National Aeronautics and Space Administration

Headquarters
Washington, DC 20546-0001

October 22, 2010

Reply to Attn of: Safety and Assurance Requirements Division

TO: Distribution

FROM: Chief, Safety and Mission Assurance

SUBJECT: NASA System Safety Steering Group

For NASA to lead scientific and technical advances in aeronautics and space in the future, it is imperative that we revisit the role of system safety in programs, projects, and institutions. As the Space Shuttle Program winds down, NASA's work is not letting up. The future will bring a reliance on commercial providers for transportation of astronauts and cargo to low Earth orbit (LEO). Development of capabilities for human and robotic space exploration will continue. Technology development in aeronautics and astronautics will continue at an ever-accelerating pace.

Changes like these demand a better understanding of safety risk and a paradigm shift in the way we view and apply system safety. To be effective in the future, the system safety discipline will need the following attributes:

- Integration with systems engineering and other Safety and Mission Assurance (SMA)-related disciplines
- Modern and integrated safety analysis (including probabilistic risk assessment)
- Consideration of aggregate safety risk
- Marshaling evidence to reduce uncertainties
- Asset safety coverage
- Risk management involvement
- Risk-informed decision making involvement

In order to help set the course for the future direction of the system safety discipline, I am chartering a NASA System Safety Steering Group. The group will be chaired by our System Safety Fellow, Dr. Homayoon Dezfuli, and we are planning for the group to meet for the first time before the end of calendar year 2010.

According to the charter (enclosed), the chair nominates, for approval by Center SMA Directors, charter members of the NASA System Safety Steering Group for a two-year term. In the next several weeks, Dr. Dezfuli of my office will be contacting you with his nominations. He is targeting leaders in their field, with the right mindset, education, training, experience, and creativity to understand what is needed to shape the future of system safety at NASA.

I encourage you to publically announce the formation of this working group and to inform your staff when you approve your Center's nominee. By elevating the visibility of your Center's focal point for the advancement of the system safety discipline at the Agency level, you will be setting the stage for the two way communication between the working group and your organization that will be necessary for this group to succeed.

I believe this effort is very important to NASA and will strengthen the role of the system safety engineers in development and execution of NASA's missions. If you have any questions, please contact Dr. Dezfuli at (202) 358-2174 or by e-mail at hdezfuli@nasa.gov.

Thank you for your support.

Bryan O'Connor

Enclosure

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cc:
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National Aeronautics and Space Administration
NASA System Safety Steering Group (S^3G) Charter

1. **Purpose**. The purpose of the NASA S^3G is to develop Agency-wide plans and strategies to improve the:
   1.1 Content of the system safety discipline and competency of the system safety workforce, especially with regard to quantitative risk modeling and analysis, systems engineering, and risk management (including risk-informed decision making).
   1.2 Integration of system safety with related disciplines; including, but not limited to reliability, availability, and maintainability; risk management; risk assessment; systems engineering; cost and schedule analysis; and program/project management.
   1.3 Implementation of the system safety requirements of NPR 8000.4A, NPR 8715.3C, and NPR 8705.2B.
   1.4 Inclusion of system safety personnel early in project development and systems engineering.

2. **Applicability/Scope**. This charter applies to NASA Headquarters and all NASA Centers, including Component Facilities.

3. **Authority**. The S^3G is authorized by the NASA Chief, Safety and Mission Assurance. Under the authorizes granted via NPD 1000.3 and NPD 8700.1.

4. **Functions**.
   4.1 The S^3G will develop Agency-wide plans and strategies to advance the purposes of the group (see para. 1.1 through 1.4, above).
   4.2 The S^3G will serve as the focus for the continual improvement of system safety activities within NASA through the continuous capture, dissemination, and use of state-of-the-art knowledge gleaned from both internal Agency activities, as well as from benchmarking of leading external, national, and international organizations.
   4.3 The S^3G may charter ad hoc working groups as needed to focus on and recommend Agency-wide direction in specific technical areas. The S^3G will periodically (at least annually) assess the progress of ad hoc working groups and approve their continuance, if appropriate.

5. **Membership**.
   5.1 The members of the S^3G are:
      5.1.1 NASA System Safety Fellow, Chair.
      5.1.2 System Safety Manager, Safety and Assurance Requirements Division (SARD) of Office of Safety and Mission Assurance (OSMA), NASA Headquarters, Co-chair.

5.1.3 System Safety Technical Discipline Team Leader, NASA Safety Center, Executive Secretary.
5.1.4 Risk Assessment Manager, SARD, OSMA, NASA Headquarters.
5.1.5 Reliability, Availability, and Maintainability Manager, SARD, OSMA, NASA Headquarters.
5.1.6 NASA Center representatives nominated for two-year terms by the Chair and approved by their respective Center Safety and Mission Assurance Directors.

5.2 Advisors to the S^3G may include:
5.2.1 Experts from academia and national laboratories, as appropriate.
5.2.2 Representatives of commercial systems providers.

6. **Meetings**. Meetings will take place at the call of the Chair.

7. **Duration**. This charter will remain in effect until canceled or amended by the NASA Chief, Safety and Mission Assurance.

8. **Measurement**. The accomplishments of the S^3G will be included in the annual System Safety State of the Discipline report for review by Agency senior safety and mission assurance managers.

9. **Records**. The Executive Secretary is responsible for the maintenance of this charter and all other records associated with the S^3G.

Bryan O'Connor
Chief, Safety and Mission Assurance