QUALITY ASSURANCE PLAN FOR CLASS C/D PAYLOADS/EXPERIMENTS

1. PURPOSE

To revise CQ 5300.36 by adapting the applicable requirements to class C/D payloads/experiments. All paragraphs and subparagraphs of CQ 5300.36 are superseded by this addendum or are applicable to the extent specified herein.

2. SCOPE

This plan applies to class C/D payloads/experiments which MSFC has Design, Development, Test, and Evaluation (DDT&E) responsibility. This plan is also applicable to services provided by MSFC to support class C/D payloads/experiments for other design centers.

3. POLICIES

a. Payload/experiment classification is required to be designated by Project Management and is a prerequisite to application of this addendum.

b. This document defines the minimum quality assurance requirements. Quality Engineering may impose additional requirements that are consistent with project guidelines and constraints.

4. REFERENCE DOCUMENTS

See Attachment A of CQ 5300.36 with the following additions:

MMI 8030.2	Policy on MSFC Payloads
CQ 5330.1	Software Quality Assurance Requirements For MSFC Projects
CQ 5300.37	Quality Assurance Plan for Contracted In-House Manufacturing and Test Operations
NMI 4210.10	NASA Software Management, Assurance, and Engineering Policy

5. DEFINITIONS

a. Attribute

A specific characteristic of an item such as a dimension, material property, or function that has a quality assurance requirement that is particular only to that characteristic.

b. Class C/D Payload/Experiment

A payload or flight experiment that has been classified class C or D per MMI 8030.2. Typically class C/D payloads/ experiments are economically reflyable, do not have any criticality 1 or 1R failure modes to the vehicle or crew, are less costly to develop and build than Class A or B, and national prestige is not a mission success issue.

c. Project Essential

A designation assigned to a component, system, subsystem, or attribute that affects safety compliance, fracture criticality, interface compatibility, or certain Project Management designated parameters. (Example: a part may have one attribute that is Project Essential such as an interface dimension and the remainder of the attributes are not Project Essential). Project Management shall have final authority on determining Project Essential items that do not affect safety compliance, fracture criticality, or interface compatibility.

6. MANAGEMENT AND PLANNING

Per CQ 5300.36, paragraph 6b & 6c, for Project Essential items only.

7. MILESTONE REVIEWS

Quality Assurance will, when deemed necessary by S&MA management, participate in milestone reviews such as design reviews, readiness reviews, and operational readiness inspections to ensure that quality-related concerns are identified, documented, and resolved.

8. PROCUREMENT CONTROL

Requirements for quality assurance, including acceptance documentation, will be established for Project Essential items or attributes by Quality Engineering on the Project/ Institutional Requirements Sheet (MSFC-Form-424). In cases where Quality Engineering considers it advisable to establish requirements on items or attributes not designated Project Essential, Project Management concurrence is required prior to establishing that requirement.

9. RECEIVING INSPECTION

Acceptability of items at Quality Receiving Inspection will be based on the following:

a. Authorization to deliver items to MSFC through contract or technical directive

b. Government source acceptance, if required

c. Contents of acceptance data package per contract requirements

d. Identification and quantities of items delivered

e. Absence of external damage

f. Performance of specific inspections and test verifications by MSFC Product Assurance personnel as defined on the drawing, the project plan, or Quality Engineering-developed instructions. (Note: If there is a need for clarification of requirements contact Quality Engineering).

A parts tag (MSFC Form 312) will be utilized to document Quality acceptance in accordance with EG 11.2. Data generated during receiving inspection will be maintained and filed in the Quality Assurance Records Center in accordance with EG 11.1.

10. NOTIFICATION TO QUALITY ASSURANCE OFFICE

To assure Quality coverage during processing of Project Essential items, Quality Assurance personnel shall, upon submission by Planning and Control Branch (EH53), review the work authorization documents or manufacturing route sheets. The objective of this review will be to establish Mandatory Inspection Points (MIPs) for the Project Essential attributes. The Planning and Control Branch should notify Product Assurance when operations on Project Essential items are to begin.

11. FABRICATION AND ASSEMBLY OPERATIONS

Per CQ 5300.36, paragraph 11, for Project Essential items only.

12. PROCESS CONTROL

Per CQ 5300.36, paragraph 12, for Project Essential items only.

13. TESTING

Per CQ 5300.36, paragraph 13, for Project Essential items only.

14. INSPECTION AND TEST RECORDS AND DATA

Per CQ 5300.36, paragraph 14.

15. NONCONFORMING MATERIALS AND ARTICLES

Per CQ 5300.36, paragraph 15.

16. STAMP CONTROLS

Per CQ 5300.36, paragraph 16.

17. HANDLING, STORAGE, PRESERVATION, MARKING, LABELING, PACKAGING, PACKING, AND SHIPPING

Per CQ 5300.36, paragraph 17, for Project Essential items only.

18. SOFTWARE QUALITY ASSURANCE (SQA)

SQA Personnel will ensure the implementation of software requirements identified in the project plan. The following activities and documentation are recommended to assure successful development and verification of payload software.

a. Activities

(1) Configuration Management
(2) Reviews
    (a) Requirements
    (b) Design
    (c) Test

b. Documentation

(1) Management Plan
(2) Product Specification
(3) Assurance Specification
(4) Management Control and Status Report