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## CONSULTATION REPORT FOR NESC ITEM 05-175-E: PA&E Review of CEV Service Module

May 15, 2006

In October, 2005, the NASA Headquarters Program Analysis and Evaluation (PA&E) Office requested that NESC provide a person to serve on PA&E's team that was to assess the readiness of the Glenn Research Center (GRC) to step-up to the Crew Exploration Vehicle (CEV) liquid oxygen/methane (LOx/CH<sub>4</sub>) Service Module propulsion system task. Dennis Dillman was the NESC person assigned to this team. Mr. Dillman was subsequently named the deputy chairperson for this study. There were seven other team members encompassing NASA HQ, the Johnson Space Center (JSC), GRC, and NASA retirees.

The study was chartered to answer two questions:

- 1) Assess the overall readiness of the GRC to perform the LOx/CH<sub>4</sub> propulsion tasks assigned by the ESMD.
- 2) Recommend actionable measures to improve and strengthen GRC's ability to take on a larger role for future Vision for Space Exploration (VSE) missions.

The study commenced in November, 2005. The team traveled to GRC, JSC, the Marshall Space Flight Center, and NASA HQ to interview participants in the LOx/CH<sub>4</sub> task, past and present customers of GRC, and Constellation Program management. Part way through the study, the LOx/Methane task was canceled by ESMD, so the assessment team concentrated on question #2.

The final report of the PA&E GRC Readiness Assessment team was published on February 22, 2006. Recommendations were as follows:

- 1) Redesign the GRC organizational structure to consolidate discipline expertise and establish clear lines of communication, responsibility, and authority necessary to perform a major space flight development assignment.
- 2) Recruit and assign experienced space flight systems development personnel to Space Directorate head and key Division Chief positions.
- 3) Commit to the assignment of significant space flight project work to GRC.

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- 4) Depending on the project(s) assigned to GRC, recruit and assign Project Managers with experience in the development of relevant space flight systems.
- 5) Establish and implement an integrated Human Capital Management Plan that enhances programmatic and technical capability within the Space Directorate.
- 6) Develop and implement a plan to achieve compatibility among systems, tools, and processes to be employed by GRC and those in use at the partner centers in the execution of the space flight project assignment.

The report was given to the Administrator and to the (then) incoming GRC Center Director for their reference. To date, they have begun work on Recommendation 1 (redesign the GRC organization...). Recommendation #3 was satisfied by the recent announcement that GRC would become the implementing center for the CEV Service Module. The implementation of recommendations 2 and 4 – 6 can follow as the Service Module work gets.

Dennis Dillman  
 NESC Chief Engineer for NASA HQ

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## Approval and Document Revision History

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1.0	Initial Release	NESC Chief Engineer's Office	5-16-06