



Ames Policy Directive

APD 7120.8

Effective Date: June 27, 2023

Expiration Date: June 27, 2027

COMPLIANCE IS MANDATORY

Subject: Project Core Requirements

Responsible Office: Code D / Office of the Center Director

CHANGE LOG

Status [Baseline /Revision /Cancelled]	Document Revision	Date of Change	Description
Base	0	6/27/2023	Initial

1. POLICY

a. It is Ames Research Center (ARC) policy that projects follow a minimum set of requirements. This directive establishes the core set of governing documents and planning content for projects at ARC.

(1) The ARC Project Core Requirements (PCR) (see Attachment B) exist to provide a traceable, transparent, and tailorable framework for project management that achieves customer objectives consistent with ARC's philosophy and mission. This policy encourages deliberate balancing of innovative approaches with existing institutional standards and best practices, commensurate with the project risk posture.

(2) The requirements in the PCR are the minimum necessary set of high value requirements needed for customer satisfaction, quality, safety, and mission success.

(3) The PCR provides guidance to line management to help them manage projects in an effective manner consistent with their organizational goals within an overall ARC rubric.

b. PCR Overview

(1) The requirements in PCR consist of documents and products. For each requirement the approval authority and concurring authority, if applicable, are listed. The requirements are divided into three categories with expanding tailorability:

(a) Stand-alone document required: This requirement is not waivable. The specified document is to be created and configuration managed by the project. The content itself is tailorable as negotiated with the specified authorities.

(b) Content required: This requirement is not waivable, however a distinct, configuration-managed document specific and exclusive to the content is not required. Rather, the content can be consolidated into other configuration-managed documents held by the project such as the project plan. The element content is tailorable as negotiated with the specified authorities.

(c) Waivable: This requirement can be waived with acceptable rationale agreed upon by all specified authorities and documented.

Note: If not waived, the content, at the discretion of the project, can be consolidated into other configuration-managed documents held by the project.

(2) The approval authorities listed in the PCR are the Project Manager, Line Management of the executing organization, and the ARC Independent Technical Authorities (ITA) and support organizations.

(3) Requirements that do not apply in all circumstances are marked with an (*) and may be deemed Not Applicable (N/A) by agreement of the project and approval authorities.

(4) The total set of project management requirements, in addition to the PCR, include those negotiated with the customer as documented in customer agreements such as the project plan, task agreement, or Space Act Agreement.

(5) Optional templates and examples of documents may be provided by the Ames Chief Engineer Office.

2. APPLICABILITY

a. This directive is applicable to ARC.

- b. This document is applicable to airborne, space flight, and research and technology systems (both flight and ground segments); technology matured to readiness levels for end-use in systems; and/or mission critical software systems. Additionally, this document is applicable to other technical issues as designated by the Center Director to the Ames Chief Engineer.
- c. Projects governed by NPR 7120.5 are superseded by the requirements therein and are not within scope of this APD.
- d. This APD applies to civil servants at ARC and to contractors, grant recipients, and parties to agreements to the extent specified or referenced in the contracts, grants, or agreements.
- e. In this directive, all mandatory actions (i.e., requirements) are denoted by statements containing the term "shall." The terms "may" or "can" denote discretionary privilege or permission, "should" denotes a good practice and is recommended, but not required, "will" denotes an expected outcome, and "are/is" denote descriptive material.
- f. In this directive, all document citations are assumed to be the latest version unless otherwise noted.

3. AUTHORITY

- a. NPD 7120.4, NASA Engineering and Program/Project Management Requirements

4. APPLICABLE DOCUMENTS AND FORMS

- a. Project Core Requirements Matrix (Attachment B)

5. RESPONSIBILITY

- a. **Ames Chief Engineer (ACE) Office** shall:

- (1) Set the scope, direction, and requirements for the PCR by providing implementation guidance and direction to executing organizations on acceptable minimum institutional standards.
- (2) Track and verify satisfactory completion of all PCR products via a compliance matrix.
- (3) Store and maintain the compliance matrix.

b. **Executing Organization Line Management** shall approve or concur with the documents and products in the PCR which they are listed as the Approval or Concurring authority.

c. **ARC ITA / Support Organizations** shall approve or concur with the documents and products in the PCR which they are listed as the Approval or Concurring authority.

d. **Project Manager(s)** shall ensure that all required documents, products, and waivers in the PCR have been approved and concurred.

6. DELEGATION OF AUTHORITY

None.

7. MEASUREMENT/VERIFICATION

- a. Verification of conformance to requirements in this directive are measured through Center and Responsible Organizational management reviews, self-assessments, and subsequent analysis and reports of conformance to requirements, as well as periodic internal audits.

8. CANCELLATION

- a. None.
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Eugene Tu
Director

DISTRIBUTION:

Internal and external distribution.

ATTACHMENT A. ACRONYMS

ACE	Ames Chief Engineer
APD	Ames Policy Directive
ARC	Ames Research Center
NPD	NASA Policy Directive
NPR	NASA Procedural Requirements
PCR	Project Core Requirements
ITA	Independent Technical Authority

ATTACHMENT B. PROJECT CORE REQUIREMENTS MATRIX

Requirement / Product	Category	Approval Authority	Concurrence Authority
Project Technical Products			
Concept Documentation	Waivable	Line Organization	
Mission, Spacecraft, Ground, and Payload Architectures	Waivable	Line Organization	
Project Protection Plan	Waivable	ACE	I & Q
Project-Level, System and Subsystem Requirements	Content required	Line Organization	
Design Documentation	Content required	Line Organization	
Operations Concept	Content required*	Line Organization	
Heritage Assessment Documentation	Content required*	ACE & Q	
Safety Data Packages	Content required	Q	
ELV Payload Safety Process Deliverables	Stand-alone document required*	Q	
Verification and Validation Report	Waivable	Line Organization	
Operations Handbook	Waivable	Line Organization	
Orbital Debris Assessment	Content required*	Line Organization	
End of Mission Plans	Content required	Line Organization	
Mission Report	Stand-alone document required	Line Organization	
Project Management, Planning, and Control Products			
Contract/Statement of Work (invoking NPR 7150.2 and NASA-STD-8739.8)	Stand-alone document required	Line Organization	ACE & Q
Project Plan	Stand-alone document required	Line Organization	ACE & Q
Decommissioning/Disposal Plan	Content required	Line Organization	
Performance Measurement Baseline	Waivable	Line Organization	
Project Baselines			
Top technical, cost, schedule and safety risks, mitigation plans, and associated resources	Content required	Line Organization & ACE & Q	
Staffing requirements and plans	Content required	Line Organization	
Infrastructure requirements and plans, business case analysis for infrastructure Alternative Future Use Questionnaire	Waivable	Line Organization	
Schedule	Content required	Line Organization	
Cost Estimate	Content required	Line Organization	
Basis of Estimate	Waivable	Line Organization	
External Cost and Schedule Commitments	Content required*	Line Organization	

Requirement / Product	Category	Approval Authority	Concurrence Authority
Project Plan Control Plans Maturity Matrix			
Technical, Schedule, and Cost Control Plan	Content required	Line Organization	
Safety and Mission Assurance Plan	Stand-alone document required	Q	
Risk Management Plan	Content required	ACE & Line Organization & Q	
Acquisition Plan	Waivable	Line Organization	
Technology Development plan	Waivable	Line Organization	
Systems Engineering Management Plan	Waivable	ACE	
Software Development / Management plan	Content required*	ACE & Q	
Verification and Validation Plan	Waivable	ACE & Q	
Review Plan	Content required	ACE & Line Organization	
Mission Operations Plan	Content required*	Line Organization	
Environmental Management Plan	Waivable	J & Line Organization & Q	
Integrated Logistics Support Plan	Waivable	J & Line Organization	
Science Data Management Plan	Content required*	Line Organization	
Integration Plan	Waivable	Line Organization	
Configuration Management Plan	Content required	Line Organization	
Security Plan	Content required	Line Organization	I
Fault Management Plan	Content required*	ACE & Line Organization & Q	
Critical Items List	Content required*	ACE & Line Organization & Q	
Technology Transfer (formerly Export) Control Plan	Content required*	Line Organization	
Lessons Learned Plan	Content required	ACE & Line Organization & Q	
Planetary Protection Plan	Content required*	Line Organization	
Human Systems Integration Plan	Waivable	ACE	
System Security Plan (Cyber Security)	Content required	Line Organization & OCIO	
Quality Assurance Surveillance Plan	Content required*	Q	
Orbital Collision Avoidance Plan	Content required*	Line Organization	
Communications Plan	Waivable	Line Organization	

Requirement / Product	Category	Approval Authority	Concurrence Authority
NPR 7123.1B Technical Reviews			
Program/System Requirements Review	Project Plan needs to specify review / assessment plans. These reviews / assessments need to include the critical content agreed to among the Project, Program, Line Org, and ACE but can be combined.	ACE & Line Organization & Q	
Program/System Definition Review			
Mission Concept Review			
System Requirements Review			
Mission Definition Review/System Definition Review			
Preliminary Design Review			
Critical Design Review			
Production Readiness Review			
System Integration Review			
Test Readiness Review			
System Acceptance Review			
Operational Readiness Review			
Flight Readiness Review			
Pre-Ship Review			
Post-Launch Assessment Review			
Critical Event Readiness Review			
Post-Flight Assessment Review			
Decommissioning Review			
Disposal Readiness Review			
Peer Review			
Program Implementation Review and Program Status Review			

Requirement / Product	Category	Approval Authority	Concurrence Authority
ARC Specific Governance & Technical Requirements			
APD 1280.1 (AQMS)	Content required*	D	
APD 8700.1 (PRACA)	Content required*	Q	ACE
APR 1120.1/2 (ETA & SMATA)	Content required*	ACE & Q	
APR 5100.1 (Purchasing)	Content required*	JA	
APR 6410.1 (Material Control)	Content required*	JS	
APR 7123.1 (SE)	Content required*	ACE	
APR 7150.2 (Software)	Content required*	ACE & Q	
APR 7150.21 (Reviews)	Content required*	ACE	
APR 8000.4 (RM)	Content required*	Q	
APR 8705.1 (SS&MA)	Content required*	Q	
APR 8715.1 Chapter 10 (Pressure Safety)	Content required*	Q	
APR 8730.1 (Met Cal)	Content required*	Q	
APR 8730.2 (EEE Parts)	Content required*	Q	
APR 8730.3 (ESD)	Content required*	Q	
APR 8735.1 (GIDEP)	Content required*	Q	
ARC-STD 8070.1 (Design & Test)	Waivable	ACE	
CPD 7123.1 (SE BPs)	Content required*	ACE	
NASA-STD 8739.8 (Software Assurance and Safety)	Content required*	Q	
NASA-STD-1006 (Space System Protection). See ACE Memo: NASA-STD 1006 Implementation at ARC.	Content required*	ACE	
NASA-STD-6016C (Standard Materials and Process Requirements for Spacecraft)	Content required*	ACE & Q	
NPR 7150 Software Class & Compliance Matrix	Content required*	ACE & CIO & Line Organization & Q	

Category	Definition
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Content required	This requirement is not waivable, however a distinct, configuration-managed document specific and exclusive to the content is not required. Rather, the content can be consolidated into other configuration-managed documents held by the project such as the project plan. The element content is tailorable as negotiated with the specified authorities.
Waivable	This requirement can be waived with acceptable rationale agreed upon by all specified authorities. If not waived, the content can be consolidated into other configuration-managed documents held by the project.
*	If applicable, otherwise N/A.