

***TJ Glauthier***

November 30, 2016

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

Dear Mr. Secretary,

Thank you for the opportunity to conduct a follow-up assessment of the Commission to Review the Effectiveness of the National Energy Laboratories (CRENEL) at the one-year anniversary of our report and nine months after the Department's formal response to it. Dr. Jared Cohon, my former co-chair on the Commission, and I appreciate being able to keep attention focused on this topic.

To be succinct, I am pleased with the progress that has been made, and I will encourage the next Administration and the next Congress to continue these efforts to strengthen the relationship between DOE's Federal staff and the 17 National Labs for the benefit of the country. A positive and effective working relationship is critical to maintaining the quality and capabilities of the National Labs, which are a primary means through which the Department carries out much of its mission of national security, basic science, and innovation. The progress so far is the beginning of a journey which I hope the next team will build on and expand.

The main thrust of our report was that the partnership and trust that had once characterized the relationship between DOE and its National Labs had deteriorated over the years and needed to be rebuilt. That, of course, requires a culture change on both sides of the divide, which will be neither easy nor quick. As a result, the most important steps you have taken have been the establishment of strong, active working groups that combine DOE and National Lab personnel to tackle tough challenges together. Some of these are big scientific and technical issues. Others are administrative. The reestablishment of the Laboratory Operations Board (LOB) and the creation of the Laboratory Policy Council (LPC) help in both areas. The use of joint task forces of COOs, CFOs, CIOs, etc. from headquarters and the labs extends that further. Maintaining this degree of collaboration is the most important step I can encourage the next Administration to take.

The CRENEL report contained a number of specific recommendations. I support the actions that have been taken on these. Naturally, many of these are at an early stage and will need to receive continued support to ensure they are maintained and achieve their intended results. Other actions are still in progress and will need continued attention to be completed.

My greatest concern at this point is the potential reversal of recent progress. A second area of serious, ongoing concern is the risk that reforms made at higher policy levels may not find their way down to lasting improvements in lower-level, day-to-day

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operations. The greatest number of changes so far has generally been made in planning, policy-making, high-level management practices, and some pilot projects. The next challenge, in my view, is to build on those steps in order to expand the labs' "freedom to operate" with greater authority and flexibility – and significantly fewer approval requirements from DOE. As our report noted, the degree of micromanagement, which produces inefficiencies and confusion in authority, varies among the program offices, site offices, and labs. Achieving a high level of authority and accountability across the local management of all the National Labs would restore what we described as the appropriate role of a federally funded research and development center (FFRDC) and balance of responsibilities throughout the enterprise. That would truly yield a more effective and efficient Department of Energy.

DOE does not operate in a vacuum, so our CRENEL report also contained some recommendations for the Congress and the White House, specifically for the Office of Management and Budget (OMB), and the Office of Science and Technology Policy (OSTP). Especially in light of the transition in Presidential Administrations, the Congressional role of continued support and oversight is crucial to ensuring that the relationship between DOE and its National Laboratories continues to improve.

### **The Review Process**

Over the past year since we presented our report to you and to the Congressional Appropriations Subcommittees on Energy and Water Development, we have met regularly with your staff to understand their implementation actions. In recent months, we have discussed with members of your office and the Congressional staff the potential value of a formal review of the follow-up actions. I appreciate your decision to request this review and hope that my perspective will be valuable to you and your team, to the new Administration, and to the new Congress.

To conduct this review, Dr. Cohon, and I met with key officials at DOE and at several of the labs. Our meetings at DOE have included the key program and functional offices. We have re-visited some of the National Labs, including one of the National Nuclear Security Administration (NNSA) labs (Lawrence Livermore National Laboratory), two of the Office of Science labs (Argonne National Laboratory and SLAC National Accelerator Laboratory (SLAC)), and one of the applied labs (the National Renewable Energy Laboratory (NREL)). We have also had phone conversations with representatives of some of the other labs and site offices.

In Washington, DC, we have met with staff of various Congressional committees that have jurisdiction over DOE, and with two key White House offices, OMB and OSTP. We met as well with other groups that are conducting follow-up reviews. Among them are the Secretary of Energy Advisory Board (SEAB) standing task force on the National Labs, the internal DOE committee on the follow-up to the Mies/Augustine panel, and the new National Academy of Sciences/National Academy of Public Administration panel the Congress created to track the implementation of the Mies/Augustine panel recommendations over the next four years.

I present my findings and conclusions below, in the same order as the chapters of the CRENEL report. Dr. Cohon will be presenting his comments to you in a separate letter, as you requested.

## **Recognizing Value**

Our CRENEL report began with an acknowledgement that many Members of Congress and the public do not have a strong understanding of what the National Energy Labs do and why they are so important to the Nation.

The first “Annual State of the DOE National Laboratories Report” to Congress will be a meaningful step in raising the awareness and understanding in Congress of the importance and role of the National Labs. I have reviewed a draft version of that report, and am impressed with its substance and style. I am glad that it is also serving as a vehicle for DOE to report to Congress on its progress in following through on the recommendations in our report. I urge future Administrations to continue to produce this as a regular annual report to the Congress.

The “Lab Days on the Hill” have been another way to raise the profile of the National Labs with the Congress. It is particularly noteworthy that these have been developed around various technology or R&D themes, rather than just featuring individual lab’s areas of competence. I encourage future Administrations to continue holding these events and seeking ways to get more key Congressional Members and staff to attend the exhibits and to meet with the teams of DOE and National Lab personnel.

The CRENEL report included recommendations urging the Congress and OMB to provide the necessary resources to maintain the labs’ capabilities and facilities. It is too early to render a judgment on this, but I do reiterate its importance to the Nation in terms of the labs’ vital missions in national security, basic science, and innovation for the country.

## **Rebuilding Trust**

This section of our CRENEL report contains the most recommendations and, in some respects, is the most important. In particular, the recommendation to restore the partnership and trust inherent in the FFRDC roles of DOE and the National Labs is the headline for our full report. Virtually all of our other recommendations flow from that one.

I am impressed with the progress that has been made in increasing the openness and collaboration among the headquarters offices, site offices, and labs as they have worked together to review and revise many DOE policies and practices in response to our report. This goes to the heart of the trust issue. Of course, this is an area in which setting the tone starts at the top. Mr. Secretary, the collaborative relationship that you and your leadership team have developed with the National Lab Directors and their management teams has vastly improved the situation and serves as a model for future Secretaries.

The Laboratory Operations Board (LOB) has been extremely effective in getting people from headquarters and the labs to work together on key issues. In addition, a number of working groups composed of people from headquarters offices and labs have been successful in tackling specific topics. Examples include the CFOs working on indirect cost issues, technology transfer leaders working on options for easier collaborations, CIOs on cyber and other computer issues, human resources officials working on compensation and benefits methodologies, and COOs working on data calls and other topics. Importantly, these extend across the NNSA organization as well as the other areas of the Department.

The current effort to clarify roles and responsibilities throughout the organization encompasses a set of actions that strikes at the heart of some of the biggest problems in the DOE-National Lab relationship. A new Department-wide Secretarial policy statement was recently issued that emphasizes the core responsibilities and authorities of the line organization through DOE and the labs, and the mission support roles of DOE functional offices and site offices. The NNSA also issued a new Site Governance directive that emphasizes these same points. Much of the dysfunction that our Commission noted stems from confusion around these roles, especially with respect to the NNSA labs. Too many people, especially in functional support roles and site offices, feel that they should exercise decision-making authority over the labs. Instead, they should be providing advice and mission support to the line organization, where the responsibility lies. Achieving that distinction will require continued diligence.

An area in which the improved working relationships is showing results is in the Department's processes for directives, orders, and other requirements. A joint DOE-National Lab working group has developed new processes to be more efficient and to be risk-based. A prioritization system has been developed to reduce the sheer volume of changes going through the system. The new process includes a streamlined system for minor changes and has sharply reduced the number of directives undergoing major revision (from 90 to 24 this year). This accomplishment is significant both in reducing the disruption caused by constant changes and in maintaining focus on the most important issues.

There are a number of other specific areas in which the DOE, with active involvement of the National Labs, has made promising policy changes. To provide a few examples: (1) the revised policy on conference attendance and travel has restored most of the responsibility for decision-making to the labs and has largely resolved what had become a very serious problem; (2) changes in the compensation and benefits administration process are providing some increased flexibility and authority for the labs to be competitive in their regional labor markets; (3) the development of a new staff rotational program that is getting good marks in its first cycles for being able to rotate people from headquarters out to the field for periods of a month or two up to a year; (4) a reorganization is being implemented at the National Energy Technology Laboratory (NETL) in order to increase the visibility and focus on the R&D functions there; and (5) the change in the recent RFP for the Sandia National Laboratories Management and Operating (M&O) contract to offer less incentive fees and more fixed fee in order to emphasize the partnership and deemphasize fee as a motivating factor.

Actions taken to reduce the impact of data calls on the labs have also been positive. Each of the headquarters program offices has implemented our recommendation of establishing a single point of contact for all data calls. These positions are at appropriate organizational levels, for example, vested in the COO in the Office of Science and in the Director of the Office of Policy in the NNSA. I am encouraged by the intent of these changes and with the commitment of the people in these positions and throughout the enterprise to implement the new policies effectively.

In the area of providing the National Labs greater authority to operate, I strongly support the new "revolutionary" contract at SLAC. The new contract utilizes Stanford's policies instead of DOE directives in areas such as personnel and cyber security. In other areas, it provides for more local decision-making, such as control of foreign visitors and

occurrence reporting. Broadly, it returns control of requirements to line management at the site office and the lab. This is a valuable pilot for the Department, which I understand has attracted the attention of the other labs. I encourage DOE and the other labs to renegotiate other M&O contracts to incorporate many of the provisions developed here, including even some of those into the NNSA lab contracts.

A new Contractor Assurance System (CAS) policy has been issued, but it appears to me that its implementation so far has been highly variable. The intention of the revised CAS policy is: (1) to improve the quality of the local audits and inspections conducted by the labs and their corporate parents, and (2) to reduce the amount of redundant inspection conducted by the site office and other DOE offices. At one NNSA lab where the site office and lab staff are working closely together, the new policy is expected to reduce the local site office inspections and audits by as much as 40%. At two other sites, however, there is little indication of any significant change. For example, despite also being ISO-certified, one lab still is undergoing both the ISO inspections and the historical DOE inspections and audits.

While there has been substantial progress in many policy areas as a result of the stronger collaboration between DOE and the National Labs, I am concerned about whether that is translating into corollary improvements in the day-to-day management of programs at the labs. I will note in the next section the significant progress that has been achieved in conducting annual strategic reviews of each National Lab. However, there are only a couple of pilot projects in which annual agreements of any sort serve as a basis for increased authority and flexibility for individual labs in day-to-day operations. For example, I am unaware of any broad areas in which program offices and labs are trying to reach greater agreement on “what” annual program goals are in order to provide labs more flexibility in “how” they do the work. That comment applies, for example, to the lack of flexibility and the required approvals on spending, milestones, and other operational activities. The CRENEL report recommended the use of an “Annual Operating Plan” as the basis for increased delegation of operating authority to the labs. I encourage program offices at DOE to experiment with steps in this direction, such as pilot agreements that can be used to test out increased operating flexibility, delegation, and accountability in specific areas.

### **Maintaining Alignment and Quality**

One of the most significant improvements the Department has made is in extending the annual strategic planning process to each of the National Labs. NNSA and the applied research labs have initiated a process patterned on that used by the Office of Science, in which each lab's senior management and the senior management of the relevant program office and other offices meet in person to discuss the strategic direction and plans for the lab. This planning process has received positive reviews from all participants, and I strongly support the approach.

Since this is a new process for some programs, the expectation is that the process will improve over time. In future rounds, for example, I hope senior management will emphasize the importance of 100% attendance at these sessions by all senior officials in the relevant program offices. Also, providing specific feedback at the sessions will enhance their value to both the DOE offices and the labs.

An important shift in attitude that has accompanied some of these sessions is a commitment to a “stewardship responsibility” by the DOE program office for its National Labs. That has been a long-standing principle in the Office of Science, but has not been universally shared by other offices, especially the NNSA. This shift is being reported as a significant and positive development that was stimulated by the new strategic planning process.

I am glad to see the continued emphasis on "managing the labs as a system" for major crosscutting initiatives. It is important to maintain focus on that concept for “Big Ideas” types of programs, like the Grid Modernization Initiative, to ensure that Federal resources are directed to critical research challenges that embody such high technical risk that the R&D funding is inherently a Federal responsibility. It is encouraging that senior officials at both DOE and the labs recognize, and are trying to manage, the risk that some individual program managers and lab researchers may want to return to more decentralized programs where they have more individual control.

The Laboratory Directed Research and Development (LDRD) pilot program at NREL is an example of the specific type of agreement that I mentioned in the previous section. It is consistent with the Commission’s recommendation that DOE should not need to review and approve each individual LDRD project. Under the pilot, the Office of Energy Efficiency and Renewable Energy (EERE) office and NREL have discussed and agreed upon both the strategic areas of focus for this year’s LDRD projects and the overall level of funding. Having agreed to those parameters, NREL is free to select its projects and start them up, while, of course, being fully accountable for those decisions. This flexibility has allowed NREL to notify LDRD award recipients well in advance, so they can plan and start their projects promptly at the beginning of the fiscal year. It is also enabling NREL to consider some innovative practices, such as making some LDRD awards throughout the year, shortening what previously has been exclusively an annual cycle.

### **Maximizing Impact**

I am encouraged to see support for some reforms and a range of pilot programs at various labs to make it faster and easier for other Federal agencies, universities, and private companies to collaborate with the labs. This is very positive, and I support continued experiments and pilots.

A revised Strategic Partnership Project (SPP) policy was issued and a second annual SPP summit was held in May 2016. There is some experimentation with an umbrella agreement, in the form of a broad contract with another agency, under which various purchase orders can be issued more easily and quickly than negotiating new contracts.

With the goal of increasing collaborations with the private sector and universities, there is increased emphasis on the use of standardized agreements, with various pre-approved optional provisions. If the potential partners select provisions from those “menus”, then the approval process is essentially automatic. One large lab reports that 60% or more of its SPPs are conducted that way.

Other new, innovative approaches being tried include innovation awards to work at the lab, such as in the Cyclotron Road program at Lawrence Berkeley National Laboratory; small business vouchers; Agreements for Commercializing Technology (ACT) pilot, umbrella Cooperative Research and Development Agreements (CRADAs); and other

experimental approaches at individual labs. All of this is very positive and should continue to be encouraged.

A CRADA pilot project being developed is still in formative stages. I do not know enough of the details of the pilot to know how big an improvement it will be, and it is not clear to me whether it will be implemented before the end of this Administration. I encourage further work on this, including by the next Administration. I also support experimenting with more extensive delegation of authority, perhaps as pilots, for labs to enter into straightforward collaborations that do not involve foreign companies or export control issues. These would be based upon an annual agreement between the DOE program office and the lab on the scale and nature of such work for the coming year.

### **Managing Effectiveness and Efficiency**

I support the continued attention that the CFOs at headquarters and the labs are devoting to increasing transparency of indirect costs. I recognize that transparency is not something that can be achieved quickly in just a couple of years with high-quality data. A good step forward is the analysis presented in the draft “Annual State of the DOE National Laboratories Report,” which builds on the analysis in the CRENEL report and extends that to five years. I encourage the Department to keep working on this in future years toward the long-term goal of increased transparency and consistent reporting of each lab’s overall overhead cost rate.

Your staff has made significant progress in better defining the long-term funding requirements for infrastructure and “excess”, or no longer needed, facilities at the labs. The collaboration between the labs and headquarters in joint working groups has been the right way to address this. In particular, the collaborative condition assessments and adaptation of the “mission dependency index” in order to prioritize capital needs are both very significant. It is important to also consult with OMB and the Congressional Appropriations Subcommittees so they understand how the data is being developed and will have confidence in the budget needs estimates.

I am disappointed that the Department has been blocked from making any significant progress in using innovative financing to address the facilities and infrastructure needs at the National Labs. Only one project has gotten through the OMB approval process since 2007. Since it appears that Federal budget resources for capital projects will continue to be limited, it is appropriate that those funds should be reserved for inherently Federal purposes, such as specialized user facilities and scientific equipment. When it comes to general-purpose office and laboratory space, I believe it ought to be possible to utilize private sector financing options as long as they meet sensible criteria. I reiterate the CRENEL recommendation that DOE should work with OMB and Congressional staff to identify the appropriate circumstances and methods by which that can be done. Perhaps a pilot project could be developed to evaluate such financing as it is used on, say, five general-purpose facilities at the National Labs.

Positive steps have been taken to improve project management policies and practices as a result of our report and other reviews. I am glad to see, for example, a more rigorous “Analysis of Alternatives” process required in project reviews. I support the NNSA’s efforts to refrain from issuing project cost estimates for large, complex projects until achieving the CD-2 baseline, at which time over 90% of the detailed engineering

work has been completed. The changes in project management are a work in progress that will require continued attention and support.

### **Ensuring Lasting Change**

Our CRENEL Commission noted that there have been over 50 previous commissions, reviews, and reports on the National Labs over the past 40 years. In an attempt to provide more continuous support to Congress, and to reduce that pace of new commissions, our report recommended that there be some type of “standing body” to which Congress and the Administration could turn when new issues arise. I understand that this is a difficult recommendation, because, in general, none of us wants yet another organization reviewing operations and generating more data calls. In addition, as Secretary, you have already asked SEAB to establish a standing task force on the National Laboratories. Since SEAB is composed of outside experts, it provides this type of resource to you in an effective manner. Finally, I also acknowledge that the effectiveness of any group like this depends critically upon the individuals in it, both in terms of their knowledge and their ability to deal with complex topics in a balanced and fair manner.

It is appealing in some ways to utilize the SEAB task force that already exists. However, I understand that it is not possible for Congress to make requests directly to SEAB, due to separation of powers restrictions. An additional question, of course, is whether future Secretaries will continue to utilize a strong SEAB and to maintain the task force on the National Labs.

Another alternative has been explored, namely whether the National Academies of Sciences, Engineering, and Medicine could establish a small standing body for this purpose, probably with a sunset provision, say in five or ten years, to see how successful it is. It would have just a few members, all with significant experience in DOE and/or the National Labs. The senior leadership of the Academies has indicated a willingness to explore this if the Congress and the Secretary are interested. The current NAS/NAPA panel that was authorized in the 2015 National Defense Authorization Act may serve as a model in some regards; however, it deals only with the NNSA labs, is a much larger panel, and involves two parent organizations.

In view of the transition to a new Administration, I recommend that the National Academies option be explored, with a charter of providing an annual report to Congress to support Congressional oversight responsibilities and of serving as a resource whenever new issues arise concerning the National Laboratories.

### **Congressional Action**

While this letter is specifically to you, Mr. Secretary, I would like to comment on the status of the recommendations that we made to the Congress as well, especially in light of the transition in Administrations. The Congressional committees that have jurisdiction over DOE and the National Labs have been supportive of the CRENEL report and its recommendations in hearings and periodic staff-level meetings since the report’s issuance. Now it is important that Congress maintain an active role of support and oversight to ensure that the recommended changes are sustained in the future, so that DOE and the National Labs work together more effectively and efficiently.



Our most important recommendations to the Congress are the following, each of which is discussed briefly in other sections of this letter:

- To establish a small standing body to serve as an informed, timely, and independent resource to the Congress in support of Congressional oversight responsibilities and when new issues arise concerning the National Labs
- To provide adequate resources to the labs to maintain their capabilities and facilities for the Nation
- To work collaboratively with DOE and OMB to determine the size and nature of the resources shortfall for facilities and infrastructure, and to develop a long-term plan to resolve it
- To work with DOE and OMB to identify appropriate situations and methods for utilizing innovative financing approaches to meet needs for upgrading general purpose office space and laboratory facilities at the National Labs

In each of these areas, I encourage the next DOE Secretary to have his or her staff initiate discussion with the appropriate committees in Congress to work together on these recommendations.

I would also like to comment briefly on some provisions in the current 2017 Energy and Water Development appropriations bills relative to our report. Both the Senate and House Subcommittees have been supportive of the CRENEL report. I appreciate the Senate language in support of the recommendations for more transparency and reduced transactional oversight and of the goal of increasing the effective level of the cap on LDRD. The requirement for a report from the Secretary within 180 days of enactment on progress made in implementing the CRENEL recommendations is a good concept, but probably should be given more time in light of the transition. I appreciate the intent of the House bill to support our call for increased transparency of laboratory indirect costs, but I believe the language is too prescriptive and would actually cause confusion and delays in meeting the long-term goal, which will take a few more years, in my view.

### **White House Action**

Our CRENEL report also included recommendations for offices at the White House, specifically OMB and OSTP. One underlying theme in these recommendations is that meaningful, lasting improvements will only come about through cooperative efforts between the White House offices and DOE. That is particularly true in areas regarding funding, such as developing a long-term strategy for dealing with infrastructure, deferred maintenance, and excess facilities.

I encourage DOE to engage with OSTP and OMB on these National Lab infrastructure issues early in the next Administration. The implications of infrastructure and facilities funding shortfalls are serious and warrant senior attention. I recommend that the next Secretary ask the senior leadership at OMB and OSTP to have their staffs work with the Department to develop a mutual assessment of the problem and a long-term funding solution to it.

A related issue that could be tackled much more quickly by the Administration and Congress is the potential use of innovative financing to meet general-purpose facility needs at the National Laboratories. The current budget rules at OMB have made this

essentially unworkable—only one project has been approved since 2007. I believe an approach to doing this could be worked out quickly if senior leadership at DOE and OMB want to do so.

## **Closing**

Mr. Secretary, I am encouraged by your commitment and the Department's overall follow-up effort on our CRENEL recommendations. Your senior team and the organization broadly, including the headquarters program offices, the site offices, and the labs, have taken our report seriously and devoted significant effort to implementing its recommendations.

It is my strong recommendation that the next Administration should continue your work in these areas and build on it to achieve the culture change that will result in a lasting strengthening of the partnership between DOE and the National Labs. Our Commission emphasized the view of the National Labs as truly a national treasure that needs to be applied to our most challenging technical issues in order to maintain the Nation's leadership in national security, basic science, and innovation.

I want to acknowledge the dedicated work and helpful support that I received from your key staff who are coordinating the follow-up effort at DOE: especially Alison Markovitz, Steven Erhart, and Adam Cohen. I thank Karen Gibson, who coordinated the work of our Commission and now of this review. I want to add my personal gratitude to my former co-chair, Dr. Jared Cohon, with whom it has been a pleasure to work. I also appreciate the perspective added during this review by some of our former fellow commissioners: Norman Augustine, Wanda Austin, Charles Elachi, Paul Fleury, Susan Hockfield, and Dick Meserve. I especially thank Susannah Howieson and Mark Taylor, the co-leads of the team at the IDA Science and Technology Policy Institute and the IDA Systems and Analyses Center, and members of their team, including Laurie Dacus, Martha Merrill, and Julian Zhu, who served the Commission during the assessment and provided support for this review.

Sincerely,

A handwritten signature in black ink, appearing to read "TJ Glauthier". The signature is fluid and cursive, with the first letters of the first and last names being capitalized and prominent.

TJ Glauthier

Former Co-Chair,  
Commission to Review the Effectiveness of the National Energy Laboratories