National Aeronautics and Space Administration

Headquarters Washington, DC 20546-0001



August 3, 2015

Beet to Attn of: Human Exploration and Operations Mission Directorate

MEMORANDUM FOR THE RECORD:

On July 2, 2015, I, William H. Gerstenmaier, Associate Administrator for Human Exploration and Operations, sent a letter to SpaceX identifying NASA participation in the SpaceX Accident Investigation Board, which is being overseen by the Federal Aviation Administration (FAA). Mr. Akash Vangani, of the Launch Services Program (LSP), was assigned as the primary NASA representative; Mr. William Spetch, of the Commercial Resupply Services Program, was appointed to support Mr. Vangani; and Mr. Daniel Dorney, of the Commercial Crew Program, was included as an observer. Since this is a FAA Accident Investigation Board (AIB) the NASA participants have not been established as voting members of the AIB. However, both SpaceX and the FAA have fully included NASA in the process as valuable participants, providing them complete access to the data and to the SpaceX team and the deliberations. Additionally, NASA LSP has begun a series of independent analyses and evaluations that will lead to an in-depth understanding of the events by the government.

I have been closely observing the inclusion of NASA in the investigation and have determined that NASA LSP should serve the function of an independent review team for NASA for this investigation. Their experience and understanding of the Falcon 9 system for NASA robotic missions places LSP in a unique position to most efficiently and independently evaluate the events that occurred on CRS-7 that led to its failure and to ensure that the resulting corrective actions are implemented appropriately. I am confident that this approach will enable an effective return to flight of the Falcon 9 to support NASA's missions.

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William H. Gerstenmaier



National Aeronautics and Space Administration Headquarters Washington, DC 20546-0001

November 3, 2014

Reply to Attn of: Human Exploration and Operations Mission Directorate

Mr. David W. Thompson President and Chief Executive Officer Orbital Sciences Corporation 45101 Warp Drive Dulles, VA 20166

Subject: NASA Representation to the Orb-3 Accident Investigation

In accordance with NASA SSP 50190-CRS, Contingency Action Plan, Annex A: Commercial Resupply Service, and in support of NNJ09GA02B, International Space Station Commercial Resupply Services contract paragraph II.A.19 Mission Success Determination, Investigation, and Corrective Actions, NASA is designating Thomas Costello, as the primary interface to Orbital's investigation activities and the NASA official voting member. Mr. Costello can be reached at (281) 483-0119 or by email at <u>thomas.a.costello@nasa.gov</u>. Mr. Matthew Lacey, has also been designated to provide support and will work directly with Mr. Costello and be a formal back up. Mr. Lacey can be reached at (321) 867-9878 or by email at <u>matthewlacey@nasa.gov</u>. Orbital can use these NASA personal as desired on the board. Additional NASA personnel will be made available as needed to support the investigation efforts.

Should you have any further questions concerning this matter, you may reach me at (202) 358-2015 or by email at <u>william.h.gerstenmaier@nasa.gov</u>.

Sincerely,

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William H. Gerstenmaier Associate Administrator for Human Exploration and Operations

National Aeronautics and Space Administration

Headquarters Washington, DC 20546-0001



November 26, 2014

Reply to Attn of: Human Exploration and Operations Mission Directorate

TO: Distribution

FROM: Associate Administrator for Human Exploration and Operations

SUBJECT: Independent Review Team of the Orb-3 Accident

I have asked Mr. John McManamen, Manager, NASA White Sands Test Facility, to lead an Independent Review Team of the Orb-3 Accident. The ultimate goal of this team is to amplify the learning for the NASA teams from this event. In the spirit of continuous learning, I would like NASA to independently ascertain technical root cause of failure. This activity will be a validation of the Accident Investigation Board (AIB) efforts and to inform the Agency's risk posture in order to support Orbital's return to flight activities. The team will independently develop a detailed fault tree and provide independent assessment of same telemetry data and physical evidence. The team needs to look beyond this failure and use the failure to spur creative thinking and expand the learning from this event beyond the simple fault tree and root cause. One goal is to determine how to develop, operate and acquire more reliable systems. This failure was a tremendous loss and we need to maximize the learning from this event. Coordination to obtain data and other products from Orbital and its subcontractors will be through Mr. Tom Costello, the official NASA representative to the Orbital AIB.

William H. Gerstenmaier

cc: HQ/AA/R. Lightfoot HO/OSMA/T. Willcutt HQ/OCE/R. Roe HQ/HEOMD/S. Scimemi HQ/HEOMD/J. Norman GSFC/100.0/C. Scolese JSC/AA/E. Ochoa JSC/OA/D. W. Hartman JSC/OA/J. R. Montalbano JSC/OA/M. T. Suffredini JSC/OA/K. O. Todd JSC/ON/T. A. Costello JSC/ON/C. A. Koerner JSC/ON/W. C. Spetch KSC/AA/R. D. Cabana MSFC/DA01/P. Scheuermann GRC/J. Free

National Aeronautics and Space Administration Headquarters Washington, DC 20546-0001



July 2, 2015

Heply to Attn of: Human Exploration and Operations Mission Directorate

Ms. Gwynne Shotwell President & Chief Executive Officer Space Exploration Technologies 1 Rocket Road Hawthorne, CA 90250

Subject: NASA Representation to the CRS-7 Accident Investigation

In order to provide SpaceX with a primary interface to the CRS-7 Accident Investigation, and recognizing that multiple NASA Programs interface with SpaceX, NASA has designated the Launch Services Program (LSP) as the coordinating Program. This is being done to minimize the impact to SpaceX, while providing the required insight for the directorate programs. As you know the directorate interfaces with SpaceX through the launch Services program, the commercial crew program and the International Space Station program. We would like the LSP representative to be considered a member of the investigation team.

LSP is designating Mr. Akash Vangani, as the primary interface to SpaceX's investigation activities. Mr. Vangani can be reached at (321) 867-8345 or by email at <u>akash.v.vangani@nasa.gov</u>. Mr. William Spetch, has also been designated to provide support with Mr. Vangani. Mr. Spetch can be reached at (281) 244-7765 or by email at <u>William.spetch-1@nasa.gov</u>. The commercial crew program will be represented by Daniel Dorney.

If required, additional NASA personnel will be made available to support the investigation efforts.

Should you have any further questions concerning this matter, you may reach me at (202) 358-2015 or by email at <u>william.h.gerstenmaier@nasa.gov</u>.

Sincerely,

William H. Gerstenmaier Associate Administrator for Human Exploration and Operations

cc: HQ/AA/R. Lightfoot HQ/HEOMD/J. Norman HQ/HEOMD/S. Scimemi JSC/OA/M. T. Suffredini JSC/ON/V. Feng JSC/ON/V. C. Spetch KSC/FA/K. Lueders KSC/FA/K. Lueders KSC/VA/A. Mitskevich KSC/VA-G/A. Vangani

Space Exploration Technologies Corporation (SpaceX): Mr. Elon Musk Space Explorations Technologies Corporation 1 Rocket Road Hawthorne, CA 90250