SECRETARY OF ENERGY ADVISORY BOARD

MEMORANDUM FOR: SECRETARY OF ENERGY

FROM: Secretary of Energy Advisory Board (SEAB)

DATE: January 26, 2016

SUBJECT: Task Force comments on the *Final Report of the Commission to Review the Effectiveness of the National Energy Laboratories*

You have charged the SEAB National Laboratory Task Force to review studies of the DOE National Laboratories as they appear and to give you advice about what your response should be to their findings and recommendations. This SEAB letter transmits the comments of its National Laboratories Task Force on the recently released report of the Commission to Review the Effectiveness of the National Energy Laboratories (CRENEL), entitled *Securing America's Future: Realizing the Potential of the DOE's National Laboratories*. That committee, co-chaired by TJ Glauthier and Jared Cohen, was formed pursuant to Section 319 of the Consolidated Appropriations Act, 2014 (Public Law No. 113-76), and was charged to evaluate the laboratories'

> "…alignment with the Department's strategic priorities, duplication, ability to meet current and future energy and national security challenges, size, and support of other Federal agencies,…the efficiency and effectiveness of the laboratories, including assessing overhead costs and the impact of DOE's oversight and management approach,…the effectiveness of the Department's oversight approach and the extent to which LDRD funding supports recruiting and retention of qualified staff[1]."

The CRENEL report is based on extensive fact finding, including significant testimony from numerous stakeholders and visits to all of the labs in the DOE complex. The final report, issued on October 28, 2015, follows the Commission's report of February 27, 2015, and contains a total of 36 recommendations across 6 primary themes: recognizing value,

[1] *Final Report of the Commission to Review the Effectiveness of the National Energy Laboratories*, Volume 1, October 28, 2015, p 1.

rebuilding trust, maintaining alignment and quality, maximizing impact, managing effectiveness and efficiency, and ensuring lasting change. For convenience, Appendix 1 of this letter provides a copy of the tabulated recommendations from the Commission's report, grouped by theme and identifying a proposed owner for each.[2]

Overall, our SEAB Task Force endorses the CRENEL report. We find the analysis and recommendations from the Commission to be consistent with the numerous prior investigations, commissions and studies that have reviewed the Laboratories over the years. The Commission's report is well aligned in areas that overlap with previous work and recommendations from our Task Force. We comment below on several specific items but, in general, we view the Commission's report as a thorough recitation of a well-told story that repeats and reinforces important recommendations to improve the efficiency of laboratory operations, planning and research outcomes, while endorsing the value, the direction and operations of the current laboratory system. As with the majority of recent reports, the Commission decries the current environment where oversight and regulation are increasingly imposed on the national laboratories and Congress and the Department have not followed-up or implemented recommendations to streamline the process and the management of the labs. Speaking to this issue, the Commission's final recommendation states,

> A standing body should be established to track implementation of the recommendations and actions in this report, and to report regularly to DOE, the laboratories, the Administration, and the Congress on progress, results, and needed corrective actions. The standing body could assist Congressional committees in developing a rational plan for future evaluations of the DOE laboratories.[3]

Later in this letter, you will find SEAB's recommendation on how the "standing body" could be created and who should establish and maintain it.

[2] The Commission appendix would be even more useful if the Commission suggested which office in DOE should be the "responsible actor" for each recommendation. Experience shows that absent direct secretarial intervention, bureaucratic interests greatly delay the implementation of meritorious proposals for change.
[3] ibid, p 63.

We first point out areas of emphasis in the Commission's report that reinforce points raised in your SEAB Task Force's report:

1. The Commission speaks to the need to reestablish the model in which the laboratories operate as FFRDCs and roles are appropriately established: "…the government is responsible for setting the "*what"* of strategic and program direction to meet the Nation's needs, while the contracted partners, along with the laboratories they manage and operate, are responsible for determining precisely "*how"* to meet the technical and scientific challenges and to carry out programs."[4] In particular, the Commission highlights the need to clearly establish where responsibility rests amongst the many stakeholders involved in the lab management and delivery system (the laboratory director and the director's leadership team, DOE Headquarters sponsoring program offices, DOE Site (or in the case of the NNSA, Field) Offices, DOE Service Centers, DOE operational oversight offices, the M&O contractor). This finding is directly aligned with the primary focus in our Task Force's report (Recommendation 1.1) to use the Laboratory Policy Council to clarify the roles and responsibilities for mission execution at the laboratories and direct the Under Secretary for Management and Performance to lead the Laboratory Operations Board in implementing these changes.

2. The Commission's report recommends a number of actions that can be taken to provide immediate change to the overly burdensome detailed management of the laboratories that is inconsistent with the philosophy of a Government Owned, Contractor Operated (GOCO) laboratory. The Commission endorses the recommendation of the Augustine-Mies Panel to eliminate the incentive portion of the M&O contract award, replacing it with a competitive fixed fee arrangement. We support this recommendation as a way to reduce complex bureaucracy, which is delivering limited operational performance leverage.

[4] ibid, p iv.

Other short term actions recommended in the CRENEL report are consistent with the SEAB Task Force's recommendation for laboratory management "experiments." The Commission suggests reestablishing local and rapid decision making for conference participation (which it deems vital to maintaining the intellectual excellence of laboratory staff), establishing a single point of control within the Department for all laboratory data requests, and removing approval authority from Support Centers, clearly articulating their *support* role.

Finally, it is worth noting that the Commission specifically recommends separating the National Energy Technology Laboratory (NETL), currently the only Government Owned, Government Operated (GOGO) laboratory in the system, into two independent parts – a standard GOCO to handle the research and development mission and a contracting office to handle the disbursement of funds to external partners.

We find merit in all these CRENEL suggestions.

3. As noted in numerous reviews and reports over the last decade, the Commission observes that the laboratories can make a greater contribution to the national economy and its competitiveness, if the laboratories have effective technology transfer processes in place. The Commission clearly articulates the larger view of what technology transfer means, commenting that in addition to traditional Cooperative Research and Development Agreements, Work for Others, or licensing activities, significant technology transfer occurs through the world class user facilities, through the maturing of early career research talent and through personnel flow and rotation between the laboratories, academia and industry. SEAB strongly endorses this view. However, we believe that CRENEL has failed to comment on an important issue on this topic. As the Interim Report by the SEAB National Laboratory Task Force suggests, there is some level of confusion and inconsistency about whether economic development and national competitiveness are part of the mission of National Laboratories. To address this directly, the SEAB report has recommended (#3.1) that you issue a policy statement that

creating value for the private sector through the use of technology transfer, research facilities and workforce is part of the National Laboratory mission. We continue to advocate this.

4. The Commission provides a thorough analysis of the rationale and current uses of Laboratory Directed Research and Development (LDRD) and finds clear benefits from the program for supporting high-risk, potentially high reward early-stage research, for exploring research avenues that may be new to the laboratory or the complex, and as a significant tool that ".. enables laboratories to develop and invest in its workforce for both the short and long term."[5] As with numerous recent reviews, including your Task Force, the Commission "…strongly endorses LDRD programs, both now and into the future, and supports restoring the cap on LDRD to 6 percent, unburdened, or its equivalent."[6]

5. The Commission notes positively your strongly articulated commitment and the steps being taken by the Department to ensure alignment of the laboratories in its strategic planning processes. The Office of Science (SC) process is described in detail:

> During this Laboratory Strategic Planning process, SC requires laboratory leaders to define the long-range visions for their respective laboratories. This information provides a starting point for discussion about each laboratory's future directions, immediate and long-range challenges, and resource needs. DOE and the laboratory leaders settle on new research directions and the expected development or sustainment of capabilities. In addition, external advisory committees provide advice on establishing research and facilities priorities; determining proper program balance among disciplines; and identifying opportunities for inter-laboratory collaboration, program integration, and industrial participation.[7]

The report further describes the effective processes SC uses to review its alignment to DOE strategy and connect both its strategic and tactical execution to its annual

[5] ibid, p 66.
[6] ibid, p 43. SEAB notes with some sadness that use of the word "equivalent" apparently conceals inability to agree on a simple and transparent method to calculate the 6% because some labs are jockeying for more complex formulae that result in greater LDRD.
[7] ibid, p 35.

Performance and Evaluation and Measurement Plan (PEMP.) The Commission calls for the adaptation of these core, successful processes to all the DOE laboratories. As you know, the SEAB Task Force made a similar recommendation and proposed that the DOE Laboratory Operations Board be charged with the task of implementing a DOE-wide effort to identify, manage, and resolve issues affecting the management, operations, and administration of the National Laboratories.

One additional point that bears mentioning is the Commission's analysis and endorsement of recommendations made by both the NRC[8] and, more recently SEAB[9], to provide a modest investment stream for science and technology development for the Environmental Management program, stating that, "Success of the cleanup effort will require significant new understanding of the science and with this understanding, development of new technology."[10]

As noted above, CRENEL calls for the establishment of a "standing body" to track implementation of the recommendations made in its report. SEAB recommends that because most of the National Laboratories are managed by their respective offices of the Under Secretaries for Science & Energy and Nuclear Security, and many of the recommendations involve management and performance, the "standing body" should be formed by the three Under Secretaries – Science & Energy, Nuclear Security and Management & Performance – with the Under Secretary for Management & Performance serving as the Chair of this standing body. The purpose of this standing body would be to track and enforce timelines and priorities to make process changes and report directly to the Secretary.

[8] National Research Council, Committee to Evaluate the Science, Engineering, and Health Basis of the DOE's Environmental Management Program, *Improving the Environment: An Evaluation of DOE's Environmental Management Program*," (Washington DC: NRC, 1995), 21.
[9] SEAB, *Report of the Task Force on Technology Development for Environmental Management*, (Washington, DC: DOE, 2014);
[10] *Final Report of the Commission to Review the Effectiveness of the National Energy Laboratories*, Volume 1, October 28, 2015, p 59.

We also note a few points where we feel that the CRENEL report could have been a bit more assertive in its recommendations.

1. The Congressional charge to the Commission implicitly calls for a judgment about whether the size of the DOE national laboratory network is too big, too small, or just right given the current and future technology needs of the country in DOE's mission areas of responsibility: science, energy, national security, and environmental management. The Commission does not directly address this central question but their implicit answer is that the DOE national labs are doing their job, their effectiveness and efficiency is impaired by over regulation, and the amount of public resources is "just right" although at several points there is a hint that more resources would be welcome. This central conclusion would be more convincing if the Commission had examined a range of different organizational arrangements, quite different from the current structure, and compared the pros and cons of each.

2. The CRENEL report also does not offer a timeline for its recommendations to be implemented. Because many of the recommendations are similar to the ones offered by the SEAB Task Force, we suggest that you use the timeline offered by the SEAB Task Force report.

In summary, we find that the CRENEL Commission report provides additional support for the numerous findings and recommendations that have already been voiced about the value and performance of the DOE national laboratories. The Commission also repeats and underscores the many recommendations that have been made to streamline the management and oversight of the laboratories, thus making them more efficient and of greater value to the scientific and technological strength of the country. It is up to you and your successors to see that the meritorious suggestions for change are put into place.

Appendix 1 Summary of the Commission's Recommendation[11]

Section	Theme	Section	Theme
2	Recognizing Value	5	Maximizing Impact
3	Rebuilding Trust	6	Managing Effectiveness and Efficiency
4	Maintaining Alignment and Quality	7	Ensuring Lasting Change

Table 4. Responsible Actors for Each Recommendation and Cross-References to Volume 2

Volume 1 Chapter & Section Reference	Rec. No.	Recommended Action	Responsible Actor(s)	Volume 2 Chapter & Section Reference
2.C	1	The Administration and Congress should recognize the value of the National Laboratories and provide the necessary resources to maintain their capabilities and facilities. Congress should also develop a more orderly process of reviewing the laboratories.	Administration and Congress	**1.E**
3.A.1	2	Department of Energy (DOE) and the laboratories must work together to restore the ideal Federally Funded Research and Development Center (FFRDC) relationship as one of trust and accountability. DOE should delegate more authority and flexibility to the laboratories and hold them accountable. The laboratories must be more transparent with DOE about their activities.	DOE and Laboratories	**2.C**
3.A.1	3	DOE and each laboratory should jointly develop an annual operating plan, with agreements on the nature and scope of the laboratory's activities, including goals and milestones. DOE should then provide increased flexibility and authority to the laboratory to implement that plan.	DOE and Laboratories	**2.C**
3.A.1	4	To improve DOE's ability to manage the laboratories, DOE should implement greater leadership and management development for its Federal workforce, including multi-directional rotational assignments.	DOE	**2.C**
3.A.1	5	DOE should separate the National Energy Technology Laboratory's (NETL) research and development (R&D) function from its program responsibilities. Consideration should be given to converting the new, research NETL into an FFRDC. NETL should increase its interactions with universities.	DOE and Congress	**2.C**
3.A.2	6	DOE should abandon *incentive* award fees in favor of a fixed fee set at competitive rates with risk and necessary investment in mind. DOE should also adopt richer set of incentives to motivate sound management.	DOE	**2.C**

[11] Reproduced directly from Table 4 of the *Final Report of the Commission to Review the Effectiveness of the National Energy Laboratories*, Volume 1, October 28, 2015.

Volume 1 Chapter & Section Reference	Rec. No.	Recommended Action	Responsible Actor(s)	Volume 2 Chapter & Section Reference
3.B.1	7	DOE should give the laboratories the authority to operate with more discretion whenever possible. For non-nuclear, non- high-hazard, unclassified activities, DOE should allow laboratories to use Federal, State, and national standards in place of DOE requirements. DOE should review and minimize approval processes.	DOE	**3.G**
3.B.1	8	DOE should modify its processes for developing directives, orders and other requirements to get more input on the benefits and impacts of the proposed requirements. When developing new requirements, DOE should use a risk-based model, ensuring the level of control over an activity is commensurate with the potential risk.	DOE	**3.G**
3.B.2	9	DOE should focus on making the use of Contractor Assurance System (CAS) more uniform across the laboratories. DOE local overseers should rely on information from the CAS systems, with appropriate validation, as much as possible for their local oversight. The quality of CAS can be increased through peer reviews for implementation and effectiveness.	DOE	**4.D**
3.B.2	10	The role of the site office should be emphasized as one of "mission support." The site office manager should be responsible for the performance of the site office; all staff, including the Contracting Officers, should report to the site office manager. DOE should devote more effort to professional development of field staff.	DOE	**4.D**
3.B.2	11	DOE should clarify the role and authority of the support centers. Wherever approval authority resides with a support center, DOE should remove it and reinstate it at the site office or DOE headquarters.	DOE	**4.D**
3.B.3	12	All stakeholders should make maximum use of local assessments (performed by site offices and laboratories), with appropriate verification, to reduce duplicative assessments and burden on the laboratories.	DOE and External Auditors	**5.C**
3.B.3	13	DOE should establish a single point of control within the Department for all laboratory-directed data requests.	DOE	**5.C**
3.B.4	14	DOE should increase the size of funding increments by consolidating budget and reporting (B&R) codes, extending timelines and minimizing milestones for each funding increment and institutionalizing mechanisms to move money between B&R codes for related research areas.	DOE	**6.D**
3.B.4	15	Congress should repeal Section 301(d) of the FY 2014 Consolidated Appropriations Act as soon as feasible to remedy the transactional burden it creates for the Office of Management and Budget (OMB), DOE Headquarters, and the laboratories.	Congress	**6.D**
4.A	16	Other DOE program offices should adapt the processes that DOE's Office of Science has in place for guiding and assessing the alignment of the laboratories under its stewardship with DOE's missions and priorities.	DOE	**7.E**
4.B	17	The processes that Office of Science has in place for assessing the quality of the research being done by its laboratories and for assessing the quality of its research portfolio should be adapted by the other program offices.	DOE	**7.E**
4.B	18	There must be reconsideration of the travel restrictions to enable conference participation at levels appropriate to the professional needs of the existing scientific staff and to attract the highest quality staff in the future. The Commission is encouraged by DOE's recently revised guidance on conference-related activities and spending.	DOE and OMB	**7.E**
4.C	19	The Commission strongly endorses Laboratory Directed Research and Development (LDRD) programs, both now and into the future, and supports restoring the cap on LDRD to 6 percent unburdened, or its equivalent. The Commission recognizes that, in practice, restoring the higher cap will have the largest impact on the LDRD programs of the National Nuclear Security Administration laboratories.	Congress	**8.D**
4.D	20	DOE should manage its laboratories as a system having an overarching strategic plan that gives the laboratories the flexibility to pursue new lines of inquiry. Once the research has sufficiently mature, DOE should provide strategic oversight and guidance to coordinate and potentially consolidate their programs.	DOE	**7.E**

Volume 1 Chapter & Section Reference	Rec. No.	Recommended Action	Responsible Actor(s)	Volume 2 Chapter & Section Reference
4.D	21	Congress should recognize that the capabilities currently housed within the NNSA laboratories are essential to the Nation. Maintaining these capabilities in separate and independent facilities should continue.	Congress	**7.E**
5.A	22	DOE should establish techniques to make the Strategic Partnership Projects process more efficient.	DOE	**9.E**
5.A	23	DOE should support efforts to strengthen the Mission Executive Council.	DOE	**9.E**
5.B	24	DOE and its laboratories should continue to facilitate and encourage engagement with universities through collaborative research and vehicles such as joint faculty appointments and peer review.	DOE and Laboratories	**10.C**
5.C	25	DOE and the laboratories should fully embrace the technology transition mission and continue improving the speed and effectiveness of collaborations with the private sector. Innovative transfer and commercialization mechanisms should be pursued and best practices in other sectors should be examined.	DOE and Laboratories	**11.E**
5.C	26	DOE should determine whether the annual operating plans proposed by the Commission could qualify as the "agency- approved strategic plan" under the Stevenson-Wydler Technology Innovation Act of 1980, and the Fast-Track Cooperative Research and Development Agreement Program. If not, Congress should amend the law accordingly.	DOE and Congress	**11.E**
5.C	27	Laboratories should pursue innovation-based economic development by partnering with regional universities.	Laboratories	**11.E**
5.D	28	DOE and Congress should continue to support user facilities at the DOE laboratories. External advisory groups should continue to be used to decide which facilities to build and how to upgrade existing facilities.	DOE, Administration, and Congress	**12.C**
6.A	29	DOE should continue implementing the Institutional Cost Report (ICR) as a method for tracking indirect costs across the laboratories, and encourage peer reviews to help mature the ICR as a tool for DOE, the laboratories, and other stakeholders.	DOE	**13.E**
6.A	30	DOE should provide greater transparency into laboratory indirect costs and publish an annual report of the overhead rates at each individual National Laboratory.	DOE	**13.E**
6.B	31	DOE should consider whether a capital budget will better serve its internal facilities and infrastructure budgeting and management needs.	DOE	**14.D**
6.B	32	DOE and the laboratories should continue efforts to improve facilities and infrastructure by halting the growth in deferred maintenance and speeding up the deactivation and decommissioning of excess facilities. DOE should work with Congress and OMB to agree upon the size and nature of the resources shortfall for facilities and infrastructure, and to develop a long- term plan to resolve it through a combination of increased funding, policy changes, and innovative financing.	DOE, Laboratories, Congress, and OMB	**14.D**
6.B	33	DOE, the laboratories, Congress, and OMB should actively work together to identify appropriate situations and methods for utilizing innovative financing approaches, such as third-party financing, enhanced use leases, and other methods, including State funding, gifts, and leveraging partnerships with other Federal agencies.	DOE, Laboratories, Congress, and OMB	**14.D**
6.C	34	DOE should maintain focus on increasing institutional capability and imposing greater discipline in implementing DOE project guidance, which is currently being incorporated into its DOE directive 413.3 B. There should be more peer reviews and "red teams" within DOE.	DOE	**15.G**
6.C	35	The Commission supports the recent Secretary of Energy Advisory Board Task Force recommendation to put more resources into science and technology development for the EM program given the technical complexity of its projects.	DOE, Administration, and Congress	**15.G**
7.C	36	A standing body should be established to track implementation of the recommendations and actions in this report, and to report regularly to DOE, the laboratories, the Administration, and the Congress. This body could assist Congress in developing a rational plan for future evaluations of the DOE laboratories.	DOE, Administration, and Congress	**16.D**