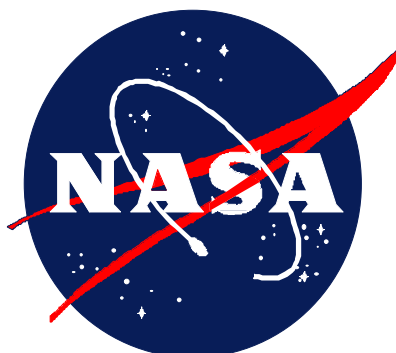**Office Work Instruction**

HQOWI 1230-Y004B

Effective Date: November 12, 1999

Responsible Office: YF/Program Planning and Development Division and
YO/Applications, Commercialization, and Education Division

Subject: Oversee and Evaluate Enterprise Program

OFFICE WORK INSTRUCTION

OVERSEE AND EVALUATE ENTERPRISE PROGRAM

(Conforming to ISO 9001 Quality System Requirements)

Original Signed By:

Ghassem R. Asrar

Associate Administrator

Office of Earth Science

DOCUMENT HISTORY LOG

Status (Baseline/ Revision/ Canceled)	Document Revision	Effective Date	Description
Baseline		1/19/99	
Revision	A	4/28/99	Section 2.0 and 6.0: Changed to lower case for division director, except where referring to a specific division director per NHB 1450.1B, *NASA Correspondence Standards*. Section 4.0: Deleted references not called out in the procedure. Section 5.0: Change title of activity # 5. Shaded PMC owned activities and products. Added a loop for updating the PCA if necessary. Section 6.0: Changed to lower case for program coordinator. Added HQOWI 7120-Y011 as a trigger process. Specified minimum content requirements for the quarterly status reports. Changed title of activity # 5. Added a loop for updating the PCA if necessary. Section 7.0: Added NPG 1441.1 reference. Added *Updated and Signed PCA* and *Updated Level I Requirements Document* as quality records.
Revision	B	11/12/99	1.0 Purpose: deleted "applications" from first sentence, added "covered by the Provide Aerospace Products and Capabilities (PAPAC) management process. 6.1Procedure: added "Level I PCA Requirements to first and second paragraph. 6.7: added "Some cost constraints may require formal budget adjustments and are beyond the responsibility of the HQPMC. 7.0: In the first two Record Identification rows, changed "Hardcopy" for "Electronic".

PREFACE

The NASA Office Work Instruction (OWI) for Oversee and Evaluate Enterprise Program documents the tasks and activities in conformance with the International Organization for Standardization's (ISO) 9001 requirements for quality systems. The OWI supplements the *NASA Strategic Plan*, the *NASA Strategic Management Handbook*, and other higher level NASA directives, which form the basis for how NASA conducts business.

This OWI is not intended to duplicate or contradict any other NASA policy, procedures or guidelines, which currently exist. As such, the OWI will reference prevailing documents where a topic is addressed and existing coverage is deemed adequate. Additional information provided within is intended to supplement existing documentation regarding Headquarters (HQ) implementation of strategic and program/project management, as well as HQ conformance with the ISO 9001 Quality Management System (QMS) requirements.

TABLE OF CONTENTS

1.0 PURPOSE

This OWI provides instructions on what must be done by the Program Planning and Development and the Applications, Commercialization, and Education Divisions to oversee and evaluate NASA Earth science flight, technology, and commercial programs. It describes the activities that are performed for a typical program oversight and evaluation effort covered by the Provide Aerospace Products and Capabilities (PAPAC) management process. The OWI describes what is to be accomplished by the process, not how the work is to be performed. Program coordinators are expected to apply their experience, expertise, professional contacts, and knowledge in order to successfully oversee and evaluate flight programs.

2.0 SCOPE AND APPLICABILITY

2.1 Scope. This work instruction describes activities typically performed by the Program Planning and Development Division and the Applications, Commercialization, and Education Division of the NASA Earth Science Enterprise (ESE) (Codes YF and YO) when overseeing and evaluating science and applications-driven flight programs, as well as technology and commercialization programs. The process described includes four (4) main groupings of activities. First, the program coordinator and the relevant division director perform and report results of ESE program evaluations, identifying areas where program and projects are violating Level I requirements. Second, the AA Control Board reviews Level I breaches and recovery options and resolves program level issues. On occasion, the AA control board may request independent assessments of programs. Third, the Headquarters Program Management Council (HQ PMC) reviews and assesses data provided by ESE and the Langley Independent Assessment Program Office (IAPO) to determine program progress and viability. Lastly, the ESE AA, the relevant division director, and the program coordinator provide their own assessment feedback that ultimately provides guidance to the Center program manager.

This work instruction represents a tailoring of NPG 7120.5, *NASA Program and Project Management Processes and Requirements*. It is designed to support a headquarters oversight and evaluation process rather than a Program Manager's management and evaluation process.

2.2 Applicability. This work instruction for Oversee and Evaluate Enterprise Program applies to the NASA Office of Earth Science (OES, Code Y) offices and divisions. The Associate Administrator for Earth Science is responsible for maintaining this document. The controlled version of this OWI is available on the World Wide Web (WWW) via the HQ ISO 9000 Document Library at http://hqiso9000.hq.nasa.gov. Any printed version of this OWI is uncontrolled (reference: HCP 1400.1, *Document and Data Control*). Proposed revisions will be accomplished by following HQOWI 1410-Y015, *Approve Quality Documents*.

3.0 DEFINITIONS

Appendix B of the Earth Science Enterprise Management Handbook provides ESE-specific terms and definitions.

4.0 REFERENCES

The following documents contain provisions that, through reference in this OWI or in policy or procedure documents, constitute the basis for the documented procedure:

NPD 1000.1   NASA Strategic Plan

NPG 1000.2   NASA Strategic Management Handbook

NPD 7120.4   Program/Project Management

NPG 7120.5   NASA Program and Project Management Processes and Requirements

5.0 FLOWCHART

The following flowchart depicts the procedure described in Section 6. Outputs in boldface type represent the quality records listed in Section 7. Shaded objects belong to organizations other than ESE.

Conduct & Report on ESE Program Evaluation

Start

Administrator Signed PCA

Finalized Level 1 Program Requirements

Program Manager's Program Plan

Program Manager's Monthly Program Progress Report

1
Evaluate & Report Program Progress vs. Baseline PCA Requirements

Program Coordinator's Informal Program Assessment Feedback

Program Coordinator's Monthly & Quarterly Program Status Briefings

2
Evaluate & Report Status of Enterprise Programs vs. PCAs to AA

Division Director's Status Briefings of Enterprise Programs

Conduct AA Control Board Review & Evaluation

Level I Technical, Cost, or Schedule Threshold Violations?   No

Yes

3
Review Program Violations by AA Control Board

AA Control Board Assessment (meeting minutes)

Independent Assessment Required?   No

Yes

4
Perform Independent Assessment

Independent Assessment Report/Briefing

1

5.0 FLOWCHART (CONTINUED)

Conduct HQ PMC Review & Assessment

```
                                    1

                              5
                   Prepare AA's Quarterly Status Briefing  ──►  AA's Status Briefings of
                                                                 Enterprise Programs

   Independent Annual                 6
   Assessment              ──►  Conduct HQ PMC Evaluation
   (by IAPO)                     of Enterprise Program Status

                              Violation of PMC        No
                              Thresholds?  ──────────────────►
                                   │
                                  Yes
                                   ▼
                              7
                   Determine Course of Action (COA)

           8                       Selected COA?              9
   Monitor Program Performance  ◄── Monitor   Modify ──►  Modify Technical, Cost, &/
   for a Defined Period of Time     Program   Constraints   or Schedule Constraints
           │
           │              Cancellation Review
           │                   ▼
           │              10
           │          Conduct Cancellation Review
           │
           │              Continue Program?    No      11
           │                                ──────►  Terminate  ──►  End
           │                   │                      Program
           │                  Yes
           └──────────────────►│◄──────────────────────────────────┘
                                   ▼
                              12
                          Prepare HQ PMC       ──►  PMC's Quarterly Assessment
                          Assessment Feedback        Feedback
                                                      (meeting minutes or report)

                                    2
```

5.0 FLOWCHART (CONTINUED)

Provide Assessment Feedback

```
                    ┌─────┐
                    │  2  │
                    └──┬──┘
                       ▼
        ┌──────────────────────┐      ┌──────────────────┐
        │ 13                   │      │ AA's Assessment  │
        │ Evaluate PMC's       │─────▶│ Feedback         │
        │ Assessment Feedback  │      └──────────────────┘
        │ from Quarterly       │
        │ Program Status Rev.  │
        └──────────┬───────────┘
                   ▼
        ┌──────────────────────┐      ┌──────────────────┐
        │ 14                   │      │ Division Dir.'s  │
        │ Evaluate AA's        │─────▶│ Assessment Fbk   │
        │ Assessment Feedback  │      └──────────────────┘
        └──────────┬───────────┘
                   ▼
        ┌──────────────────────┐      ┌──────────────────┐
        │ 15                   │      │ Program Coord.'s │
        │ Evaluate AA's &      │─────▶│ Assessment Fbk   │
        │ Division Director's  │      └──────────────────┘
        │ Assessment Feedback  │
        └──────────┬───────────┘
                   ▼
            ◇ PCA & Level I ◇    Yes
            ◇ Rqmts Doc     ◇──────┐
            ◇ Updates Needed?◇     ▼
                │ No        ┌──────────────┐    ┌─────────────────┐
                │           │ 16           │───▶│ Updated & Signed│
                │           │ Update PCA & │    │ PCA             │
                │           │ Level I Rqmts│    └─────────────────┘
                │           │ Document     │───▶┌─────────────────┐
                │           └──────┬───────┘    │ Updated Level I │
                │                  │            │ Rqmts Document  │
                ▼◀─────────────────┘            └─────────────────┘
             ( End )
```

6.0 PROCEDURE

The following table describes the flowchart of Section 5.

Actionee		**Action**
Program Coordinator	1	<u>Evaluate and Report Program Progress vs. Baseline and Level I PCA Requirements</u>. Once the assigned program coordinator receives finalized program requirements and an Administrator signed Program Commitment Agreement (PCA) from either the Formulate and Approve Flight Mission process or the Formulate the ESE Technology Development Program process (HQOWI 7120-Y003 or HQOWI 7120-Y011 respectively), the Oversee and Evaluate Enterprise Program process within ESE begins. The program coordinator interacts with the designated Center program manager on a regular formal and informal basis to obtain information on the plans for the program and its progress. Specifically, the Center program manager submits a *Program Plan* that describes how the program is to be implemented and *Monthly Program Progress Reports* that describe the program's progress and technical, cost, and schedule performance.

Responsibility for evaluating and reporting on the program's progress relative to the baseline and Level I PCA requirements rests with the program coordinator. The program coordinator typically performs the following tasks:

- Tracks technical, cost, and schedule progress;

- Identifies Level I threshold violations;

- Identifies problems, issues, or concerns;

- Compares the progress to the previous reporting period, the current plan, and the original plan;

- Evaluates proposed plans and problem resolutions; and

- Reports on the progress to the Program Planning and Development Division Director or the Applications, Commercialization, and Education Division Director, as appropriate, on a monthly and quarterly basis.

The program coordinator's monthly and quarterly reports typically take the form of briefings. The minimum required content of these briefings includes the following:

- A single page summary,

- A fever chart,

- A cost chart,

- A schedule chart sHQOWIng Level I milestones, and

- A discussion of significant accomplishments, significant issues, and delays in meeting PCA milestones.

The program coordinator also provides informal program assessment feedback to the program manager. This feedback can be via any

		mechanism to include the telephone and email. The program coordinator and program manager use the informal feedback to surface and resolve issues quickly and efficiently. The program coordinator also communicates results, successes, and opportunities to the education and outreach personnel who perform the Communicate Knowledge process and the individuals responsible for the Manage Earth Science and Applications process.
PPDD or ACED	2	Evaluate and Report Status of Enterprise Programs vs. PCAs to AA. The Program Planning and Development Division Director (PPDD) or the Applications, Commercialization, and Education Division Director (ACED) receives the monthly and quarterly progress status briefings for each enterprise program and formulates his/her own assessment of the progress of the ESE programs. The results of this assessment are documented in regular status briefings presented to the ESE AA. These briefings cover all of the ESE enterprise programs and are given by the appropriate division director.
		If any program violates Level I technical, cost, or schedule requirements, the division director identifies them in status briefings as proposed agenda items for the AA Control Board. These program issues are presented to the AA Control Board for resolution, as requested. Programs with unresolved issues at the time of a PMC's Quarterly Status Review (QSR) will include in their presentation clearly defined resolution options and cost impacts.
AA Control Board ESE AA	3	Review Program Violations by AA Control Board. In the event program/project activities violate or threaten Level I technical, cost, or schedule constraints, the ESE AA convenes the AA Control Board to review and assess the issues, and options, and determine a course of action. A determination is made if more data is required, if modification to the Level I requirement is needed, if no action is required or if an independent assessment is required. The AA Control Board's assessment and recommendations are documented in meeting minutes.
Independent Assessor	4	Perform Independent Assessment. Should the ESE AA decide that an independent assessment is required, an independent assessor will be identified and tasked to evaluate the identified technical, cost, and schedule issues. The independent assessor prepares an assessment briefing. The independent assessment is placed on the AA Control Board agenda and the process flows back to Activity 3.
Program Planning and Development Division Director ESE AA	5	Prepare AA's Quarterly Status Briefing. The appropriate division director updates his or her status briefings to reflect recommendations from the AA. This becomes the basis for the AA's quarterly status briefing to the Headquarters PMC.
HQ PMC	6	Conduct HQ PMC Evaluation of Enterprise Program Status. The HQ PMC conducts quarterly reviews of ESE programs. Additionally, the HQ PMC receives an independent annual review from the Langley Independent Assessment Program Office (IAPO) that is factored into the HQ PMC's review of ESE programs. The HQ PMC, like the ESE AA, looks for violations of HQ PMC specified technical, cost, and schedule thresholds. If no thresholds are violated, the process proceeds to Activity 12, Prepare

		HQ PMC Assessment Feedback. In the event thresholds are violated the process proceeds to Activity 7, Determine Course of Action (COA).
HQ PMC	7	Determine Course of Action (COA). When technical, cost, or schedule thresholds are violated, the PMC typically has three basic courses of action that can be followed. It can monitor the program for some specified period of time (see Activity 8) to see if the program manager can resolve the issues in a satisfactory manner. If appropriate, the PMC can modify the program's technical, cost, and schedule constraints (Activity 9), so that there is no longer an issue. Alternatively, if the issues are serious enough, the PMC can choose to initiate a Cancellation Review (Activity 10). Some cost constraints may require formal budget adjustments and are beyond the responsibility of the HQPMC.
HQ PMC	8	Monitor Program Performance for a Defined Period of Time. In this activity, the PMC monitors the program's performance more closely and frequently for a specified period of time. This is to see if the program manager can resolve the identified technical, cost, or schedule issues. The program's progress is reviewed at a subsequent quarterly or annual PMC review.
HQ PMC	9	Modify Technical, Cost, &/or Schedule Constraints. In some cases, it is appropriate to change the program's technical, cost, or schedule constraints. Making these changes often requires analysis and review to determine what changes must be made. This also frequently requires preparation, submission, evaluation, and acceptance of engineering or requirements change proposals.
Cancellation Review Team HQ PMC	10	Conduct Cancellation Review. If the PMC determines that technical, cost, or schedule issues are sufficiently severe, it may order a Cancellation Review. The PMC forms a Cancellation Review Team. This team investigates the program and prepares a recommendation to continue or cancel the program. The PMC reviews the recommendation and makes its decision.
ESE AA	11	Terminate Program. If the PMC decides the program should be cancelled, the ESE AA terminates the program.
HQ PMC	12	Prepare HQ PMC Assessment Feedback. Based on its review of the AA's quarterly status briefings and results from the selected course of action, the PMC prepares its assessment feedback. This is documented via meeting minutes that are sent to the ESE AA.
ESE AA	13	Evaluate PMC's Assessment Feedback from Quarterly Program Status Reviews. Once the HQ PMC submits its feedback from the quarterly and annual assessment of ESE programs (in the form of meeting minutes), the ESE AA evaluates the HQ PMC's assessment feedback and prepares his or her own assessment. The ESE AA's assessment feedback includes the assignment of actions and is then forwarded to the appropriate division director.
PPDD or ACED	14	Evaluate AA's Assessment Feedback. The relevant division director receives the ESE AA's assessment feedback and assigned actions, and then prepares his or her own assessment feedback that elaborates on the AA's assessment and action assignments. The division director's

assessment feedback is distributed to the program coordinator, the program manager, and the individuals responsible for the Communicate Knowledge and Manage Earth Science Applications Research processes.

Program Coordinator	15	Evaluate AA's and Division Director's Assessment Feedback. The program coordinator receives and evaluates the assessment feedback and actions provided by the ESE AA and the relevant division director. The program coordinator in turn develops a plan, in coordination with the program manager, to respond to assigned actions. This concludes the Oversee and Evaluate Enterprise Program process until it starts anew with the next *Monthly Program Progress Report* from the program manager.
Program Coordinator	16	Update PCA and Level I Requirements Document. If any of the PMC or ESE assessments determines that the PCA or Level I Requirements Document needs to be updated, the program coordinator will prepare updates. The program coordinator will ensure that the changes are coordinated and concurrence obtained. Additionally, the program coordinator will review the changes with the AA and once the PCA and Level I Requirements Document are satisfactory, obtain the AA's signature on the updated PCA.

7.0 QUALITY RECORDS

RECORD IDENTIFICATION	OWNER	LOCATION	MEDIA Electronic or Hardcopy	SCHEDULE AND ITEM NUMBERS*	RETENTION / DISPOSITION
Program Coordinator's Monthly and Quarterly Program Status Briefings	Program Coordinator	PPDD or ACED as appropriate	Electronic	Schedule 7, Item 6, "R&D Program Manager Control Files."	Permanent. Retire to Federal Records Center (FRC) 2 years after completion, cancellation, termination, or suspension of the program. Transfer to National Archives and Records Administration (NARA) 10 years after subject event or when 25 years old whichever is sooner.
Division Director's Status Briefings of Enterprise Programs	PPDD or ACED	PPDD or ACED as appropriate	Electronic	Schedule 7, Item 21, "Budget and Programming Resources / Apportionment Files," paragraph B.1.	Retire 1 copy of each report to FRC when 2 years old. Destroy when 8 years old.
AA Control Board Assessment (meeting minutes)	AA Control Board	PPDD or ACED as appropriate	Hardcopy	Schedule 7, Item 21, paragraph B.1.	Retire 1 copy of each report to FRC when 2 years old. Destroy when 8 years old.

RECORD IDENTIFICATION	OWNER	LOCATION	MEDIA Electronic or Hardcopy	SCHEDULE AND ITEM NUMBERS*	RETENTION / DISPOSITION
Independent Assessment Report/Briefing	Independent Assessor	PPDD or ACED as appropriate	Hardcopy	Schedule 7, Item 6.	Permanent. Retire to FRC 2 years after completion, cancellation, termination, or suspension of the program. Transfer to NARA 10 years after subject event or when 25 years old whichever is sooner.
AA's Status Briefings of Enterprise Programs	PPDD	PPDD or ACED as appropriate	Hardcopy	Schedule 7, Item 21, paragraph B.1.	Retire 1 copy of each report to FRC when 2 years old. Destroy when 8 years old.
Updated and Signed PCA	Program Coordinator	Program Planning and Development Division (YF)	Hardcopy	Schedule 7, Item 6.	Permanent. Retire to FRC 2 years after completion, cancellation, termination, or suspension of the program. Transfer to NARA 10 years after subject event or when 25 years old whichever is sooner.
Updated Level I Requirements Document	Development Team	Program Planning and Development Division (YF)	Hardcopy	Schedule 7, Item 6.	Permanent. Retire to FRC 2 years after completion, cancellation, termination, or suspension of the program. Transfer to NARA 10 years after subject event or when 25 years old whichever is sooner.

* Quality Records are retained in accordance with the referenced schedule and item numbers from NPG 1441.1, *NASA Records Retention Schedules.*