURITY		ALL							
1		Emergency Preparedness		0.4			0		0	0
1		Emergency Response Exercises		0.6			0		0	0
1		Community and Fed Response		0.2			0		0	0
		TOTAL EXTERNAL PHYSICAL SECURITY		**1.2**			**0**		**0**	**0**
	INFORMATION SECURITY		ALL							
1		Project Security Management		1.0			50		50	50
1		Threat Program/SCIF Ops		0.3			50		50	50
1		Foreign Visits Coordination		0.3			90		90	90
1		Industrial Security		0.2			20		20	20
1		OPSEC		0.2			20		20	20
1		Classified Information Program		1.2			90		90	90
		TOTAL INFORMATION SECURITY		**3.2**			**320**		**320**	**320**
	PERSONNEL SECURITY		ALL							
1		Security Clearances*		1.2		70	0		0	70
1		Suitability Program		1.0			0		0	0
1		Security Education & Awareness		0.5			90		90	90
		TOTAL PERSONNEL SECURITY		**2.7**		**70**	**90**		**90**	**160**
	CLASSIFIED INFORMATION SYSTEMS SECURITY		ALL							
1		Classified Computer Security		0.3			100		100	100
1		COMSEC Management		0.2			20		20	20
		TOTAL CLASSIFIED INFORMATION SYS.		**0.5**			**120**		**120**	**120**
1	**COUNTERINTELLIGENCE PROGRAM**		ALL	**1.4**					**0**	**0**
2	**SMSO ADMINISTRATIVE COST**					**42**				**42**
		TOTALS		**11.0**		**112**	**3,496**	**0**	**3,496**	**3,608**

Enterprise Customer Key:
R=Aerospace Technology
S=Space Flight
M=Space Flight
U= Biological and Physical Research
Q=Safety and Mission Assurance
N=Education

GLENN RESEARCH CENTER

SAAD AOA - FY04

APPENDIX 3

FY04
OUT YEAR RESOURCES

SAFETY AND ASSURANCE DIRECTORATE (8000)

NASA GLENN RESEARCH CENTER

SUMMARY (8000)

OUT-YEAR RESOURCE ESTIMATES

Fig. 3.0

		ACTUALS FOR FY 2003				PLAN FOR FY 2004				OUTYEAR FY 2005				OUTYEAR FY 2006				OUTYEAR FY 2007				OUTYEAR FY 2008			
		FUNDING				FUNDING				FUNDING				FUNDING				FUNDING				FUNDING			
ACTIVITY	ENTERPRISE CUSTOMER	CS		$		CS		$		CS		$		CS		$		CS		$		CS		$	
			INST	HQTS	TOTAL		INST	HQTS	TOTAL		INST	HQTS	TOTAL		INST	HQTS	TOTAL		INST	HQTS	TOTAL		INST	HQTS	TOTAL
SAAD DO	ALL	4.1	487.0	178.0	665.0	4.0	478.0	180.0	658.0	4.0	579.0	180.0	759.0	4.0	578.0	180.0	758.0	4.0	578.0	180.0	758.0	4.0	586.0	180.0	766.0
PBDO	J	2.9	-	52,000.0	52,000.0	3.0	-	43,700.0	43,700.0	3.0	-	30,500.0	30,500.0	3.0	-	9,200.0	9,200.0	3.0	-	600.0	600.0	-	-	-	0.0
RMO	R,S,M,U,Q	18.0	1,557.0	4,260.0	5,817.0	18.0	2,177.0	4,945.0	7,122.0	18.0	1,977.0	8,861.0	10,838.0	18.0	1,977.0	8,861.0	10,838.0	18.0	1,977.0	8,861.0	10,838.0	18.0	1,977.0	8,861.0	10,838.0
QMO	R,S,M,U	8.0	314.0	-	314.0	10.0	314.0	-	314.0	10.0	314.0	-	314.0	10.0	314.0	-	314.0	10.0	314.0	-	314.0	10.0	314.0	-	314.0
GSO	ALL	17.0	915.0	0.0	915.0	17.0	879.0	-	879.0	17.0	899.0	-	899.0	17.0	920.0	-	920.0	17.0	941.0	-	941.0	17.0	962.0	-	962.0
EMO	ALL	22.0	2,077.0	4,848.0	6,925.0	22.0	2,144.0	3,148.0	5,292.0	22.0	2,189.0	2,700.0	4,889.0	22.0	2,236.0	2,740.0	4,976.0	22.0	2,283.0	4,600.0	6,883.0	22.0	2,353.0	4,600.0	6,953.0
SMSO	ALL	11.0	2,570.0	70.0	2,640.0	11.0	3,538.0	70.0	3,608.0	11.0	3,596.0	70.0	3,666.0	11.0	3,761.0	70.0	3,831.0	11.0	3,936.0	70.0	4,006.0	11.0	4,089.0	70.0	4,159.0
GRAND TOTAL		83.0	7,920.0	61,356.0	69,276.0	85.0	9,530.0	52,043.0	61,573.0	85.0	9,554.0	42,311.0	51,865.0	85.0	9,786.0	21,051.0	30,837.0	85.0	10,029.0	14,311.0	24,340.0	82.0	10,281.0	13,711.0	23,992.0

Enterprise Customer Key

R=Aerospace Technology U=Biological and Physical Research J=Management Systems

S=Space Science Q=Safety and Mission Assurance

M=Space Flight N=Education

SAFETY AND ASSURANCE DIRECTORATE (8000)

NASA GLENN RESEARCH CENTER

FUND SOURCE SUMMARY (8000)

OUT-YEAR RESOURCE ESTIMATES

Fig. 3-1

			ACTUAL FOR FY 2003				PLAN FOR FY 2004				OUTYEAR FY 2005				OUTYEAR FY 2006				OUTYEAR FY 2007				OUTYEAR FY 2008			
			FUNDING ($K)				FUNDING ($K)				FUNDING ($K)				FUNDING ($K)				FUNDING ($K)				FUNDING ($K)			
ACTIVITY	WORK PROCESS	ENTERPRISE CUSTOMER	CS		$		CS		$		CS		$		CS		$		CS		$		CS		$	
				INST	HQTS	TOTAL		INST	HQTS	TOTAL		INST	HQTS	TOTAL		INST	HQTS	TOTAL		INST	HQTS	TOTAL		INST	HQTS	TOTAL
OPERATIONS																										
	CODE Q	Q	6.3		4,438.0	4,438.0	7.2		5,125.0	5,125.0	7.2		9,041.0	9,041.0	7.2		9,041.0	9,041.0	7.2		9,041.0	9,041.0	7.2		9,041.0	9,041.0
	Cost Pool	ALL	49.9	6,090.0	70.0	6,160.0	51.9	7,080.0	70.0	7,150.0	51.9	7,304.0	70.0	7,374.0	51.9	7,536.0	70.0	7,606.0	51.9	7,779.0	70.0	7,849.0	54.9	8,031.0	70.0	8,101.0
	CoF	ALL	13.9		56,648.0	56,648.0	14.0		46,648.0	46,648.0	14.0		33,000.0	33,000.0	14.0		11,740.0	11,740.0	14.0		5,000.0	5,000.0	11.0		4,400.0	4,400.0
	NETS	ALL	0.0		200.0	200.0	0.0		200.0	200.0	0.0		200.0	200.0	0.0		200.0	200.0	0.0		200.0	200.0	0.0		200.0	200.0
	PROGRAM FUNDED	R,S,M,U	12.9	1,830.0	-	1,830.0	11.9	2,450.0		2,450.0	11.9	2,250.0		2,250.0	11.9	2,250.0		2,250.0	11.9	2,250.0		2,250.0	11.9	2,250.0		2,250.0
GRAND TOTAL			83.0	7,920.0	61,356.0	69,276.0	85.0	9,530.0	52,043.0	61,573.0	85.0	9,554.0	42,311.0	51,865.0	85.0	9,786.0	21,051.0	30,837.0	85.0	10,029.0	14,311.0	24,340.0	85.0	10,281.0	13,711.0	23,992.0

Enterprise Customer Key:

R=Aerospace Technology

S=Space Science

M=Space Flight

U=Biological and Physical Research

Q=Safety and Mission Assurance

N=Education

J=Management Systems

Note:

* Includes FS41 CS Background Investigation

* Does not include $3,478K Supplemental Security funding received in FY03

* Does not include $235K CI funding received in FY03

SAFETY AND ASSURANCE DIRECTORATE (8000)

NASA GLENN RESEARCH CENTER

DIRECTORATE OFFICE (8000)

OUT-YEAR RESOURCE ESTIMATES

Fig. 3-2

				ACTUAL FOR FY 2003				PLAN FOR FY 2004				PLAN FOR FY 2005				PLAN FOR FY 2006				PLAN FOR FY 2007				PLAN FOR FY 2008			
				FUNDING				FUNDING				FUNDING				FUNDING				FUNDING				FUNDING			
Priority	ACTIVITY	WORK PROCESS	ENTERPRISE CUSTOMER	CS		$		CS		$		CS		$		CS		$		CS		$		CS		$	
					INST	HQTS	TOTAL		INST	HQTS	TOTAL		INST	HQTS	TOTAL		INST	HQTS	TOTAL		INST	HQTS	TOTAL		INST	HQTS	TOTAL
SAAD DIRECTORATE OFFICE																											
1	COST POOL	M,A	A,S,M					0.7	478		478	0.7	579		579	0.7	578		578	0.7	578		578	0.7	586		586
1	PS	M,A	A,S,M	0.3	7		7				0				0				0				0				0
1	PS (ODIN)	M,A	A,S,M	0.1	400		400				0				0				0				0				0
2	ROS	M,A	A,S,M	0.3	80		80				0				0				0				0				0
3	CODE Q -NDE	M,A	A,S,M	1.2		178	178	1.1		180	180	1.1		180	180	1.1		180	180	1.1		180	180	1.1		180	180
6	COF	M,A	A	0.1			0	0.1			0	0.1			0	0.1			0	0.1			0	0.1			0
7	METRICS	M,A	A,S,M	0.3			0	0.3			0	0.3			0	0.3			0	0.3			0	0.3			0
8	TRAINING *	M,A	A	0.1			0	0.1			0	0.1			0	0.1			0	0.1			0	0.1			0
9	TRAVEL *	M,A	A,S,M	0.3			0	0.3			0	0.3			0	0.3			0	0.3			0	0.3			0
10	PERSONNEL	M,A	A,S,M	1.4			0	1.4			0	1.4			0	1.4			0	1.4			0	1.4			0
	TOTALS			4.1	487	178	665	4.0	478	180	658	4.0	579	180	759	4.0	578	180	758	4.0	578	180	758	4.0	586	180	766

Work Process Key:

M = Management

A = Administrative

Enterprise Customer Key:

R=Aerospace Technology

S=Space Flight

M=Space Flight

U= Biological and Physical Research

Q=Safety and Mission Assurance

N=Education

Notes:

* Travel and Training costs not shown

SAFETY AND ASSURANCE DIRECTORATE (8000)

NASA GLENN RESEARCH CENTER

PLUMBROOK DECOMMISSIONING OFFICE (8010)

OUT-YEAR RESOURCE ESTIMATES

Fig. 3-3

				ACTUAL FOR FY 2003				PLAN FOR FY 2004				PLAN FOR FY 2005				PLAN FOR FY 2006				PLAN FOR FY 2007				PLAN FOR FY 2008			
				FUNDING				FUNDING				FUNDING				FUNDING				FUNDING				FUNDING			
Priority	ACTIVITY	WORK PROCESS	ENTERPRISE CUSTOMER	CS		$K		CS		$K		CS		$K		CS		$K		CS		$K		CS		$K	
					INST	HQTS	TOTAL		INST	HQTS	TOTAL		INST	HQTS	TOTAL		INST	HQTS	TOTAL		INST	HQTS	TOTAL		INST	HQTS	TOTAL
1	PLUMBROOK	M,A	J	2.9		52,000	52,000	3.0		43,700	43,700	3.0		30,500	30,500	3.0		9,200	9,200	3.0		600	600.0	0		-	0.0
	TOTALS			2.9	0.0	52,000	52,000	3.0	0.0	43,700	43,700	3.0	0.0	30,500	30,500	3.0	0.0	9,200	9,200	3.0	0.0	600.0	600.0	0.0	0.0	0.0	0.0

Work Process Key:

M = Management

A = Administrative

Enterprise Customer Key:

J=Management Systems

SAFETY AND ASSURANCE DIRECTORATE (8000)
NASA GLENN RESEARCH CENTER
RISK MANAGEMENT OFFICE (8100)
OUT-YEAR RESOURCE ESTIMATES

Fig. 3-4

			ACTUALS FOR FY 2003				PLAN FOR FY 2004				PLAN FOR FY 2005				PLAN FOR FY 2006				PLAN FOR FY 2007				PLAN FOR FY 2008			
			FUNDING				FUNDING				FUNDING				FUNDING				FUNDING				FUNDING			
ACTIVITY	WORK PROCESS	ENTERPRISE CUSTOMER	CS	($K) PROG	($K) HQTS	($K) TOTAL	CS	($) PROG	($) HQTS	($) TOTAL	CS	($) PROG	($) HQTS	($) TOTAL	CS	($) PROG	($) HQTS	($) TOTAL	CS	($) PROG	($) HQTS	($) TOTAL	CS	($) PROG	($) HQTS	($) TOTAL
AEROSPACE TECHNOLOGY ENTERPRISE																										
Aeronautics Technology		A																								
Aviation Safety (AvS)	P,S,F		0.10	100		100	0.10	100		100	0.10	100		100	0.10	100		100	0.10	100		100	0.10	100		100
Vehicle Systems																										
Low Emissions Alternative Power (LEAP)	P,RM		0.10	130		130	0.10	50		50	0.10	50		50	0.10	50		50	0.10	50		50	0.10	50		50
UEET	P,F,RM		0.10	40		40	0.10	100		100	0.10	100		100	0.10	100		100	0.10	100		100	0.10	100		100
QAT	P																									
Space Launch Initiative (SLI)																										
Next Generation Launch Technology (NGLT)	P,RM,S,R,Q		0.75	60		60	0.50	200		200	0.50	100		100	0.50	100		100	0.50	100		100	0.50	100		100
Orbital Space Plane (OSP)	P,RM,S,R,Q		0.10			0	0.10			0	0.10			0	0.10			0	0.10			0	0.10			0
Mission and Science Measurement (MSM)																										
Engineering For Complex Systems (ECS)	P,R,RM		0.50	200		200	0.10			0	0.10			0	0.10			0	0.10			0	0.10			0
Computing, Information and Communications Technology (CICT)	R,RM		0.10			0	0.10			0	0.10			0	0.10			0	0.10			0	0.10			0
Enabling Concepts and Technologies (ECT)	R,RM		0.75	60		60	0.75	100		100	0.75	100		100	0.75	100		100	0.75	100		100	0.75	100		100
TOTAL AEROSPACE TECHNOLOGY			2.50	590		590	1.85	550		550	1.85	450		450	1.85	450		450	1.85	450		450	1.85	450		450
SPACE FLIGHT and BIO. AND PHYSICAL SCIENCE		M&U																								
Microgravity Science																										
MG - ISS	A	U	7.10	550		550	6.10	1,000		1,000	6.10	1,000		1,000	6.10	1,000		1,000	6.10	1,000		1,000	6.10	1,000		1,000
MG - R&D	A	U	1.00	100		100	1.00	200		200	1.00	200		200	1.00	200		200	1.00	200		200	1.00	200		200
Other Space Research - Non Code R	A	M					0.10			0	0.10			0	0.10			0	0.10			0	0.10			0
International Space Station (ISS)	P,E,Q,S	M	0.50			-	0.50			0	0.50			0	0.50			0	0.50			0	0.50			0
TOTAL SPACE FLIGHT ENTERPRISE			8.60	650		650	7.70	1,200		1,200	7.70	1,200		1,200	7.70	1,200		1,200	7.70	1,200		1,200	7.70	1,200		1,200
SPACE SCIENCE ENTERPRISE		S																								
Project Prometheus	P,RM,S,R,Q		1.80	240		240	2.35	300		300	2.35	200		200	2.35	200		200	2.35	200		200	2.35	200		200
SAFETY AND MISSION ASSURANCE		A,S																								
Code Q - SM & QA																										
Continuous Risk Management	A		1.70	50		50	1.70	100		100	1.70	100		100	1.70	100		100	1.70	100		100	1.70	100		100
Assurance Technology Center (ATC)	A		1.00		1,200	1,200	2.00		1,700	1,700	2.00		3,595	3,595	2.00		3,595	3,595	2.00		3,595	3,595	2.00		3,595	3,595
Process Based Mission Assurance (PBMA)	A		0.90		1,400	1,400	0.90		1,750	3,771	0.90		3,771	3,771	0.90		3,771	3,771	0.90		3,771	3,771	0.90		3,771	3,771
Center Software Initiative Proposals (CSIP)	S/W		0.50		600	600	0.50		495	495	0.50		495	495	0.50		495	495	0.50		495	495	0.50		495	495
Research Technology Operating Plans (RTOPs)	A		1.00		1,060	1,060	1.00		1,000	1,000	1.00		1,000	1,000	1.00		1,000	1,000	1.00		1,000	1,000	1.00		1,000	1,000
TOTAL SAFETY AND MISSION ASSURANCE ENTERPRISE			5.10	50	4,260	4,310	6.10	100	4,945	5,045	6.10	100	8,861	8,961	6.10	100	8,861	8,961	6.10	100	8,861	8,961	6.10	100	8,861	8,961
RMO ADMINISTRATIVE COST	A	ALL		27		27		27		27		27		27		27		27		27		27		27		27
GRAND TOTAL			18.00	1,557	4,260	5,817	18.00	2,177	4,945	7,122	18.00	1,977	8,861	10,838	18.00	1,977	8,861	10,838	18.00	1,977	8,861	10,838	18.00	1,977	8,861	10,838

Work Process Key:

P - Product Assurance
S - Safety
F - FAA
RM - Risk Management
R-Reliability & Maintainability
S/W - Software Product Assurance
Q-Quality Assurance Engineering (see QMO)
A-ALL

Enterprise Customer Key:

R=Aerospace Technology
S=Space Science
M=Space Flight
U= Biological and Physical Research
Q=Safety and Mission Assurance
N=Education

SAFETY AND ASSURANCE DIRECTORATE (8000)

NASA GLENN RESEARCH CENTER

QUALITY MANAGEMENT OFFICE (8200)

OUT-YEAR RESOURCE ESTIMATES

Fig. 3-5

			ACTUALS FOR FY 2003				PLAN FOR FY 2004				PLAN FOR FY 2005				PLAN FOR FY 2006				PLAN FOR FY 2007				PLAN FOR FY 2008			
			FUNDING				FUNDING				FUNDING				FUNDING				FUNDING				FUNDING			
ACTIVITY	WORK PROCESS	ENTERPRISE CUSTOMER	CS		$		CS		$		CS		$		CS		$		CS		$		CS		$	
				INST	HQTS	TOTAL		INST	HQTS	TOTAL		INST	HQTS	TOTAL		INST	HQTS	TOTAL		INST	HQTS	TOTAL		INST	HQTS	TOTAL
QUALITY ENGINEERING		A,S,M																								
	MRDOC		1.5	300		300	4.0	300		300	4.0	300		300	4.0	300		300	4.0	300		300	4.0	300		300
	Microgravity		2.0			0	2.0			0	2.0			0	2.0			0	2.0			0	2.0			0
	Space Power & On-Board Propulsion		0			0	0			0	0			0	0			0	0			0	0			0
	Space Communications		0			0	0			0	0			0	0			0	0			0	0			0
	Space Transportation		0			0	0			0	0			0	0			0	0			0	0			0
	UEET		0.5			0	0			0	0			0	0			0	0			0	0			0
	Aero		0			0	1.0			0	1.0			0	1.0			0	1.0			0	1.0			0
	Materials and Processes		0			0	0.5			0	0.5			0	0.5			0	0.5			0	0.5			0
	Failure Analyses		0			0	0			0	0			0	0			0	0			0	0			0
	Independent SMA Assessments		0			0	0			0	0			0	0			0	0			0	0			0
	Facilities Evaluation		0			0	0			0	0			0	0			0	0			0	0			0
QUALITY ASSURANCE		A,S,M																								
	Critical Test & Inspection Validation		0.5			0	0.03			0	0.03			0	0.03			0	0.03			0	0.03			0
	Maintenance of Quality Management Documentation		0			0	0.03			0	0.03			0	0.03			0	0.03			0	0.03			0
	SMA Audit of Suppliers		0.5			0	0			0	0			0	0			0	0			0	0			0
	Development & Implementation of Quality Activities		1.0			0	0			0	0			0	0			0	0			0	0			0
	Audits of GRC Non-OSAT Quality Functions		0.5			0	0.2			0	0.2			0	0.2			0	0.2			0	0.2			0
QUALITY MANAGEMENT		A,S,M																								
	Preventive and Corrective Actions - ISO		0.5			0	0.05			0	0.05			0	0.05			0	0.05			0	0.05			0
	QASAR Management		0			0	0.05			0	0.05			0	0.05			0	0.05			0	0.05			0
	GIDEP		0.5			0	0.1			0	0.1			0	0.1			0	0.1			0	0.1			0
	Lessons Learned Database		0.5			0	0.05			0	0.05			0	0.05			0	0.05			0	0.05			0
QMO ADMINISTRATIVE COST			0	14		14	2.0	14		14	2.0	14		14	2.0	14		14	2.0	14		14	2.0	14		14
GRAND TOTAL			8.0	314.0	0	314.0	10.0	314.0	0	314.0	10.0	314.0	0	314.0	10.0	314.0	0	314.0	10.0	314.0	0	314.0	10.0	314.0	0	314.0

Enterprise Customer Key:
R=Aerospace Technology
S=Space Science
M=Space Flight
U= Biological and Physical Research
Q=Safety and Mission Assurance
N=Education

SAFETY AND ASSURANCE DIRECTORATE (8000)
NASA GLENN RESEARCH CENTER
GLENN SAFETY OFFICE (8300)
OUT-YEAR RESOURCE ESTIMATES

Fig. 3-6

			ACTUALS FOR FY 2003				PLAN FOR FY 2004				PLAN FOR FY 2005				PLAN FOR FY 2006				PLAN FOR FY 2007				PLAN FOR FY 2008			
			FUNDING				FUNDING				FUNDING				FUNDING				FUNDING				FUNDING			
ACTIVITY	WORK PROCESS	ENTERPRISE CUSTOMER	CS		($)		CS		($)		CS		($)		CS		($)		CS		($)		CS		($)	
				INST	HQTS	TOTAL		INST	HQTS	TOTAL		INST	HQTS	TOTAL		INST	HQTS	TOTAL		INST	HQTS	TOTAL		INST	HQTS	TOTAL
SAFETY MANAGEMENT		ALL																								
	ASI Implementation		1.0	90		90	1.0	80		80	1.0	70		70	1.0	70		70	1.0	70		70	1.0	70		70
	VPP Implementation		0.5	90		90	0.5	90		90	0.5	90		90	0.5	90		90	0.5	90		90	0.5	90		90
	Document Management		1.0	50		50	1.0	40		40	1.0	30		30	1.0	30		30	1.0	30		30	1.0	50		50
	Executive Safety Board		0.5	20		20	0.5	24		24	0.5	24		24	0.5	30		30	0.5	30		30	0.5	30		30
	Mishap Investigation/Reporting		0.5	20		20	0.5	30		30	0.5	25		25	0.5	30		30	0.5	38		38	0.5	30		30
HAZARD ANALYSIS		ALL																								
	Harzard Analysis Program		2.0	50		50	2.0	55		55	2.0	55		55	2.0	55		55	2.0	60		60	2.0	60		60
	Pressure Safety		0.5	30		30	0.5	30		30	0.5	30		30	0.5	33		33	0.5	40		40	0.5	40		40
CONSTRUCTION SUPPORT		ALL																								
	Project Reviews		0.5	20		20	0.5	20		20	0.5	20		20	0.5	20		20	0.5	20		20	0.5	20		20
	Site Inspections		1.0	20		20	1.0	20		20	1.0	20		20	1.0	20		20	1.0	20		20	1.0	20		20
	Mishap Reduction		0.5	20		20	0.5	20		20	0.5	20		20	0.5	20		20	0.5	20		20	0.5	20		20
SAFETY PERMIT		ALL																								
	Area Safety Committee Support		1.0	65		65	1.0	50		50	1.0	70		70	1.0	70		70	1.0	70		70	1.0	70		70
	Safety Permit Management		1.0	20		20	1.0	20		20	1.0	25		25	1.0	25		25	1.0	25		25	1.0	25		25
MISHAP PREVENTION		ALL																								
	Regulatory Compliance		1.0	30		30	1.0	30		30	1.0	30		30	1.0	30		30	1.0	30		30	1.0	30		30
	Facilities Inspections		1.0	30		30	1.0	30		30	1.0	30		30	1.0	30		30	1.0	30		30	1.0	30		30
	Mishap Reduction		1.0	20		20	1.0	20		20	1.0	20		20	1.0	20		20	1.0	20		20	1.0	20		20
	Glenn Safety Manual		0.5	20		20	0.5	15		15	0.5	20		20	0.5	20		20	0.5	20		20	0.5	20		20
EMERGENCY RESPONSE		ALL																								
	Incident Response		2.0	30		30	2.0	20		20	2.0	30		30	2.0	30		30	2.0	30		30	2.0	30		30
	Emergency Prepardness Planning		0.5	15		15	0.5	10		10	0.5	15		15	0.5	20		20	0.5	15		15	0.5	15		15
SAFETY TRAINING		ALL																								
	Safety Training Coordination		1.0	20		20	1.0	20		20	1.0	20		20	1.0	20		20	1.0	20		20	1.0	29		29
GSO ADMINISTRATIVE COST		ALL		255		255		255		255		255		255		257		257		263		263		263		263
GRAND TOTAL			17.0	915.0	0	915.0	17.0	879.0	0	879.0	17.0	899.0	0	899.0	17.0	920.0	0	920.0	17.0	941.0	0	941.0	17.0	962.0	0	962.0

Enterprise Customer Key
R=Aerospace Technology
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N=Education

SAFETY AND ASSURANCE DIRECTORATE (8000)
NASA GLENN RESEARCH CENTER
ENVIRONMENTAL MANAGEMENT OFFICE (8400)
OUT-YEAR RESOURCE ESTIMATES

Fig. 3-7

			ACTUAL FOR FY 2003				PLAN FOR FY 2004				PLAN FOR FY 2005				PLAN FOR FY 2006				PLAN FOR FY 2007				PLAN FOR FY 2008			
			FUNDING				FUNDING				FUNDING				FUNDING				FUNDING				FUNDING			
ACTIVITY	WORK PROCESS	ENTERPRISE CUSTOMERS	CS		($K)		CS		($K)		CS		($K)		CS		($K)		CS		($K)		CS		($K)	
				INST	HQTS	TOTAL		INST	HQTS	TOTAL		INST	HQTS	TOTAL		INST	HQTS	TOTAL		INST	HQTS	TOTAL		INST	HQTS	TOTAL
Occupatioanl Health		ALL																								
	Compliance		9	500		500	9	515		515	9	530		530	9	540		540	9	555		555	9	578		578
	Abatement		1	115		115	1	150		150	1	150		150	1	150		150	1	150		150	1	150		150
	Remediation		0			0	0			0	0			0	0			0	0		900	900	0		900	900
	Outreach		1	4		4	1	4		4	1	4		4	1	4		4	1	4		4	1	4		4
	Total Occupational Health		11	619		619	11	669		669	11	684		684	11	694		694	11	709	900	1,609	11	732	900	1,632
Environmental		ALL																								
	Compliance		9	1,450	548	1,998	9	1,467	348	1,815	9	1,489	500	1,989	9	1,526	540	2,066	9	1,558	500	2,058	9	1,605	500	2,105
	Abatement		0			0	0	0		0	0	0		0	0	0		0	0	0		0	0	0		0
	Remediation		1		4,100	4,100	1		2,600	2,600	1		2,000	2,000	1		2,000	2,000	1		3,000	3,000	1		3,000	3,000
	Outreach		1	2		2	1	2		2	1	2		2	1	2		2	1	2		2	1	2		2
	NETS				200	200			200	200			200	200			200	200			200	200			200	200
	Total Environmental		11	1,452	4,848	6,300	11	1,469	3,148	4,617	11	1,491	2,700	4,191	11	1,528	2,740	4,268	11	1,560	3,700	5,260	11	1,607	3,700	5,307
EMO ADMINISTRATIVE COST		ALL		6		6		6		6		14		14		14		14		14		14		14		14
GRAND TOTAL			22	2,077	4,848	6,925	22	2,144	3,148	5,292	22	2,189	2,700	4,889	22	2,236	2,740	4,976	22	2,283	4,600	6,883	22	2,353	4,600	6,953

Enterprise Customer Key
R=Aerospace Technology
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N=Education

SAFETY AND ASSURANCE DIRECTORATE (8000)
NASA GLENN RESEARCH CENTER
SECURITY MANAGEMENT AND SAFEGUARDS OFFICE (8500)
OUT-YEAR RESOURCE ESTIMATES

Fig. 3-8

			ACTUALS FOR FY 2003				PLAN FOR FY 2004				PLAN FOR FY 2005				PLAN FOR FY 2006				PLAN FOR FY 2007				PLAN FOR FY 2008			
			FUNDING				FUNDING				FUNDING				FUNDING				FUNDING				FUNDING			
ACTIVITY	WORK PROCESS	ENTERPRISE CUSTOMERS	CS		($K)		CS		($K)		CS		($K)		CS		($K)		CS		($K)		CS		($K)	
				INST	FS 41	TOTAL		INST	FS 41	TOTAL		INST	FS 41	TOTAL		INST	FS 41	TOTAL		INST	FS 41	TOTAL		INST	FS 41	TOTAL
PHYSICAL SECURITY		ALL																								
	Gate & Building Access Control		0.1	807.0		807.0	0.1	1,718.0		1,718.0	0.1	1,718.0		1,718.0	0.1	1,828.0		1,828.0	0.1	1,947.0		1,947.0	0.1	2,100.0		2,100.0
	Emergency Dispatch		0.1	325		325.0	0.1	325		325.0	0.1	325		325.0	0.1	330		330.0	0.1	340		340.0	0.1	340		340.0
	Security Initiatives		0.3	100		100.0	0.3	125		125.0	0.3	125		125.0	0.3	130		130.0	0.3	150		150.0	0.3	150		150.0
	Patrols & Incident Response		0.5	675		675.0	0.5	700		700.0	0.5	700		700.0	0.5	725		725.0	0.5	730		730.0	0.5	730		730.0
	Security Program Mgmt		1.0	91		91.0	1.0	98		98.0	1.0	100		100.0	1.0	110		110.0	1.0	110		110.0	1.0	110		110.0
EXTERNAL PHYSICAL SECURITY		ALL																								
	Emergency Preparedness		0.4			0.0	0.4			0.0	0.4			0.0	0.4			0.0	0.4			0.0	0.4			0.0
	Emergency Response Exercise		0.6			0.0	0.6			0.0	0.6			0.0	0.6			0.0	0.6			0.0	0.6			0.0
	Community and Fed Response		0.2			0.0	0.2			0.0	0.2			0.0	0.2			0.0	0.2			0.0	0.2			0.0
INFORMATION SECURITY		ALL																								
	Project Security Mgmt^		1.0	50		50.0	1.0	50		50.0	1.0	55		55.0	1.0	60		60.0	1.0	65		65.0	1.0	65		65.0
	Threat Program/SCIF Ops		0.3	50		50.0	0.3	50		50.0	0.3	55		55.0	0.3	60		60.0	0.3	65		65.0	0.3	65		65.0
	Foreign Visits Coordination		0.3	90		90.0	0.3	90		90.0	0.3	100		100.0	0.3	100		100.0	0.3	100		100.0	0.3	100		100.0
	Industrial Security		0.2	20		20.0	0.2	20		20.0	0.2	25		25.0	0.2	25		25.0	0.2	30		30.0	0.2	30		30.0
	OPSEC		0.2	20		20.0	0.2	20		20.0	0.2	25		25.0	0.2	25		25.0	0.2	25		25.0	0.2	25		25.0
	Classified Information Program		1.2	90		90.0	1.2	90		90.0	1.2	100		100.0	1.2	100		100.0	1.2	100		100.0	1.2	100		100.0
PERSONNEL SECURITY		ALL																								
	Security Clearances•		1.2		70.0	70.0	1.2		70.0	70.0	1.2		70.0	70.0	1.2		70.0	70.0	1.2		70.0	70.0	1.2		70.0	70.0
	Suitability Program		1.0			0.0	1.0			0.0	1.0			0.0	1.0			0.0	1.0			0.0	1.0			0.0
	Security Education & Awareness		0.5	90		90.0	0.5	90		90.0	0.5	100		100.0	0.5	100		100.0	0.5	100		100.0	0.5	100		100.0
CLASSIFIED INFORMATION SYSTEMS SEC.		ALL																								
	Classified Computer Security		0.3	100		100.0	0.3	100		100.0	0.3	100		100.0	0.3	100		100.0	0.3	100		100.0	0.3	100		100.0
	COMSEC Mgmt		0.2	20		20.0	0.2	20		20.0	0.2	25		25.0	0.2	25		25.0	0.2	25		25.0	0.2	25		25.0
COUNTER INTELLIGENCE PROGRAM - HQ		ALL	1.4			0.0	1.4			0.0	1.4			0.0	1.4			0.0	1.4			0.0	1.4			0.0
SMO ADMINISTRATIVE COST		ALL		42.0		42.0		42.0		42.0		43.0		43.0		43.0		43.0		49.0		49.0		49.0		49.0
GRAND TOTAL			11.0	2,570.0	70.0	2,640.0	11.0	3,538.0	70.0	3,608.0	11.0	3,596.0	70.0	3,666.0	11.0	3,761.0	70.0	3,831.0	11.0	3,936.0	70.0	4,006.0	11.0	4,089.0	70.0	4,159.0

Enterprise Customer Key
R=Aerospace Technology
S=Space Science
M=Space Flight
U= Biological and Physical Research
Q=Safety and Mission Assurance
N=Education

SUPPLEMENTAL SECURITY FUNDING	$3,478.2
CI FUNDING	$235.0

Project Security Support Not Shown Above: FY03 ($K)

Aeronautics	$31
Aeronautics Propulsion	$31
SCIF	$86
Total	$148