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NOTES:

To enlarge upon what my colleagues have shared, I am going to focus on three topics. First, I will add some detail regarding the dangers and costs of expanded plutonium pit production. Second, I will discuss the dangers and costs of the W87-1 warhead, which will require the new-design pits. Third, I will address further whether it is wise to follow the NNSA's preferred course of action on expanding plutonium pit production and developing the W87-1 warhead.

Expanded Pit Production

The lifecycle cost of the 2-site option – using Los Alamos Lab in NM and the Savannah River Site (SRS) in SC - is more than \$43 billion dollars, according to NNSA's preliminary engineering assessment in May 2018. Moreover, NNSA placed only a 20% confidence rating on this number in that report. The general consensus is: that already-stunning number is likely to rise. Notably, the report says "the path forward should not be decided solely on lowest cost, which could constrain pit production to a single facility at a single site." However, Tri-Valley CAREs believes that cost should matter.

To use an analogy, NNSA wants to run with plutonium before it learns to walk properly. The most sane approach would be for NNSA to solve the problems facing PF4 at Los Alamos, which include the safety violations Stephen mentioned and also the simple fact that Los Alamos wants to cram projects other than plutonium pit production into the same floor space in PF4. These are serious problems, and their full resolution should be step one.

Another financial and potential safety danger is that the 2-site plan calls for SRS to produce at least 50 pits per year. This will be a brand new mission for SRS. The site has no expertise in pit production. In fact, in a recent meeting I was told that SRS was bringing in retired Rocky Flat workers to help. And SRS is depending as well on Los Alamos staff to develop their knowledge. There are only a handful of pit production experts at Los Alamos – and they are sorely needed to solve the production safety issues at Los Alamos. What could go wrong?

To partially answer this question, the DoD commissioned the Institute for Defense Analyses to conduct an independent study of NNSA's pit production plans. The report summary is unclassified. The Institute for Defense Analysis concluded that there is no historical precedent to support the notion that NNSA can successfully accomplishing a mission of this size and scope in the allotted time frame. Further, the report concluded

that no option, including the 2-site project, can meet the budget and schedule that NNSA claims.

How Long Do Pits Last?

This is one of a number of key questions regarding the “need” for expanded pit production.

Livermore and Los Alamos have decades of data using archived pits and pit material as well as additional plutonium samples they have put through “accelerated aging” studies to help answer the question of a pit’s effective “lifetime” in the stockpile. JASON, an independent scientific advisory group, was asked by Congress to review this data and produce a report on the effective lifetime of plutonium pits. The report, which was released in 2007, said that the effective lifetime of pits was 85 to 100 years *or more* at a minimum - and the report stated the JASON did not attempt to place a maximum age on pit lifetimes.

It should be further noted that subsequent to the JASON study, LLNL has published additional data on plutonium pit lifetimes in a December 2012 paper titled, “Plutonium at 150 years: Going Strong and Aging Gracefully.”

JASON presently is conducting an update to its 2007 study, which is largely thanks to Chris Hanson, here on the panel. That study may be released as early as 2020.

The W87-1 Warhead

Another of the key questions is “what is expanded pit production for?” The answer is that there are not now and have not been for a decade or more, any “orders” for pits for existing weapons already in the stockpile. Expanded pit production is intended for novel warhead designs.

Therefore, I am going to turn now to discuss the warhead that requires new-design plutonium pits. Or, to put it another way, what do we get for much of that \$43 billion cost of expanded pit production? For the W87-1 there will be a fully new warhead design (it is not a refurbishment or life extension program).

LLNL senior weapons designers have called this weapon a “mashup” of experimental technologies. This weapon is distinctly different in another way: it has not been explosively tested like all of the other warheads in our arsenal.

Together, this adds up to “scientific uncertainty” at best. At worst, the future congress and administration officials could be confronted with an unacceptable choice: put a weapon into the stockpile that is less reliable than the design it replaces or resume underground nuclear explosive testing at some yield.

For those here today who are younger than me, the US stopped underground testing in 1992. To return to testing would unleash a very dangerous accelerant to the global nuclear arms race. Other countries, such as India, Pakistan, China, and Russia, would almost certainly follow.

Conclusion:

- 1) We have the option to not do this. Expanded plutonium pit production is a plan. The W87-1 is in early stages of design, Neither of these things are “done deals”. The time for change is ripe.
- 2) As you’ve heard from this panel today, there are superior alternatives.
- 3) To “slow down” and better consider the options, 3 things are crucial:
 - a) The House NDAA bill should be supported in the conference committee. (Refer to Tri-Valley CAREs op-ed in The Hill on the NDAA.)
 - b) The National Environmental Policy Act (NEPA) must be followed. Presently Tri-Valley CAREs and two colleague organizations (Savannah River Site Watch and Nuclear Watch NM) have issued a demand that NNSA conduct a nation-wide, programmatic environmental impact statement with public hearings held across the country before moving forward to expand pit production. The programmatic review would encompass both proposed production sites - and also transportation risks, waste disposal site(s), and more. If NNSA refuses to fully comply with NEPA, my organization and its partners are preparing litigation.
 - c) We need to inform the public about the dangerous consequences of these decisions. Members of the public, particularly around the all of affected locations, have a right to be part of the decision process. Tri-Valley CAREs has informational materials up on its website. And, we will continue to hold congressional briefings like this – as well as public meetings – during this decision-making period.