

National Aeronautics and Space Administration  
Office of the Administrator  
Washington, DC 20546-0001



October 6, 2011

Vice Admiral Joseph W. Dyer, USN (Ret.)  
Chair  
Aerospace Safety Advisory Panel  
National Aeronautics and Space Administration  
Washington, DC 20546

Dear ~~Admiral~~ <sup>Joe</sup> Dyer:

Enclosed is NASA's response to a recommendation from the 2011 Third Quarterly Meeting of the Aerospace Safety Advisory Panel (ASAP). Please do not hesitate to contact me if the ASAP would like further background on the information provided in the enclosure.

I look forward to receiving continued advice from the ASAP that results from your important fact-finding and quarterly meetings.

Sincerely,

A handwritten signature in black ink, appearing to read "Charles F. Bolden, Jr.", written over a horizontal line.

Charles F. Bolden, Jr.  
Administrator

Enclosure  
2011-03-03 Responsibility, Authority, and Accountability for System Requirement  
Approval and Design Risk Acceptance

**ASAP Tracking Number 2011-03-03**  
**Responsibility, Authority, and Accountability for System Requirement Approval**  
**and Design Risk Acceptance**

**Finding:**

NASA's [Commercial Crew Program] (CCP) provided an update at the ASAP's 3rd Quarterly Meeting at the Goddard Space Flight Center on 14 July 2011. Discussion among the Chief, Safety and Mission Assurance, the CCP Manager, and the ASAP highlighted apparent uncertainty regarding how risk trades and risk acceptance will be managed within the CCP.

**Recommendation:**

NASA's Chief, Safety and Mission Assurance, Chief Engineer, and Associate Administrator for the Exploration Systems Mission Directorate should clarify who has responsibility, authority, and accountability to approve system requirements and accept design risk associated with the CCP program.

**Rationale:**

Work over the last four years has clarified the roles of program managers, technical authority, and NASA executives in accepting risk for classic NASA programs. The NASA-commercial relationship is more complex and clouded by the desire to afford greater freedom to commercial producers.

**NASA Response:**

For the CCP, roles regarding requirement tailoring, risk acceptance, and the dissenting opinion process are in full compliance with NASA Policy Directive 1000.0, NASA Governance and Strategic Management Handbook and NASA Procedural Requirements 7120.5, NASA Space Flight Program and Project Management Requirements. Programmatic Authority for CCP is delegated from the Human Exploration and Operations (HEO) Mission Directorate to the CCP. The CCP Manager is responsible and accountable for the safe conduct and successful outcome of the program in accordance with Agency policy.

The Commercial Crew Transportation System Certification Requirements for NASA Low-Earth Orbit Missions (ESMD-CCTSCR-12.10 Revision-Basic) document was baselined by the Associate Administrator (AA) for Exploration Systems at the Directorate Program Management Council (DPMC) on December 9, 2010. The requirements in this document include applicable Agency and industry standards mandated by the Agency's Engineering, Safety and Mission Assurance, and Health and Medical Technical Authorities. These requirements are currently being flowed down to the CCP-level documents, which are referred to as the "1100-series" documents.

Enclosure

The HEO DPMC holds the change authority for all changes to ESMD-CCTSCR-12.10. The CCP Program Control Board (PCB) holds the change authority for all changes to the CCP 1100-series requirements. The DPMC is chaired by the HEO AA and includes representatives from the Agency-level technical authorities. The CCP PCB is chaired by the program manager or delegate, with representation from the program technical authorities. Adding requirements, changing requirements, providing relief to these requirements, including waivers or deviations, and acceptance of risk incurred therein are evaluated and decided using this board structure in accordance with Agency governance. CCP decisions concerning the technical authority-based requirements require approval by the cognizant technical authority(ies). CCP decisions related to technical and operational matters involving safety risk also require formal concurrence by the cognizant technical authorities that the risk to be accepted by the program manager is within an acceptable range. If the technical authority determines the risk is not within an acceptable range for the program manager to make the risk-acceptance decision, the risk decision is elevated to the next level for acceptance.

Dissenting opinions follow the same governance. Dissenting opinions may be elevated by members of the PCB to the next level for resolution. If resolution is not reached at that level, dissenting opinions may be elevated further and, finally, to the level of the Administrator for disposition.