



Los Alamos Study Group

Nuclear Disarmament • Environmental Protection • Social Justice • Economic Sustainability

LOS ALAMOS' PROPOSED \$6 BILLION PLUTONIUM FORTRESS

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The National Nuclear Security Administration (NNSA) proposes to build an additional large nuclear facility at Los Alamos National Laboratory (LANL) for storing, processing, and handling plutonium, primarily for the purpose of manufacturing large quantities of plutonium warhead cores (“pits”).

The shocking realities behind this circa \$6 billion (B) capital project beggar belief and can be only touched upon here. If this short summary succeeds in piquing your interest we strongly urge you to glance through one of our recent presentations, where many references and links to further information are also provided.¹

In its financial scale this huge project exceeds *by roughly a factor of ten* any prior government project in New Mexico history (except the interstate highways). The political consequences for New Mexico are incalculable.

The environmental consequences would be great as well. Safe operations have never been achieved at any comparable facility and cannot be assumed, especially given what we strongly suspect will be turbulent years ahead.

This building and related construction would transform LANL into a plutonium manufacturing complex, needlessly “upgrade” and replace thousands of warheads in the decades ahead, generate tens of billions of dollars of long-term income for private corporations, and ramp up the qualitative nuclear arms race underway with Russia.

This project may be a bridge too far for NNSA. After a year of delay occasioned by our recent litigation, the House of Representatives is again questioning its necessity and urgency relative to other NNSA projects. There are also questions in the Senate and in the Administration. Most experienced observers believe the NNSA will not be able to complete all of its new, concurrent multi-billion-dollar projects – especially given the growing fiscal uncertainty.

After initially proposing a simpler facility, NNSA now envisions “the nation’s storehouse of plutonium.”

This project was first announced in 1999 as a proposal to replace part of an old, partially-disused, industrial-scale nuclear laboratory at LANL called the Chemistry and Metallurgy Research (CMR) building. Senator Bingaman’s office described the proposal as not a “Taj Mahal, but a scaled-down, streamlined facility that would meet the needs of the lab at a lower cost than they are met now.”

Planning documents written over the following two years said LANL’s needs could be met by a \$375 million (M) facility capable of handling no more than 900 grams of plutonium. No new nuclear weapons were planned then, and there was (and remains) no need to produce pits for the stockpile.²

In 2002 NNSA’s plans changed dramatically. Now, the new facility would not just maintain, but tremendously *increase*, the plutonium processing, manufacturing, quality control testing, and plutonium storage capacity at LANL. No one checked whether the site was seismically, geologically, or topographically appropriate for this grand plan. No one counted the cost, and no one thought nuclear safety standards might be challenging to meet.

By early 2003 what was now formally called the “CMR Replacement” (CMRR) Project had grown into a proposal for two large buildings, to be connected by tunnels to each other and to the existing plutonium building, “PF-4”.

¹ Please see http://www.lasg.org/CMRR/CMRR_talk_LosAlamos_19July2011.pdf. A more detailed recent review can be found at http://www.lasg.org/CMRR/Mello_Reasons_to_Delay_CMRR-NF_22May2011.pdf. Still more extensive references, analyses, and news accounts are accessible through http://www.lasg.org/CMRR/open_page.htm, and summary analyses and references are available in our affidavits and federal court testimony at http://www.lasg.org/CMRR/Litigation/CMRR-NF_litigation.html.

² Since then, confidence in pit longevity has only increased. NNSA and the elite JASON advisory group have stated that pits will last a century or so without replacement. No replacements are currently authorized or planned. NNSA maintains a stockpile of thousands of extra pits, just in case. A few stockpile pits have been produced as a technology demonstration, but even this very small (and gratuitous) production run is coming to an end this year.

The simpler and less expensive of the two was a support building called the Radiological Laboratory, Utility, and Office Building (RLUOB). RLUOB construction began in 2006 and is almost complete today. RLUOB is expected to finally cost in the neighborhood of \$363 M – \$164 M for the building and, quite surprisingly, \$199 M for the 3-year outfitting process.

The second proposed building is the CMRR Nuclear Facility (CMRR-NF). It would be built mostly underground and would receive, store, process, test, and ship tons of highly toxic, pyrophoric plutonium – “the nation’s storehouse,” as NNSA recently described it. Since 2003 CMRR-NF has more than doubled in size to 406,000 sq. ft., in which – according to NNSA – only 10% or so would actually be used for programs. All the rest is required for mechanical equipment, access, and the massive bunker-like structure itself.

CMRR-NF is being designed under the so-called “hotel concept,” meant to provide wide latitude for future, yet-to-be-specified, missions. This requirement has imposed harsh structural constraints, significantly raising CMRR-NF’s cost.

The CMRR site has very challenging seismicity, geology, and topography.

In 2007 LANL and its consultants published an updated seismic analysis based on long-standing LANL research, showing significantly greater accelerations and earthquake frequencies than previously admitted – as great as those experienced at the Fukushima Daiichi nuclear facility or even greater.

The rather dire engineering significance of the 50-60 ft. thick layer of unstable volcanic ash beneath the proposed building was also finally recognized at this time. At present, the only approved engineering concept for this building involves digging down below this layer to a depth of 130 feet and replacing it – entirely – with solid concrete.

In a parallel development, NNSA and LANL long resisted incorporating certain nuclear industry safety requirements into CMRR-NF design – claiming for example that CMRR-NF might be infeasible if its ventilation system had to be designed to survive an earthquake. After agreeing to standards proposed by the Defense Nuclear Facilities Safety Board (DNFSB) in 2009, NNSA and LANL are now contesting those standards again.

The CMRR-NF site lies on a narrow mesa tightly sandwiched between operating facilities and a key access road used by more than 4,000 LANL employees daily. Several other large construction projects are also planned nearby in more or less the same time frame. CMRR-NF construction will negatively impact LANL operations for at least a decade.

CMRR costs have risen by a factor of about fifteen, with no clear upper end in sight.

In November 2010, NNSA estimated the cost of CMRR-NF as \$3.7 to \$5.9 billion. The higher, more credible estimate is 15 times the cost estimated in 2001. Costs are likely to rise further if the decade-long construction process proceeds.

NNSA does not expect to produce an accurate cost and schedule, or a near-complete design, until at least a year from now, although construction could begin as early as October of this year.

Current plans are to complete final design during construction, using a concurrent “design-build” process that is normally used for routine, simple construction projects but not for unprecedented, huge, complex ones. The U.S. has not successfully completed a large plutonium facility since PF-4 was built in 1978.

Can NNSA complete and operate CMRR-NF?

According to the Joint Operating Environment (“JOE”) reports of the Joint Chiefs of Staff and hundreds of other official and expert studies here and abroad, the years immediately ahead will be marked by a significant decline in the quantity of transportation fuels available in most countries, with sharply-ramifying economic and social effects. While these subjects are far beyond the scope of this summary, we believe NNSA’s ability to successfully complete very large, complex projects such as CMRR-NF will be deeply challenged.³

CMRR-NF is already competing for dollars, expertise, skilled workers, and management attention, with other NNSA capital and program priorities. These include warhead surveillance and refurbishment and other construction projects such as the Uranium Processing Facility (UPF) in Tennessee. CMRR-NF threatens other NNSA projects.

CMRR-NF – a poorly thought-out, much-delayed, and troubled project – is not needed for any NNSA mission, including the long-term maintenance of a very large, powerful, diverse nuclear stockpile. It should be canceled.

³ See slides 38-45 at http://www.lasg.org/CMRR/CMRR_talk_LosAlamos_19July2011.pdf. Our understanding of these topics has been honed by careful study and debate at dozens of Study Group public meetings over the past five years.