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United States Government Accountability Office
Washington, DC 20548

B-319488

May 21, 2010

Congressional Requesters

Subject: *National Aeronautics and Space Administration—Constellation Program and Appropriations Restrictions, Part I*

In a letter dated March 12, 2010, you requested information and our views on whether the National Aeronautics and Space Administration (NASA) complied with the Impoundment Control Act and with restrictions in the fiscal year 2010 Exploration appropriation when it took certain actions pertaining to the Constellation program. The Exploration appropriation bars NASA from using Exploration funds for “the termination or elimination of any program, project, or activity of the architecture for the Constellation program.” In addition, it bars NASA from using Exploration funds to “create or initiate a new program, project or activity.” You also asked us for information regarding the planning activities of NASA staff after the President released his fiscal year 2011 budget request.

This letter responds to your request for information regarding the planning activities of NASA staff and whether NASA complied with the Exploration appropriation prohibition restricting the use of Exploration funds to “create or initiate a new program, project or activity.” We will respond to your other requests in a separate opinion. After gathering and assessing the information surrounding the Constellation program, it is our view that, at this time, NASA has not violated the Exploration appropriation’s restriction on the use of Exploration funds to “create or initiate a new program, project or activity.”

Our practice when rendering decisions is to obtain the views of the relevant agency to establish a factual record and the agency’s legal position on the subject matter of the request. GAO, *Procedures and Practices for Legal Decisions and Opinions*, GAO-06-1064SP (Washington, D.C.: Sept. 2006), *available at* www.gao.gov/legal/resources.html. By letter, the NASA General Counsel supplied NASA’s legal views supporting its actions related to the Constellation program as well as relevant information. Letter from General Counsel, NASA, to Assistant General Counsel for Budget Issues, GAO, Apr. 26, 2010. We also gathered information by interviewing NASA staff, reviewing internal NASA communications and documents, and examining documents NASA developed for the Office of Management and Budget (OMB) and the Office of Science and Technology Policy (OSTP).

BACKGROUND

The primary objective of the Constellation program is to develop capabilities to transport humans to Earth orbit, to the Moon, and back to Earth. NASA, *Fiscal Year 2010 Budget Estimates*, at EXP-3, available at www.nasa.gov/news/budget/FY2010.html (last visited May 15, 2010). The program also serves as a stepping-stone to future human exploration of Mars and other destinations. *Id.* On February 1, 2010, the President released his 2011 budget request, which proposed the cancellation of Constellation in favor of the creation of a different approach to human space exploration. *Budget of the United States Government for Fiscal Year 2011*, at 129-30, available at www.gpoaccess.gov/usbudget/fy11/index.html (last visited May 15, 2010).

Prior to the release of the President's 2011 budget request, Congress enacted the fiscal year 2010 Exploration appropriation, which appropriated about \$3.7 billion for "exploration research and development activities." The appropriation made the funds available until September 30, 2011, with the following limitation:

"Provided, That notwithstanding section 505 of this Act, none of the funds provided herein and from prior years that remain available for obligation during fiscal year 2010 shall be available for the termination or elimination of any program, project or activity of the architecture for the Constellation program nor shall such funds be available to create or initiate a new program, project or activity, unless such program termination, elimination, creation, or initiation is provided in subsequent appropriations Acts."

Commerce, Justice, Science, and Related Agencies Appropriations Act, 2010, Pub. L. No. 111-117, div. B, title III, 123 Stat. 3034, 3113, 3142 (Dec. 16, 2009).

After the release of the President's 2011 budget request, OMB and OSTP asked NASA to study ways to implement the Administration's space exploration policies. Accordingly, the Associate Administrator for Exploration on February 5, 2010 sent an e-mail announcing that he was "standing up several teams to help with the planning effort." E-mail from Associate Administrator for Exploration, NASA, to Center Director, Johnson Space Center, NASA, *et al.*, *Subject: Teams to develop near term plans in response to the FY2011 President's Budget Request for ESMD*, Feb. 5, 2010. The e-mail message listed the names of eight teams and a leader for each. *Id.* The Associate Administrator's e-mail message also stated that an additional, pre-existing team would plan for the Human Research Program.¹ *Id.* NASA refers to these teams as "study teams."

¹ NASA has provided us with information on the activities of eight of the nine study teams. NASA has not yet provided us with information on the activities of the Enhancing International Participation study team.

The teams worked to develop preliminary plans and budget levels to conduct research and development in various technical areas. For example, the Heavy Lift and Propulsion team studied engine development and propulsion research, while the Robotic Precursor team considered the robotic missions that would be necessary as precursors to subsequent human missions. Most teams had a written charter with proposed team members, an overview of the team's tasks, and a rough schedule for the team's work. Though the level of detail in the written charters varied, most charters required a written product or a presentation to OMB and, sometimes, to OSTP.

Of the nine team leaders, at least seven were from headquarters.² Eight of the nine team leaders and most team members were either GS-15 or Senior Executive Service employees.³ The non-leadership team members were based at headquarters or at various NASA Centers nationwide. NASA paid headquarters staff from its Cross Agency Support appropriation account and paid Center staff from its Exploration appropriation account.

Most of the teams accomplished the bulk of their work during a 4- to 6-week period after the teams were established in early February 2010. During this 4- to 6-week period, the teams generally met about once a week in person. This required some travel, as team members were stationed throughout the country. The teams also held other meetings in person or by telephone. NASA employees performed nearly all the work of the teams; the teams used contractor staff only for administrative support functions such as note-taking at meetings. According to NASA, contractor staff did not carry out any of the substantive work of the study teams.

Generally, during the 4- to 6-week period during which each study team was especially active, the team leaders spent most or all of their time on team activities. Most team members spent a majority of their time on non-team activities; however, some team members did spend a majority of their time on team activities. Most of the non-leadership team members completed their team activities in addition to their other work assignments. One team leader told us that, in general, NASA headquarters staff are involved in planning activities while staff at the NASA Centers implement programs. Therefore, she said, her study team activities were aligned with her usual job function, which is planning. One team was a successor to a team that NASA had established prior to the release of the President's 2011 budget request, and another team had already been established prior to the release of the budget request. These two teams built upon previous efforts as they met the requests from OMB and OSTP. Thus, the work activities of these two teams did not change substantially in order to meet the requests from OMB and OSTP.

² One team leader is at the Johnson Space Center in Houston. NASA has not yet provided us the location of the Enhancing International Participation team leader.

³ NASA has not yet provided us the pay grade of the Enhancing International Participation team leader.

In addition to their internal planning discussions, the teams also communicated with parties external to NASA. Some of the teams issued public requests for information. For example, the Heavy Lift and Propulsion team issued a request for information from industry, academia, and research organizations regarding possible propulsion systems and areas for additional research. The requests for information stated that NASA intended to use the information for planning and acquisition strategy development and that under Federal Acquisition Regulation section 15.201(e), responses to the request are not offers and cannot be accepted by the government to form a binding contract. Another team planned a conference with universities and industry to brief them on NASA's research plans for new technologies, to obtain their feedback, and to discuss additional requests for information. In addition, three study teams have plans to issue broad agency announcements. Under the Federal Acquisition Regulation, agencies may use a broad agency announcement "for the acquisition of basic and applied research and that part of development not related to the development of a specific system or hardware procurement." 48 C.F.R. § 35.016(a).

To our knowledge, none of the teams hired new staff or established new program offices within NASA.⁴ Two teams have established a total of three planning offices at NASA centers. One team established two offices to plan future robotic exploration missions, and another team established one office to plan ways to develop new exploration technologies. The activities of most of the teams are now concluding, as six of the nine teams have produced at least some of their final documents. Staff time spent on the teams has declined accordingly.

See attachment for detailed information on the subject matter areas of each team, their membership, the time the team members spent on team activities, and the appropriations charged.

DISCUSSION

At issue here is whether NASA's actions and use of study teams to conduct planning activities complied with the Exploration appropriation provision that bars NASA from using Exploration funds to "create or initiate a new program, project, or activity, unless such . . . creation[] or initiation is provided in subsequent appropriations Acts."⁵ Pub. L. No. 111-117, div. B, title III.

Our analysis begins with the statutory language. In the absence of indications to the contrary, Congress is deemed to use words in their common, ordinary sense.

⁴ NASA has not yet provided us information on the activities of the Enhancing International Participation team.

⁵ Because NASA paid for the activities of its headquarters staff from its Cross Agency Support appropriation account, these activities were not subject to the restriction that Congress placed upon the Exploration appropriation account.

B-308715, Apr. 20, 2007. One measure of the common, ordinary meaning of words is a standard dictionary. *Id.* “Create” means “bring (something) into existence,” while “initiate” means “cause (a process or action) to begin.” *The New Oxford American Dictionary* 396–97, 868 (2nd ed. 2005). Thus, Congress prohibited NASA from using Exploration funds to bring into being a new program, project, or activity.⁶

Study teams were staffed in part by Center employees, whose salaries are paid from the Exploration appropriation account. The activities of the study teams centered on initial planning related to the proposals in the President’s 2011 budget request. The teams held internal planning discussions and developed documents for OMB and OSTP. These documents contained preliminary plans for the new programs and budget proposals. Some teams also issued public requests for information to gather input from academia and industry for use in further planning activities. Two teams set up planning offices to provide an organizational structure for already existing planning activities in the robotic and emerging technology areas. All these activities focused on planning. The teams did not create any new programs, set up new program offices, or hire or permanently reassign any staff. The teams did not award any contracts or bind NASA to taking any future course of action. Thus, to date, NASA’s study teams have conducted only planning activities and have not brought into being a new program, project, or activity. These actions do not violate the provision in the 2010 Exploration appropriation which bars NASA from using Exploration amounts to create or initiate a new program, project, or activity.

In addition, according to the Associate Administrator for Exploration, NASA also carried out the planning activity to respond to requests for information from OMB and OSTP. E-mail from Associate Administrator for Exploration, NASA, to Center Director, Johnson Space Center, NASA, *et al.*, *Subject: Teams to develop near term plans in response to the FY2011 President’s Budget Request for ESMD*, Feb. 5, 2010. By law, the President must formulate a budget submission, and agencies, including NASA, must develop appropriation requests as part of the budget process. 31 U.S.C. §§ 1105, 1108(b)(1). To provide timely, useful, and accurate information as part of the appropriations process, agencies must engage in various types of planning activities. Planning activities are an essential element of the budget process. The prohibition in the Exploration appropriation does not preclude NASA’s use of the Exploration appropriation to conduct planning activities.

⁶ A “program, project, or activity” is “[a]n element within a budget account. For annually appropriated accounts, the Office of Management and Budget (OMB) and agencies identify PPAs by reference to committee reports and budget justifications.” GAO, *A Glossary of Terms Used in the Federal Budget Process*, GAO-05-734SP (Washington, D.C.: Sept. 2005). For example, NASA’s fiscal year 2010 budget request lists five PPAs within the “Constellation Systems” category: Program Integration and Operations, Orion Crew Exploration Vehicle, Ares I Crew Launch Vehicle, Ares V Cargo Launch Vehicle, and Commercial Crew and Cargo. NASA, *Fiscal Year 2010 Budget Estimates*, at EXP-2, *available at* www.nasa.gov/news/budget/FY2010.html (last visited May 15, 2010).

NASA's actions thus far are in contrast to those of the Department of Energy (DOE) when it began to implement a loan guarantee program. B-308715, Apr. 20, 2007. GAO was asked whether DOE had violated an appropriations prohibition against implementing or financing a new loan guarantee program. *Id.* There, DOE had staffed and operated a program office, drafted regulations, and solicited and evaluated "pre-applications." *Id.* We found that DOE had taken concrete measures to implement the loan guarantee program and, therefore, that DOE's action violated a statutory provision that barred DOE from using funds to "implement or finance" the loan guarantee program. *Id.*

DOE's activities went beyond those of NASA's study teams. At this time, NASA has not created or initiated a new program, project, or activity. Unlike DOE, NASA has not created a new office or drafted any regulations. In addition, NASA has not initiated any procurement actions.⁷ Instead, NASA staff developed preliminary plans. The leaders of three study teams described their work products not as plans, but rather as plans for how to develop a subsequent plan if NASA staff were ever directed to do so. One team leader described the team's product document as a "pre-formulation" document and stated that NASA would need to develop an implementation plan if it were authorized to proceed with a new program. We reviewed the documents that NASA prepared for OMB and OSTP, and their contents are consistent with the team leaders' descriptions.

The preliminary nature of the teams' products is consistent with the circumstances under which the study teams were formed and the short time they had to complete a work product. Several team leaders stated that they had no knowledge of the policy announced in the President's 2011 budget request until it was released to the public on February 1. Most of the teams then had less than 2 months to complete a document, with each team using the full-time work of only a handful of NASA staff and the part-time work of, at most, a few dozen additional staff.

CONCLUSION

Between February 2010 and the present, NASA study teams conducted preliminary planning activities for the President's proposals regarding future human space flight. These actions did not "create or initiate" a new program, project, or activity in violation of the provision in NASA's fiscal year 2010 appropriation. However, going forward, NASA should be mindful of the appropriations provision and ensure that its

⁷ We note that three teams have plans to issue broad agency announcements. We do not know the content of these announcements; however, the charters for these three teams and the documents they submitted to OMB and OSTP describe preliminary plans for programs, projects, and activities that existed before Congress enacted the fiscal year 2010 Exploration appropriation. Any broad agency announcements must comply with the prohibition in the appropriation.

preliminary planning activities do not evolve into activities that would create or initiate a new program, project, or activity.

We hope the information provided in this opinion is helpful to you. If you have questions, please contact Assistant General Counsel Julia Matta at 202-512-4023 or Managing Associate General Counsel Susan Poling, 202-512-2667.

Sincerely yours,

A handwritten signature in black ink that reads "Lynn H. Gibson". The signature is written in a cursive style with a large initial "L" and a stylized "H".

Lynn H. Gibson
Acting General Counsel

Attachment

List of Requesters

The Honorable Robert Aderholt
The Honorable Ralph Hall
The Honorable Gene Green
The Honorable Bill Posey
The Honorable Pete Olson
The Honorable John Culberson
The Honorable Jason Chaffetz
The Honorable Parker Griffith
The Honorable Michael D. Rogers
The Honorable Kevin Brady
The Honorable Jo Bonner
The Honorable Spencer Bachus
The Honorable Steve LaTourette
The Honorable Ken Calvert
The Honorable John Fleming
The Honorable Suzanne Kosmas
The Honorable Rob Bishop
House of Representatives

NASA Use of Study Teams to Develop Plans for the Fiscal Year 2011 President's Budget Request

- NASA established study teams to develop plans for OMB and OSTP on how it would start the new programs and cancel the Constellation program
- Most of the study work occurred during the first 4 to 6 weeks after establishment
- Study teams considered normal planning activity for fiscal year 2011
- Some study teams evolved from existing NASA teams or programs
- As of April 2010, study teams used 14,228 staff hours to complete their work
 - Team participants generally charged their normal charge codes for study team activities
- Most teams have completed their planning activities and no longer meet on a regular basis
- The plans developed are considered a "point of departure" and are being refined
- Most team members still had their regular duties; the team was an additional responsibility
- Study teams did not stand up any new program offices or create any new program managers
- Planning Offices are being established at NASA centers based on proposed center assignments
- Teams called upon as-needed to work on drafting requests for information, supporting workshops, and Fiscal Year 2012 budget development as part of budget formulation process

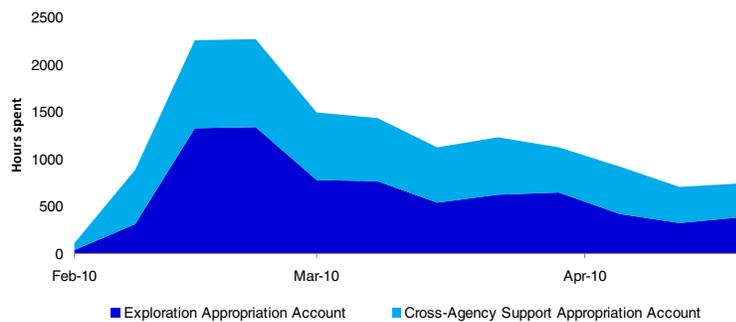
Time Used by NASA Study Teams on Fiscal Year 2011 President's Budget Request Planning

Team	Number of members in Study team	Number of weeks In Operation	Percent of Team Leader Hours Spent on Team Activities	Percent Hours Spent by Members per week	Average Hours per member per week	Total Hours
Heavy Lift and Propulsion Technology	14	10	63	22	9	1,232
Human Research Program	6	10	47	14	6	329
Commercial Crew Development	16	12	62	31	12	2,370
Robotic Precursor	10	12	86	39	16	1,866
Flagship Technology Demonstrations	16	12	97	47	19	3,588
Enabling Technology Development and Demonstration	17	10	94	20	8	1,382
Constellation Transition	43	11	32	16	6	2,958
Participatory Exploration	12	11	47	10	4	504
Average for 8 of 9 teams	17	11	66	25	10	1,779

Source: GAO analysis of NASA data

Note: We did not independently verify the team member hours data provided by NASA. Data not provided for Enhancing International Participation study team.

Time Used by NASA Study Teams has declined Over Time



Source: GAO analysis of NASA data.

Note: We did not independently verify the team member hours data provided by NASA. Data not provided for Enhancing International Participation study team.

Demographic Information on NASA Study Team Members

Team	GS-13	GS-14	GS-15	SES and other senior levels	Other or data not available	Hours Spent	
						HQ ^a	Center ^b
Heavy Lift and Propulsion Technology	0	1	9	4	0	646	586
Human Research Program	0	0	2	2	2	222	107
Commercial Crew Development	0	1	7	6	2	1,744	626
Robotic Precursor	0	1	3	6	0	1,160	706
Flagship Technology Demonstrations	1	0	5	4	6	610	2,978
Enabling Technology Development and Demonstration	0	2	12	3	0	586	796
Constellation Transition	3	4	25	10	1	1,448	1,510
Participatory Exploration	1	4	5	1	1	357	147
Totals						6,773	7,455

Source: GAO analysis of NASA data

Note: We did not independently verify the team member hours data provided by NASA. Data not provided for Enhancing International Participation study team.

^a HQ study team member hours charged to Cross-Agency Support appropriation account
^b Center study team member hours charged to Exploration appropriation account.

Heavy Lift and Propulsion Technology (HLPT) Study Team

- Established February 15, 2010
- Objective was to develop plans for the HLPT Program is seeking to improve capabilities in heavy lift propulsion performance and flexibility
- The HLPT program is comprised of two major areas
 - First Stage and In-Space Engine Demonstration
 - Foundational Propulsion Research
- 14 members from headquarters, Glenn Research Center (GRC), Langley Research Center (LaRC), Marshall Space Flight Center (MSFC)
- Team used 1,232 staff hours
- Current team activity is generally limited to weekly teleconferences
- Completed Deliverables
 - Gave briefing to OMB and OSTP with corresponding plan document laying out notional plan for HLPT Program
 - Issued a Request for Information on May 4, 2010
- Remaining Deliverables
 - Plans to release a Broad Agency Announcement

Human Research Program (HRP) Study Team

- Established February 15, 2010
- Program intended to investigate and mitigate the highest risks to astronaut health and performance in support of NASA exploration missions
- Tasked with developing plans on how to use increased funding for the existing HRP to address critical areas of human health risks, focusing on biomedical technology, space radiation, and behavioral health
- 6 members from headquarters and Johnson Space Center (JSC)
- Team used 329 staff hours
- Completed Deliverable
 - Gave briefing to OMB and OSTP
- Proposed budget increase applied to existing program elements and currently identified human health risks for Fiscal Years 2011 – 2015
 - Budget program structure not changed
- Will competitively solicit new research content through broad agency research announcements

Commercial Crew and Cargo Study Team

- Established February 16, 2010
- Commercial Crew – Develop plan for commercial crew services including drafting human rating requirements
- Commercial Cargo – Develop plan for reducing risk and expediting the pace of development of cargo flights
- Team comprised of most members of the Commercialization Evaluation Team already addressing similar issues in 2009
- Total of 16 members from headquarters, JSC, Kennedy Space Center (KSC), and MSFC
- Team used 2,370 staff hours
- Current team activity is fairly low, consisting mostly of periodic emails from the team leader to keep the study team members abreast of NASA's progress in resolving issues that may develop
- Remaining Deliverables
 - 5-year plan for development of commercial crew services leading to competitive selection of one or more crew transportation providers
 - Complete and provide to OMB a draft human rating requirements document for commercial crew services in July 2010

Exploration Precursor Robotic Missions (xPRM) Study Team

- Established February 8, 2010
- Team is formulating plans to conduct a series of robotic precursor missions to scout targets for future human exploration
 - Potential destinations may include the moon, Mars and its moons, Lagrange points and nearby asteroids
- Planning strategy for two types of missions
 - Medium Class Exploration Missions
 - Life cycle costs of \$800 million or less
 - Small Scout Class Exploration Missions
 - Life cycle costs of \$100 to \$200 million
- 10 members from headquarters, Ames Research Center (ARC), Goddard Space Flight Center (GSFC), JSC, and MSFC
- Team used 1,866 staff hours
- Current team activity is generally limited to emails and teleconferences
- Establishing planning offices at ARC and MSFC
- Remaining Deliverables
 - 5-year budget plan
 - Request for Information to be released in May

Flagship Technology Demonstrations Study Team

- Established February 15, 2010
- Develop plan for missions that demonstrate transformational technologies in space for advancement of human space exploration
- The team was to establish a “point of departure” for the demonstration missions
 - Plan is to initiate missions in 2011 to support annual launches starting in 2014
 - Much planning work still needs to be completed once NASA receives permission to proceed
- 16 members from headquarters, GRC, GSFC, JSC, LaRC, and MSFC
- Team used 3,588 staff hours
- Study team answering questions as needed, will met again to synthesize RFI input and will hold weekly telecons to keep members informed
- Completed Deliverables
 - Gave briefing to OMB on the plan for the Flagship Technology Demonstration missions
- Remaining Deliverables
 - 5-year budget plan
 - Request for Information to be released in May, responses due in June
 - Team may revise missions based on RFI inputs

Enabling Technology Development and Demonstration (ETDD) Study Team

- Established February 15, 2010
- ETDD intends to mature exploration technologies so they can be demonstrated in small ground and flight experiments, and transitioned to Flagship, robotic precursor, and other missions of opportunity for validation of key capabilities
- Proposed ETDD program will have projects similar to those in the existing Exploration Technology Development Program
- 17 members from headquarters, ARC, GRC, GSFC, JSC, KSC, LaRC, and MSFC
- Team used 1,382 staff hours
- Study team is holding weekly telecons and will meet again on June
- Glenn Research Center is the lead for ETDD and is establishing a planning office
- Completed Deliverables
 - Gave briefing to OMB on the plan for the ETDD Program
 - Issued a Request for Information on May 10, 2010
- Remaining Deliverables
 - 5-year budget plan
 - Broad Agency Announcement to be released in July

Constellation Transition Study Team

- Established February 8, 2010
- Objective was to develop initial Constellation program transition plans, outline early actions, and address processes in 14 functional areas. Also included initial transition mapping of resources possibly required by new programs. Did not include Constellation Cancellation or Closeout Implementation Plan
- Leverages Shuttle Transition and Retirement experience, framework and processes
- Team used 2,958 staff hours
- 43 members from headquarters, ARC, GSFC, JSC, KSC, and MSFC
- Comprised of experts on workforce, contracts, facilities and infrastructure, property and hardware, risk and knowledge management, records management, security, IT, communications and partnerships
- Currently the team is awaiting further direction
- Completed Deliverables
 - Initial Plan for Constellation Transition
 - Planning Estimate of Constellation Closeout Office workforce
 - Initial Plan to identify and manage disposition of facilities; Update due July 15, 2010

Participatory Exploration Study Team

- Established February 8, 2010
- Objective is to increase the ability of the public to experience and participate in NASA missions
- Team developed a plan to establish new office that
 - Supports research technology to include public participation
 - Coordinate Participatory Exploration activities in future missions
 - Act as clearing house for best practices in Participatory Exploration
- Team used 504 staff hours
- 12 members from headquarters, ARC, and JSC
- Plans for 2010
 - External benchmarking
 - Setup system to manage public input/ distribute information to the public
 - Create public polls and/Request for Information on Participatory Exploration design ideas
 - Develop draft technical guidance
 - Develop draft Participatory Exploration policies
 - Conduct best practices workshop
- Completed Deliverables
 - Gave briefing to OMB on the plan

GAO Contact and Staff Acknowledgments

For further information about this briefing, please contact Cristina Chaplain, Director, at (202) 512-4841 or chaplainc@gao.gov. Key contributors to this briefing were Shelby Oakley, Assistant Director, Jesse Lamarre-Vincent, Carrie Rogers, Jose Ramos, and John Warren.

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