# Testimony

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## Commission to Review the Effectiveness of
## The National Energy Laboratories

## Senate Energy and Water Appropriations Subcommittee

## October 28, 2015

Good afternoon, Chairman Alexander, Ranking Member Feinstein, other Senators and staff of the Subcommittee, and others interested in the National Energy Laboratories. We are pleased to be here to present the final report of the Commission to Review the Effectiveness of the National Energy Laboratories. Your Subcommittee created the Commission in January of 2014, in the FY2014 Omnibus Appropriations Act.

The two of us have served as the co-chairs of the Commission for almost 18 months. We were privileged to serve with an outstanding group of seven other commissioners with strong backgrounds in the science and technology enterprise of the nation. We are pleased that this is a consensus report. We received excellent cooperation and support from the Department of Energy, all the relevant Congressional committees, the White House, the National Laboratories themselves, and many others.

During the course of our work, we visited all 17 of the National Laboratories, heard from 85 witnesses in monthly public hearings in the field and here in Washington, DC, and reviewed over 50 previous reports on this topic from the past four decades.

We have titled our report, ***"Securing America's Future, Realizing the Potential of the National Energy Laboratories."*** Our overall finding is that the national laboratory system is a unique resource that brings great value to the country in the four mission areas of the Department of Energy: nuclear security, basic science R&D, energy technology R&D, and environmental management.

For example, the National Labs have four of the world's fastest supercomputers, which are helping the nation extend the lifetimes and safety of our nuclear warheads without nuclear testing. In basic science, their world-class particle accelerators, light sources and other user facilities host over 30,000 researchers every year from our universities and industrial partners. And in energy technology R&D, the labs have played an important role in helping to develop the

innovations that have led to the nation's shale gas revolution and surge in wind and solar energy.

However, our National Lab system is not realizing its full potential. Our commission believes that can be changed. We provide 36 recommendations that we believe, if adopted, will help the labs to become more efficient and effective and have even greater impact, thereby helping secure America's future in the four mission areas of the Department of Energy.

We'd like to highlight a few of our major findings and recommendations, and then would be happy to address any others of particular interest to you.

Our most fundamental conclusions deal with the relationship between the Department of Energy and the National Labs. We find that the trusted relationship that is supposed to exist between the federal government and its National Labs is broken and is inhibiting performance. We note that the problems come from both sides, the Labs and DOE.

We want to be clear that this situation is not uniform across all of the Labs. In particular, the Labs that are overseen by the Office of Science generally have much better relationships with the DOE than do those in the other program offices.

Many of our recommendations address this fundamental problem. We conclude that the roles need to be clarified and reinforced, going back to the formal role of the labs as Federally Funded Research and Development Centers for the Department of Energy. Under this model, the two parties are supposed to operate as trusted partners in a special relationship with open communication.

DOE should be directing and overseeing its programs at a policy level, specifying *"what"* its programs should achieve. The Labs, for their part, should be responsible for determining *"how"* to carry them out, and then executing those plans. In doing so, the Labs should have more flexibility than they do now to implement those programs, without needing as many approvals from DOE along the way. In return, of course, the Labs must operate with transparency, and be fully accountable for their actions and results.

This flexibility, in our view, should be expanded significantly in areas such as:

- The ability to manage budgets with fewer approval checkpoints,
- Managing personnel compensation and benefits,
- Entering into collaborations with private companies, including small businesses, without having each agreement individually approved and written into the lab's M&O contract with DOE,
- Building office buildings on sites that are not nuclear, not high hazard, and not classified,

- Conducting site assessments that are relied upon by DOE and others to minimize redundant assessments, and
- Sending key personnel to professional conferences to maintain DOE's work in leading edge science and for their professional development.

In your charge to us, you asked us to examine whether there is too much duplication among the National Labs. We looked into this in detail, and have included two recommendations in this area. The first regards the NNSA laboratories, where we conclude that it is important to the nation's nuclear security that the two design laboratories' capabilities continue to be maintained in separate and independent facilities.

The second recommendation in this area regards the way the Department manages through the life cycle of R&D topics. In our view, they do a good job at encouraging multiple lines of inquiry in the early, discovery stages of new subjects. And they are good at using expert panels and strategic reviews to manage mature programs. However, at the in-between stages, the Department needs to assert its strategic oversight role earlier and more forcefully to manage the laboratories as a system in order to achieve the most effective and efficient overall results.

We want to acknowledge the progress currently being made in some of these and other areas by the current Secretary of Energy and the current Directors of the National Laboratories. We encourage them to continue their efforts, and we encourage your Subcommittee and others in Congress to support them and future Administrations in this direction.

Let us turn to our recommendations for how we believe Congress can help to improve the performance of the National Labs. We would like to cite three here in our opening statement:

- First, we conclude that Laboratory-Directed Research and Development, LDRD, is vitally important to the labs' ability to carry out their missions successfully, and we recommend that Congress restore the cap on LDRD funding to the functional level that it was historically, up until 2006.
- Second, there does seem to be a serious shortfall in funding for facilities and infrastructure at the National Labs. However, the scope and severity of that shortfall are not well defined. We recommend that the Congress work closely with DOE and OMB to agree, first, upon the size and nature of this problem, and then, upon a long-term plan to resolve it, through a combination of additional funding, policy changes, and innovative financing.
- Third, since Continuing Resolutions have become more frequent, we recommend dropping provision 301(d) from your appropriations bill and returning to the restrictions that were in place prior to 2012 for operating under CRs. The previous requirements were already stringent, and the

new ones have made operations at DOE and the National Labs much more restrictive and inefficient.

In the interest of time, let us finish by highlighting our final recommendation. We found that in the past four decades there have been over 50 previous commissions, panels, and studies on the National Labs. It is our view that Congress and the Administration would be better served by some sort of standing body of experienced people who could provide perspective and advice on issues relating to the National Laboratories, without having to create new commissions or studies every time. Such a group could potentially be housed at the National Academies, or report to the President's Council of Advisors on Science and Technology (PCAST), or be somewhere else that would provide the independence that Congress requires.

On behalf of our nine commissioners, we want to thank you for this opportunity to serve the country on this important commission. We hope our work will be helpful and we are happy to answer questions and to discuss our findings and recommendations.