



441 G St. N.W.  
Washington, DC 20548

March 18, 2014

The Honorable Carl Levin  
Chairman  
The Honorable James M. Inhofe  
Ranking Member  
Committee on Armed Services  
United States Senate

**Nuclear Command, Control, and Communications: Review of DOD’s Current Modernization Efforts**

The nuclear command, control, and communications (NC3) system is a large and complex system of systems comprised of numerous terrestrial, airborne, and space-based components used to assure connectivity between the President and nuclear forces. The current NC3 architecture consists of systems that support day-to-day nuclear and conventional operations prior to a nuclear event as well as “thin line” systems that are to provide survivable, secure, and enduring communications through all threat environments. Though some are specific to the nuclear mission, most NC3 systems support both strategic and conventional missions.

NC3 systems support five important functions:

- Situation monitoring: collection, assessment, and dissemination of information on friendly forces, adversary forces and possible targets, emerging nuclear powers, and worldwide events of interest.
- Planning: development and modification of plans for the employment of nuclear weapons and other options.
- Decision making: assessment, review, and consultation on the decision to use nuclear weapons and for supporting operations.
- Force management: assignment, training, deployment, maintenance, and logistics support of nuclear forces before, during, and after a crisis.
- Force direction: implementation of decisions regarding the execution, termination, destruction, and disablement of nuclear weapons.

The Senate Armed Services Committee report accompanying a bill for the National Defense Authorization Act for Fiscal Year 2013 mandated GAO to assess Department of Defense (DOD) efforts to sustain and improve the NC3 system.<sup>1</sup> We addressed the mandate through three separate engagements. We issued a report on the Family of Advanced Beyond Line-of-Sight Terminals in December 2013. A second, classified report on operational assessments of the NC3 system was issued in February 2014. For this third review, we assessed the extent to which DOD is addressing known NC3 gaps or weaknesses and steps DOD has taken to transform the current NC3 system to provide improved capabilities in the future.

<sup>1</sup>See S. Rep. No. 112-173, at 199 (2012).

We provided an in-depth classified briefing to your staff on the results of our review in January 2014. We briefed on the status of several on-going NC3 modernization efforts within DOD, including progress made and remaining challenges to completing those efforts. We also briefed your staff on DOD's efforts to plan and develop the National Leadership Command Capability, a large initiative to integrate nuclear, senior leader, and continuity of government command, control, and communications capabilities and systems. Further details remain classified.


To address our objectives, we limited the scope of our review to NC3 component systems that support force direction, decision making, and planning. Given the large number of NC3 systems, we excluded situational awareness and force management systems. This allowed us to focus on a more manageable subset of NC3 systems, primarily those that provide communication capabilities. We collected and reviewed DOD and other assessments of the NC3 system. We reviewed acquisition and planning documents available for specific modernization efforts as well as broader efforts to transform the NC3 system, although much of the documentation on transformation was in draft form. We interviewed cognizant officials from the Joint Staff, U.S. Strategic Command, DOD Office of the Chief Information Officer, Defense Information Systems Agency, National Security Agency, military departments, and Johns Hopkins University's Applied Physics Laboratory to gain perspectives on challenges and progress made in modernizing the NC3 system. We obtained technical comments from DOD on the contents of our classified briefing.

We conducted this performance audit from March 2013 through March 2014 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our objectives.

We are sending copies of this report to appropriate congressional committees and the Secretary of Defense. This report will be available at no charge on our website at <http://www.gao.gov>.

Should you or your staff have questions concerning this report, please contact me at (202) 512-4841 or at [chaplainc@gao.gov](mailto:chaplainc@gao.gov). Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. Key contributors to this report were John Oppenheim, Assistant Director; Brandon Booth; Laura Greifner; Mike Shaughnessy; Jay Tallon; and Tom Twambly.

Sincerely yours,



Cristina T. Chaplain  
Director, Acquisition and Sourcing Management

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