



Goddard Procedures and Guidelines

DIRECTIVE NO. GPG 8072.1C
EFFECTIVE DATE: August 9, 1999
EXPIRATION DATE: December 31, 2004

APPROVED BY Signature: Original Signed by
NAME: A. V. Diaz
TITLE: Director

Responsible Office: 500/Applied Engineering and Technology Directorate

Title: PROCESS CONTROL

PREFACE

P1. PURPOSE

The purpose of this procedure is to establish a consistent method for the control of production, installation, and servicing processes that directly affect the quality of products.

P2. APPLICABILITY

This procedure applies to the development of all Goddard Space Flight Center (GSFC) products and processes covered by the GSFC Quality Management System.

P3. AUTHORITY

NPD 8730.3, NASA Quality Management System Policy (ISO 9000)

P4. REFERENCES

- a. GPG 1310.1, Customer Commitments and Review
- b. GPG 1710.1, Corrective and Preventive Action
- c. GPG 3410.2, Employee Training and Qualification
- d. GPG 5330.1, Product Processing, Inspection, and Test
- e. GPG 5340.2, Control of Nonconforming Product
- f. GPG 8070.2, Identification and Application of Statistical Techniques
- g. GPG 8700.1 Design Planning and Interface Management

P5. CANCELLATION

GPG 8072.1B, Process Control

CHECK THE GSFC DIRECTIVES MANAGEMENT SYSTEM AT

<http://gdms.gsfc.nasa.gov/gdms> TO VERIFY THAT THIS IS THE CORRECT VERSION PRIOR TO USE.

P6. RECORDS

Quality Record Title	Record Custodian	Retention
Process parameter evaluation records	Process Owner	NRRS 8/5A1 Permanent. Records may be retired to an FRC when 2 years old. Transfer to NARA 15 years after completion of the project or when 25 years old, whichever is sooner.

PROCEDURE

1. DEFINITIONS

- a. Product Design Lead (PDL) - The manager or leader with overall responsibility for managing the design activity, managing the technical and organizational interfaces identified during design planning, and where required, forming and leading the Product Design Team (PDT). The term refers to flight project managers, mission managers, instrument managers, subsystem technical managers, integrated product development team leaders, lead engineers, etc.
- b. Process - Set of Government in-house interrelated production, installation, or servicing activities which transforms inputs into outputs.
- c. Special process - A process where the results cannot be fully verified by subsequent inspection and testing of the product and where processing deficiencies may become apparent only after the product is in use. Such processes may require pre-qualification of operations prior to production, as determined by the process owner and/or process user.
- d. Process owner - The single, lowest level organization with institutional responsibility for overseeing a process to ensure it is implemented effectively. The process owner is responsible for:
 - (1) Ensuring that processes related to the control of product quality are carried out under controlled conditions and in accordance with the GSFC Quality Management System,
 - (2) Developing and managing new processes to meet customer needs in accordance with the GSFC Quality Management System,
 - (3) Periodically reviewing the effectiveness of processes through analysis of process metrics.

2. IMPLEMENTATION

Refer to the flow diagram. Subparagraph numbers match flow diagram blocks.

2.1 The PDL is responsible for identifying required processes during the design activities necessary to meet the customer requirements (see GPG 1310.1) and project design plan (see GPG 8700.1). This includes the definition of overall quality management plans to be met through the implementation of processes.

2.2 Process owners assess existing process capabilities in terms of specific process requirements.

2.3 Process owners develop Process Management Plans within the QMS directives management system for each production, installation, and servicing process under their cognizance. Process Management Plans shall address the following:

- a. Documented procedures defining the manner of production, installation, and servicing, where the absence of such procedures could adversely affect quality;
- b. Use of suitable equipment, and a suitable working environment;
- c. Compliance with reference standards/codes, quality plans, and/or documented procedures;
- d. Identification, monitoring and control of suitable process parameters and product characteristics;
- e. The approval of processes and equipment, as appropriate;
- f. Criteria for workmanship, stipulated in the clearest practical manner;
- g. Suitable maintenance of equipment to ensure continuing process capability.

2.3.1 In addition to the above, Process Management Plans for Special Processes shall also address pre-qualification (pre-production) of the process operations, including associated equipment, and:

- a. Process operator training/qualification and/or;
- b. Continuous monitoring and control of identified process parameters.

The need for Special Process pre-qualification (including those established Special Processes which are modified) shall be determined by the Special Process owner, taking into account the specified needs of the users of the Special Process. Special Process operator training/qualification determination and documentation shall be accomplished in accordance with GPG 3410.2.

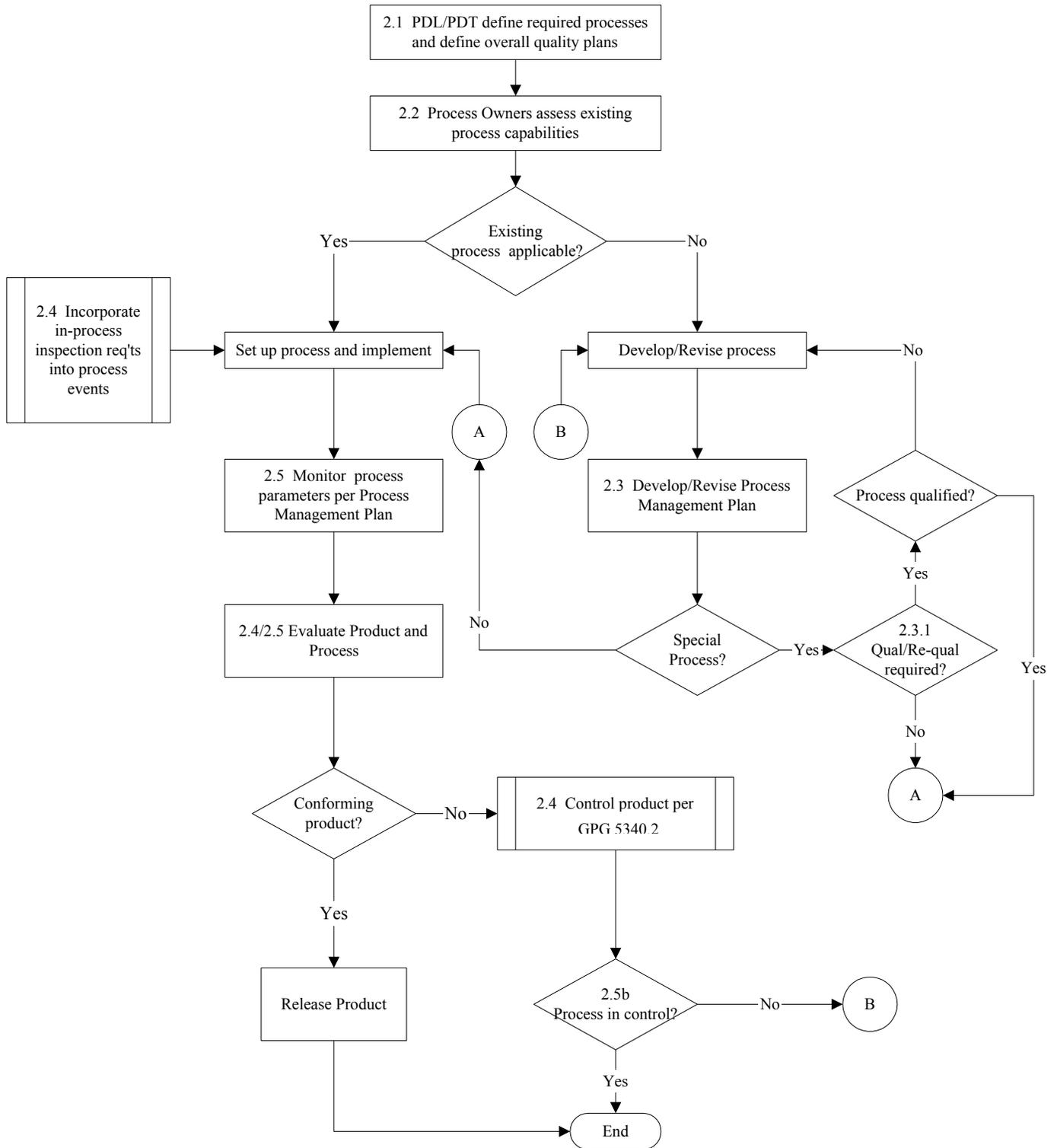
2.4 The PDL shall identify those product characteristics which are to be inspected/tested to verify the results of the process applied. Such inspection/test events, related criteria for workmanship and acceptance (this may include written standards, representative samples, or illustrations), and process events, as applied to GSFC product, shall be documented in accordance with GPG 5330.1.

2.5 Process Capability Evaluation

Continuing process capability shall be evaluated by the results of both product evaluation and the monitoring of process parameters identified in the Process Management Plan.

- a. Product evaluation - Processes which yield unacceptable products may be subject to corrective action root cause analysis and investigation in accordance with GPG 1710.1.
- b. Process evaluation - In accordance with the Process Management Plan, process parameters shall be monitored and evaluated over time for evidence of negative trends or out of control situations. Specific statistical techniques to be employed will be defined and documented in accordance with GPG 8070.2. Records of process evaluation and process correction shall be maintained by the process owner.

Process Control Flowchart



CHANGE HISTORY LOG

Revision	Date	Description of Changes
Baseline	8/12/98	Initial Release
A	10/6/98	Header and footer format changes. New title for GPG 1310.1 reference. Added modifiers to definition of "process". Identified responsibility for maintenance of quality records.
B	02/26/99	Deleted "Process Management Plan" from Records list since it is a PG or WI.
B	03/31/99	<ul style="list-style-type: none"> Footer format change. Moved paragraph 3. Records to P6 in order to comply with GPG 1410.1.
B	04/13/99	Corrected title of reference d and deleted reference e. Corrected paragraph 2.4 GPG from 5330.3 to 5330.1 Corrected flow chart element 2.4 GPG 5330.3 to 5340.2
C	08/09/99	This is an ADMINISTRATIVE REVISION only. The revision is required to bring document in line with GPG 1410.1, 2.7 Revising Directives , that states: "When a revision is necessary, substantive or non-substantive, the entire directive must be reissued in accordance with the process for issuing new directives described in this GPG."
C	8/20/04	<ul style="list-style-type: none"> The expiration date was extended until December 31, 2004 per the enclosed memo.

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August 20, 2004

TO: 230/Center Directives Manager

FROM: 100/Director

SUBJECT: Authority to Administratively Extend Expiration Dates for Select
Goddard Space Flight Center (GSFC) Directives

Pursuant to my authority under the Goddard Procedures and Guidelines (GPG) 1410.1D.1.3(a), Directives Management, to maintain the currency of GSFC directives used to record and communicate internal requirements and responsibilities, the following directives are hereby extended until December 31, 2004.

GPG 3511.1 Career Promotion Process at GSFC
GPG 5100.2A Supplier Performance Evaluations
GPG 5310.4C Identification and Traceability of Products
GPG 8070.2B Identification and Application of Statistical Techniques
GPG 8072.1C Process Control
GPG 8700.1C Design Planning and Interface Management
GPG 8700.3A Design Validation

Please ensure that the expiration dates for the documents listed above are updated in the Goddard Directives Management System accordingly.

Original Signed by

Edward J. Weiler

cc:

110/Ms. Letellier
140/Mr. Stephens
140/Ms. Thompson
200/Ms. Jones
200/Mr. White
300/Mr. Mitchell
300/Mr. Day
500/Mr. Brown