

The Honorable Ernest J. Moniz  
Secretary of Energy  
U.S. Department of Energy  
1000 Independence Avenue, SW  
Washington, DC 20585

November 30, 2016

Dear Secretary Moniz:

Thank you for your letter requesting that I provide my views on implementation of the Department of Energy (DOE) response to the report by the Commission to Review the Effectiveness of the National Energy Laboratories (CRENEL), which I co-chaired with TJ Glauthier. Progress has certainly been made since our report was released last October, and institutionalization of these efforts must be secured.

**1. The Department of Energy and the Secretary of Energy have been responsive to the Commission's recommendations**

I commend you and your staff on your responsiveness to the Commission's recommendations thus far. Your efforts have led to many significant wins, some of which I highlight below (organized by the themes used in the CRENEL report):

- *Recognizing value:* To improve Congress's understanding of the value of the laboratories, DOE will be issuing the first Annual State of the DOE National Laboratories Report. The purpose of the report is to describe key initiatives of the National Laboratory system and to explain how the laboratories are working collectively and individually to help accomplish DOE's missions. In addition, the report will provide greater transparency into the laboratories' indirect costs by publishing aggregated financial data. Holding Lab Days on the Hill have also served to increase congressional understanding of the laboratories and their activities. The fact that these events are organized around research areas, as opposed to showcasing individual laboratories, emphasizes the collective achievements and capabilities of the laboratory system.
- *Rebuilding trust:* A major theme of our report was the importance of restoring a trust relationship between DOE and its laboratories. The Department has taken many steps to improve its stewardship of the laboratories, including,

- Clarify roles and responsibilities: DOE developed two documents to clarify roles and responsibilities, one by the Secretary, which describes core management principles, and one by the Laboratory Operations Board (LOB), which describes the role of the site office for each program responsible for stewarding a laboratory.
- Improve the Contractor Assurance System (CAS): DOE established a CAS Working Group that developed an updated policy to emphasize the importance of the relationships between laboratory, Federal, and management and operating (M&O) contractor personnel.
- Revamp the conference travel approval process: DOE, working closely with the laboratories, updated its guidance on conference-related activities and spending. The changes streamline the approval process and reduce transactional oversight of the laboratories.
- Offer a leadership development rotational program: This program offers Federal mid- and senior-level employees the ability to rotate to field locations to facilitate greater awareness of the DOE enterprise, particularly the laboratories.
- Improve the directives review process: DOE has been working to improve the development of directives by increasing senior leadership involvement, establishing a prioritization scheme for directives review, reworking the directives review and comment process to improve efficiency, and reviewing implementation of directives.
- *Maintaining alignment and quality*: The National Nuclear Security Administration (NNSA) and the applied energy offices have improved strategic alignment by adopting the laboratory strategic planning process previously put in place by the Office of Science. During this newly introduced planning process, each of the laboratories presents to a DOE audience on the full range of activities conducted by the laboratory and their goals for the next year and beyond. Federal representatives from all parts of the stewarding office are invited to attend the presentations, which, in the Office of Science have provided greater cohesiveness and alignment across programs and divisions. For some of the Federal employees in attendance, the inaugural presentations constituted the first time they heard the full extent of laboratory activities, rather than only activities pertaining to their programmatic or operational domain.
- *Maximizing impact*: By focusing on the laboratories as a system, the Big Ideas Summits have been a particularly effective way to maximize impact. The Big Ideas Summits allow the laboratories to collaborate while producing crosscutting ideas that may become multi-laboratory projects and allow the Department to

benefit from the collective capability of the laboratory system. The creation of the Office of Technology Transitions and the establishment of a Technology Commercialization Fund are also notable. These developments show the Department's commitment to ensuring that scientific and technical advances can move beyond the laboratory system, greatly increasing economic impact.

- *Managing effectively and efficiently:* The Department has made strides in this area assessing infrastructure condition and further developing the institutional cost reporting system. Together these efforts provide the Department better understanding of the infrastructure needs and relative cost of the laboratories, both of which contribute to better management and more informed decision making.

## **2. Focusing on implementing specific recommendations without appreciation for the importance of rebuilding trust can make matters worse**

An overarching observation from our investigations is that implementing specific CRENEL recommendations without an explicit appreciation of the core tenet of rebuilding trust may make matters worse, instead of better. Fortunately, I can point to only a handful of examples where focusing too much on individual recommendations resulted in missing the bigger picture of restoring trust.

One example is in the area of indirect cost transparency. While I have been a proponent of pushing the laboratories towards greater transparency in their indirect costs, I do not believe this should come at the price of flexibility in how they design their cost accounting structures. The government hires external organizations that are experts in managing research organizations to run the laboratories, and it makes little sense to force a Battelle or a Lockheed to use a different accounting system than the one they use for their other businesses. Some recent overhead reform efforts, such as the Draft Request for Proposal (RFP) for the Sandia National Laboratories contract competition and language in the 2017 House Energy and Water Development Appropriations Bill, are too prescriptive and attempt to control laboratory accounting rather than provide a way to increase visibility.

Another example is in the area of project management. NNSA has had its share of project management failures and has rightfully focused its efforts to improve by following a rigorous review process. At the same time, NNSA has lowered the dollar threshold for projects that must go through the process, thereby increasing transactional oversight over all projects.

Furthermore, transaction costs and disruptions caused by implementing change can be significant, which could have a temporary negative affect on the organization. For example, the Revolutionary Working Group culminated in a new contract for the SLAC National Accelerator Center. Working through every single provision in the contract was

a labor-intensive process. Fortunately, the parties involved were committed to doing the work, and I believe the benefits of the new contract language will be worth the effort in the long run. However, repeating the process 15 more times with parties of varying commitment may prove too difficult. The pilot directives review process also involves more up-front effort – to ensure that the directive is necessary, the purpose is clearly stated and understood, and the various stakeholders are aware of and comfortable with the proposed changes – all before the directive is officially submitted for review. The results of both of these initiatives have been encouraging, but will take real effort to sustain and may be difficult to replicate.

### **3. Continuous and active engagement and commitment from DOE leadership is crucial**

The current administration has demonstrated in several ways the impact and importance of strong and committed leadership. Sustaining recent improvements will require continued commitment and engagement by the next administration.

Several institutions, either created or empowered by the Secretary, have measurably improved the relationship between the Department and the laboratories. Two critical factors have contributed to their success: (1) they include representatives from both DOE (including headquarters and site office personnel) and the laboratories, and (2) they engage regularly and meaningfully, including face-to-face meetings several times a year. The Laboratory Policy Council (LPC), which the Secretary chairs, is made up of senior DOE leadership and members of the Executive Committee of the National Laboratories Directors' Council (NLDC). Through the LPC, the Secretary spends an entire day with the laboratory directors at regular intervals, which sends a strong signal of support. The Laboratory Operations Board (LOB) is chaired by the Under Secretary for Management and Performance, and its members include the Chief Operating Officers (COOs) of the programs with laboratories, the Deputy Under Secretary for Science and Energy, representatives from the laboratory Chief Operating Officer (COO) and Chief Research Officer (CRO) groups, and representatives from the site/field offices and M&O contractors. We heard repeatedly from the laboratories how important the LOB has been as a forum for raising and resolving issues.

The revised policy on conference attendance and travel is an excellent example of an issue that the laboratories were able to effectively raise to the Department's senior leadership via the LPC and get resolved to everyone's satisfaction.

The engagement of senior leadership is crucial for resolving administrative issues and improving and sustaining the Department's stewardship of the laboratories. Senior leaders also articulate a vision for the Department and the laboratories, and, in this respect, the Secretary's commitment to the idea that the laboratories are a system is essential. The Department, under the Secretary's leadership, has facilitated much greater collaboration

and coordination across the laboratories through various initiatives, including the Big Ideas Summits, the Crosscutting Research Programs, and Lab Days on the Hill by mission area. The Big Ideas Summits provide the opportunity for laboratory personnel to present their ideas on the biggest challenges in the DOE mission areas, allowing the Department to leverage the outstanding capabilities of the laboratories. Some of these ideas have evolved into Crosscuts, which represent cross-departmental funding streams to address a large technical problem (e.g., Grid Modernization). In addition, stovepipes that persist within the Department have been overcome through the formation of multidisciplinary Tech Teams.

In our discussions for this year-after review, I heard several reports that people who were already motivated to bring about changes felt empowered by the Secretary to do so. I was also told that efforts have been further enabled by the CRENEL report, which became a tool for overcoming bureaucratic resistance. For example, the LOB has focused on better managing data calls issued by DOE as a way to reduce unnecessary burden and duplication of effort by the laboratories. In addition to establishing a point of contact for data calls at each stewarding office, the Office of Management has been working directly with the offices that issue most of the data calls to ensure they are scoped well, not duplicative, and appropriately targeted to the laboratories. Another positive example involves the Chief Risk Officer whose office has visited over 60 groups throughout the DOE enterprise and established the Risk Management Working Group, thereby spreading the ethos of enterprise risk management throughout the laboratory oversight system. I do not believe these and many other improvements and initiatives would have been pursued without the Secretary's endorsement.

**4. It is not clear how much of these efforts have been trickling down to field offices and lower levels of DOE**

DOE is a big and complicated organization, and, while many parts of the Department, especially at the top, have seen significant positive progress, it is still too early to tell how much of these laudable efforts have reached other areas. I have witnessed significant efforts from those who support repairing the partnership with the laboratories, but the impact varies when one looks across the DOE offices. For example, although steps have clearly been taken to improve stewardship in NNSA, it is unclear if the same effort is being made in the applied energy offices. Because many of these efforts involve culture change, more time will be required before their effects become apparent, underscoring the importance of continued support for these initiatives by the new administration.

**5. Steps in the right direction have been taken in certain areas, but more must be done before meaningful change occurs**

Despite progress in certain areas, more must be done before we will see meaningful and lasting change. One example is the research and development program at the National

Energy Technology Laboratory (NETL). The CRENEL report found NETL's research program did not live up to the same standards as the other 16 laboratories and recommended several possible organizational changes, including transforming it into a federally funded research and development center (FFRDC). DOE has responded by reorganizing the leadership and restructuring the budget to increase transparency into the amount spent on research and development, and is working to create an independent research program like the other laboratories enjoy. While this certainly represents progress, I would encourage the next administration to revisit the idea of changing the governance structure to an FFRDC so that NETL can enjoy the same benefits and flexibility as the other laboratories. NETL's research and impact would also benefit from more collaboration with the universities in its region and by building stronger regional networks.

As stated in the CRENEL report, most of the work at the National Laboratories is publicly funded. It is therefore reasonable to ask, for the purpose of greater accountability and transparency, that laboratory financial data be made available to the public. With this goal in mind, I support the activities across DOE and the laboratories to increase the transparency of the laboratories' indirect costs and believe that the analysis presented in the Annual State of the DOE National Laboratories Report is an important step forward. I strongly encourage the Department and the laboratories to continue their efforts in this regard.

Technology transfer is another area where the Department is making strides by, for example, creating an Office of Technology Transition, establishing the Technology Commercialization Fund, and releasing a Technology Transfer Execution Plan. Total transformation will require a change in culture since parts of DOE and the laboratory system have in the past not been particularly supportive of, or engaged in, technology transfer. Sustained commitment by leadership is crucial to continue along this path. Also, without dedicated departmental funding for technology transfer activities, laboratories may not get the message of its importance.

## **6. Areas where there are further opportunities to act**

Finally, a few areas present further opportunities to act. I will speak here of only one to underscore its importance to me personally and to the continued implementation of the CRENEL recommendations. I plan to urge Congress to create a standing body to monitor the implementation of the recommendations across the six themes in the CRENEL report. Such an organization can provide continuity during transitions and independent advice for Congress, and it can be an effective vehicle to promote change. A standing body is better than ad hoc committees, whose members must first learn the laboratory system and then generally end up formulating nearly identical findings and recommendations as their predecessors. I would also encourage Congress to consider using the National Academies of Sciences, Engineering, and Medicine as the host of such a standing body. Ensuring the

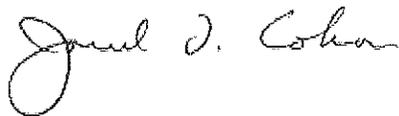
continued success of the DOE's laboratories is consistent with the Academies' past and current activities (e.g., the Mies/Augustine follow-on committee), and with the Academies' engagement with and support of the U.S. science and technology enterprise. I took the initiative to speak with members of the Academies' leadership, and they are open to exploring the idea.

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In closing, I must acknowledge the dedicated support provided by key members of your staff who have been coordinating the follow-up effort at DOE. I appreciate the effort of Alison Markovitz, Steven Erhart, and Adam Cohen, and I especially thank Karen Gibson, who not only coordinated the work of our Commission but also of this review. It has also been a pleasure to work with my former co-chair TJ Glauthier, and our fellow former commissioners: Norman Augustine, Wanda Austin, Charles Elachi, Paul Fleury, Susan Hockfield, and Dick Meserve. All their perspectives have been instrumental in formulating this review. Special thanks go to our research team co-leads Susannah Howieson of the IDA Science and Technology Policy Institute and Mark Taylor of the IDA Systems and Analyses Center, along with the members of their team, Laurie Dacus, Martha Merrill, and Julian Zhu among them, who served the Commission during the assessment and provided support for this review.

Thank you for your time and this opportunity to comment on this important endeavor.

Sincerely,



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