

# United States Senate

WASHINGTON, DC 20510

August 2, 2011

The Honorable Charles F. Bolden, Jr.  
Administrator  
National Aeronautics and Space Administration  
300 E Street, S.W.  
Washington, DC 20546

The Honorable Jacob J. Lew  
Director  
Office of Management and Budget  
Executive Office of the President  
725 17<sup>th</sup> Street, N.W.  
Washington, DC 20503

Dear Administrator Bolden and Director Lew:

It is our understanding, based upon Administrator Bolden's testimony before the House Science Committee, the National Aeronautics and Space Administration ("NASA") has selected a design for the new heavy-lift Space Launch System ("SLS") and the Office of Management and Budget ("OMB") is currently reviewing these plans. The SLS design Administrator Bolden articulated during his testimony uses Shuttle and Ares derived components, including: the J-2X engine, Space Shuttle Main Engines and Solid Rocket Boosters. Therefore, it appears, this SLS design meets the requirements articulated in the NASA Authorization Act of 2010 (*hereafter*, "Authorization Act") and the Department of Defense and Full-Year Continuing Appropriations Act of 2010, (*hereafter*, "Appropriations Act"). If so, we strongly, but respectfully, encourage NASA and OMB to publish its final design in an expeditious manner.

As you know, the final design of the SLS is long overdue. As a result, according to press reports, the Senate Commerce, Science and Transportation Committee has issued a subpoena to NASA for documents related to the SLS. This delay is perplexing since the parameters for the final design are clearly articulated in the Authorization and Appropriations Acts. The Authorization Act clearly states the SLS "shall be designed from inception as a fully integrated vehicle capable of carrying a total payload of 130 tons or more..." The Appropriations Act reinforced this requirement by stating "the heavy lift launch vehicle system... shall have a lift capability not less than 130 tons." Both statutory texts were carefully crafted and agreed upon after consultation with rocket propulsion experts who unanimously concluded these design specifications were required to ensure a meaningful spaceflight program. These same experts also determined these legal requirements could only be realistically met through the use of solid rocket motors.

It also has been brought to our attention some of our colleagues have written to Administrator Bolden requesting NASA conduct a competition for the booster portion of the SLS. Since, the legal requirements for the SLS can only be realistically met through the use of solid rocket motors, we welcome a competition once the initial SLS flight testing is completed.

Based upon Administrator Bolden's testimony, it appears this initial flight testing will not be complete until, at least, the end of this decade. We strongly believe conducting a competition earlier in the development of the SLS will only create further delays and cost overruns. As Administrator Bolden stated before the House Science Committee:

One of the things we share that we have recommended that I can share in the design... of the new SLS, in an effort to try to speed things along and utilize as much as we can of existing technology while preserving the space industrial base for some time is – is a desire to utilize existing solid rocket boosters.

Regardless, in the interim, we will insist the law is strictly adhered to and the development and flight testing of the SLS, with solid rocket boosters, is not to be delayed in anyway by a future booster competition.

In addition, we will oppose the use of any government funds for the development of a new liquid propulsion system designed to meet the booster requirements of the Authorization and Appropriations Act. As Administrator Bolden has repeatedly pointed out, in the near-term, obtaining sufficient funding for SLS and other vital NASA priorities could be extremely challenging. Therefore, during this period of financial austerity, it is irresponsible to spend funds on the development of a new system, such as an enhanced liquid engine, to accomplish what is already possible through existing technology, specifically solid rocket motors. As quoted earlier, Administrator Bolden said the use of solid rocket motors is important to "...speed things along and utilize as much as we can of existing technology..." Undoubtedly, this statement is in keeping with the Administrator's commitment to control costs. This is also of great importance to Congress. Specifically, the Senate Report to the Authorization Act stated, "[t]he Committee anticipates that in order to meet the specified vehicle capabilities and requirements, the *most cost-effective* and 'evolvable' design concept... [includes] two solid rocket motors composed of at least four segments." [Emphasis added.]

In conclusion, the SLS parameters to the Authorization and Appropriations Acts are clear. Based upon expert advice the only way to realistically meet these requirements is through the use of Space Shuttle and Ares derived components, including solid rocket motors. Therefore, it appears, NASA has met the obligations of the Authorization and Appropriations Acts. If so, we strongly, but respectfully, encourage NASA and OMB to publish its final design in an expeditious manner.

Sincerely,

Harry Reid  
Mike Crapo

Orrin G. Hatch  
James R. Kinch

Tom Hill

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