IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF NEW MEXICO

THE LOS ALAMOS STUDY GROUP,

Plaintiff,

v. Case No. 1:10-CV-0760-JH-ACT

UNITED STATES DEPARTMENT OF ENERGY; THE HONORABLE STEPHEN CHU, in his capacity as SECRETARY, DEPARTMENT OF ENERGY; NATIONAL NUCLEAR SECURITY ADMINISTRATION; THE HONORABLE THOMAS PAUL D'AGOSTINO, in his Capacity as ADMINISTRATOR, NATIONAL NUCLEAR SECURITY ADMINISTRATION,

Defendants.

THIRD AFFIDAVIT OF GREGORY MELLO

State of New Mexico)
) ss.
County of Bernalillo)

Gregory Mello, under penalty of perjury, hereby declares as follows this 14th day of January 2011:

1. I am a member and the Executive Director of the Plaintiff, Los Alamos Study Group ("Plaintiff" or "LASG"). I make this affidavit in support of Plaintiff's Motion for Preliminary Injunction.

2. My background and qualifications were described in ¶¶ 2-5 of my first Affidavit.

3. I make this affidavit to present pertinent facts concerning the following issues relative to defendants' Chemistry and Metallurgy Research Replacement (CMRR) project.

A. Defendants have been implementing their selected CMRR alternative, including the

CMRR Nuclear Facility (CMRR-NF), since February 2004, have undertaken extensive contractual obligations and construction in support of CMRR-NF since 2005, and are doing so now.

B. Certain statements in the declarations of Mr. Herman LeDoux and Mr. Roger Snyder require clarification to avoid misleading the court. In particular, the relief sought by plaintiff in no way affects national security.

C. Potential alternatives to CMRR-NF can be named which, if analyzed, may be found to meet defendants' mission needs more effectively at lower cost, environmental impact, and management risk than CMRR-NF.

D. From a value engineering perspective the value of CMRR-NF has declined dramatically, suggesting a hard look at alternatives is warranted.

E. The proposed Supplemental Environmental Impact Statement (SEIS) could never provide objective analysis of all reasonable CMRR-NF alternatives, as required by NEPA.

F. An objective National Environmental Policy Act (NEPA) analysis of CMRR-NF and its alternatives is impossible without certain prior actions by defendants.

A. Defendants began implementing their selected CMRR alternative, including CMRR-NF, in February 2004, have undertaken extensive contractual obligations and construction in support of CMRR-NF since 2005, and are doing so now.

4. From the beginning the CMRR project has been *planned*, *analyzed* under the National Environmental Policy Act (NEPA), *designed*, *funded*, and *built* as a single integrated project. Although this lawsuit has focused on the CMRR Nuclear Facility (CMRR-NF), much of the Radiological Laboratory, Utility, and Office (RLUOB) component has no other purpose than to support the planned CMRR-NF. As Los Alamos National Laboratory (LANL) CMRR Project

Director Dr. Timothy Nelson said in 2006 after RLUOB construction had begun, "...[A] good way to look at this building [RLUOB] is, it's actually a support building for the major building of the [N]uclear [F]acility."[1]

5. The CMRR-NF comprises at least 90% of the total CMRR project cost, and would cause most of the project's environmental impacts. CMRR-NF is also the project component that, after September 2009, increased dramatically in scale, environmental impact, and cost from what defendants described in their 2003 environmental impact statement (EIS) and chose in their 2004 Record of Decision (ROD). Many contractual obligations and a great deal of construction, procurement and installation of specialized equipment began in 2005 and have continued ever since – all tailored specifically for the future CMRR-NF and unnecessary without it. Most CMRR project investment to date supports the planned nuclear laboratories in CMRR-NF, which will handle tons of plutonium, and not the radiological laboratories in RLUOB, which will handle only grams or an equivalent amount in other radionuclides. Thus, CMRR project execution has caused and is causing environmental impacts and irretrievable resource commitments in support of a future CMRR-NF.

6. Without detailed information about the RLUOB project which is not public, it is impossible to know exactly which of the pending investments at RLUOB relate exclusively to the RLUOB building and its functions. Those which do can certainly be completed as planned with or without CMRR-NF. While RLUOB has approximately doubled in scale and cost since first described to Congress in 2003,[2] its descriptions in the 2003 EIS and 2004 Record of

[1] National Nuclear Security Administration (NNSA), CMRR Public Meeting, September 19, 2006, p. 26 [p. 6 of oral transcript].

[2] RLUOB has increased in scale from an estimated 90,000 gross sq. ft. in 2003 to an actual 208,125 sq. ft. today. The original CMRR cost estimates were for the project as a whole. Under the assumption that roughly one-third of these costs could be attributed to RLUOB, the 2003 total estimated cost for RLUOB was $166 million, vs. $363

Decision (ROD) are too vague to invite comparison. Most RLUOB construction impacts are in the past. It is with respect to the Nuclear Facility ("NF") that obvious, egregious NEPA violations have occurred and are occurring, which is why plaintiff has focused on this structure. Much of the RLUOB construction is however compelled by defendants' prior, patent commitment to construct the CMRR-NF.

7. The CMRR project was preceded by a decade of increased investment in the CMR building. This began in 1990, when funds for needed safety upgrades were conveyed in a "Phase 1" subproject of a nation-wide facilities upgrade line item. In 1995, with the advent of a more ambitious "Phase 2" effort, the CMR Upgrades Project was made into a stand-alone project (95-D-102). The CMR upgrades were designed to provide 20 to 40 additional years of CMR service and included extensive structural modifications to meet seismic standards and many other upgrades.[3] The CMR Upgrades Project did not upgrade CMR wings 2 and 4 which were "not required for current missions."[4] These wings were later found to be underlain by an active earthquake fault. The seismic upgrades were never executed and the CMR Upgrades Project was terminated in 2001 in favor of CMRR.

8. The CMRR project began with a January 1999 strategy for managing risks in the Chemistry and Metallurgy Research (CMR) building at LANL. In mid-April 1999 Senator Jeff Bingaman announced that he would seek $5 million in additional funding to begin planning for a new plutonium facility at LANL, which became CMRR. His spokesperson said "This would not be a Taj Mahal but a scaled-down, streamlined facility that would meet the needs of the lab at a

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million today. NNSA FY2004 Congressional Budget Request (CBR) pp. 347, 349; NNSA FY2011 CBR p. 227-228 (add RLUOB, $164 million & REI ["RLUOB Equipment Installation"], $199.4 million).

[3] DOE, FY1999 CBR, CMR Upgrades Project 95-D-102 (no pagination).

[4] "Environmental Assessment for the Proposed CMR Building Upgrades at the Los Alamos National Laboratory," February 4, 1997, DOE/EA-1101, pp. vi, 13.

lower cost than they are met now."[5] Initial CMRR project planning began sometime after this date using LANL operating (i.e. program) funding.

9. Prior to the 2004 ROD defendants relied upon this January 1999 strategy "decision" to justify CMRR line item funding requests to Congress. These requests resulted in appropriations of $27 million for FY2002 through FY2004 (not counting operational funds expended from FY1999 through FY2001 on planning and conceptual design). This was a significant (pre-NEPA) commitment to the project, spanning six fiscal years. During this period defendants scrapped a previously approved, designed, and funded plan to upgrade the existing CMR building to improve safety, with deleterious safety consequences that defendants now use to justify a grandiose CMRR-NF.[6] That plan would have cost approximately 5% of the presently estimated cost of the CMRR project, i.e. $224 million including past work.

10. Defendants did the initial work on a mission need statement for replacing the CMR building in 2000.[7] In April 2001 LANL planned the CMRR as a Hazard Category (HazCat) III "or less" building. Such a facility could contain less than 0.9 kg of plutonium-239 or equivalent radiological hazard and could not house even a single plutonium warhead core ("pit"). Despite that limitation this prospective CMRR was judged capable of supporting all of LANL's analytical chemistry needs, allowing CMR decommissioning and disposal (D&D).[8] Obviously, such a structure could not include a vault for 6 metric tons of plutonium or

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[5] Ian Hoffman, "Bingaman seeks funds for design of weapons facility," *Albuquerque Journal*, 4/15/99; Barbara Ferry, "$5 M requested for new LANL complex," *New Mexican*, 4/15/99. At http://www.lasg.org/PU_Media/PU_Vol_7_1999_&_2000.pdf.

[6] NNSA FY2000 CBR, CMR Upgrades Project, 95-D-102 (no other page number).

[7] LANL, "Comprehensive Site Plan 2001," p. 75.

[8] Op. cit. p. 33.

laboratories for processing plutonium in large quantities, as the CMRR-NF is now conceived.[9] In the 2001 plan, defendants expected that any activities requiring large quantities of plutonium would take place in Building PF-4, as they do today. Defendants were aware of space inefficiencies in PF-4 which they could exploit.[10] (An expert panel later estimated PF-4's production efficiency for pits at less than 5%.)[11] NNSA estimated that this CMRR would cost $375 million and could be completed in fiscal year 2008 (FY08).[12]

11. In February 2002, anticipating that NNSA would approve a "mission need" for CMRR, i.e., Critical Decision 0 (CD-0), defendants submitted their first CMRR line item request to Congress. CMRR funding was included in Project 03-D-103, "Project Engineering and Design (PED), Various Locations."[13] This funding was for the entire CMRR project. This line item was to fund:

> ...preliminary design (Title I) and definitive design (Title II). The design effort will be sufficient to assure project feasibility, define the scope, provide detailed estimates of construction costs based on the approved design and working

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[9] For example, see Holmes, Rick, LANL CMRR Project Manager, CMRR Public Meeting, September 23, 2009, p. 20.

[10] A contemporaneous article from the senior cognizant LANL manager provides insight into this strategy.

> With sufficient budget, there are significant opportunities to reclaim the space occupied by excess process capacities. In PF-4, for example, which was originally designed as the nation's premier actinide research and development facility, a portion of the facility remains configured to separate and purify relatively large quantities of plutonium and other actinides.
>
> Although these capabilities made significant contributions to the nation's defense in the early 1980s, it is unlikely that they will ever again be required to operate on that scale. Consolidation of the separations processes into a smaller footprint offers the potential to free up space that can then be used to support increasing programmatic workloads, emergent technologies, or waste reduction and treatment processes required to meet new regulatory standards.

Dr. Tim George, Nuclear Materials Technology Division Director, "Can Los Alamos Meet Its Future Nuclear Challenges? Balancing the Need to Expand Capabilities While Reducing Capacity," *Actinide Research Quarterly*, 1st Quarter 2001. http://arq.lanl.gov/source/orgs/nmt/nmtdo/AQarchive/01spring/editorial.html.

[11] Secretary of Energy Advisory Board (SEAB) Nuclear Weapons Complex Infrastructure Task Force, "Recommendations for the Nuclear Weapons Complex of the Future," July 13, 2005, p. H-6.

[12] LANL, "Comprehensive Site Plan 2001," p. 110.

[13] NNSA FY2003 CBR, Weapons Activities, Project Engineering and Design (PED) Project 03-D-103 (no other page number).

> drawings and specifications, and provide construction schedules, including procurements. The designs will be extensive enough to establish performance baselines and to support construction or long-lead procurements in the fiscal year in which line item construction funding is requested and appropriated.[14]

Defendants estimated that CMRR design would cost $55 M and would be complete in FY2006, with construction to begin under a separate line item in FY2005.

12. Formal mission need (CD-0) for the CMRR was approved on July 16, 2002, so that when FY2003 began, defendants had initial funding and preliminary congressional authorization for the entire design process for CMRR as a whole, as well as internal DOE and NNSA authorization to proceed.

13. Defendants prepared a Notice of Intent (NOI) to prepare an EIS for the CMRR project, which was published on July 23, 2002. The preferred alternative consisted of "two or three" buildings at TA-55 to house existing CMR capabilities, with "extra space for future anticipated capabilities or activities requirements." (CMRR EIS NOI, Cook Aff. Ex. 2) (The 2003 EIS offered alternatives with either one or two buildings.)[15] Thus, by 2003 defendants had not yet decided upon the number of buildings or how CMRR functions would be allocated between them. Necessarily, if there were to be a separate Nuclear Facility (the "two-building" option), such a CMRR-NF would depend upon a nearby second building that housed labs, common utilities, and common offices. The second building need not be built to nuclear facility safety or security standards.

14. In February of 2003, anticipating a NEPA ROD that came in February 2004, NNSA requested CMRR funding from Congress for FY2004 and beyond in a new *construction line item*, 04-D-125, initially for "initiation of design *and construction* for the light

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[14] Id.

[15] CMRR EIS, p. 1-7.

laboratory/office building...and initiation of design activities for the nuclear laboratory(s)" (*emphasis added*). (The 03-D-103 *design-only* line item was also continued.) In the budget request, defendants changed the method of project execution to "design-build" for both buildings, which accelerated management and financial commitment to the project. Defendants' budget request shifted $40.5 M in current and future design costs (90% of the unappropriated balance) from the *design only* line item (03-D-103) to the *design and construction* line item (04-D-125). Defendants sought funding for design-build contracts for the "light laboratory/office building" during *preliminary* design and for the "nuclear laboratory(s)" during *detailed* design. These submissions dated before defendants' NEPA analysis and a full year before the ROD.

15. By February 2003 the scope and requirements for the CMRR project were far greater than envisioned in 2001 and included "60,000 gross square feet of Hazard Category II space [i.e. space for handling radionuclide amounts greater than 0.90 kg of Pu-239 or equivalent] for AC/MC [analytical chemistry and materials characterization], large vessel containment and processing, [nuclear] material storage, and contingency space; 60,000 gross square feet of Hazard Category III/IV space for AC/MC and contingency space; and 90,000 gross square feet for a light laboratory/office building."[16] The proposed total nuclear laboratory space [Hazard Categories II and III combined] was 120,000 sq. ft., many times the size and capability of the remaining total lab space in the existing CMR building (28,000 sq. ft).[17] CMRR nuclear lab requirements were later scaled back to 22,500 sq. ft. of HazCat II space, plus a vault building and other nuclear space, the exact floor area of which has not been provided but which can be estimated at 16,000 sq. ft. (Mello Aff. #1, ¶23)

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[16] NNSA FY2004 CBR, p. 349

[17] Dr. Tim George, "Can Los Alamos Meet Its Future Nuclear Challenges? Balancing the Need to Expand Capabilities While Reducing Capacity," LANL *Actinide Research Quarterly*, 1st Quarter 2001.

16. NNSA received FY2004 appropriations of $26.7 M for CMRR, of which $9.9 M was appropriated for design and [initial] *construction* of the "light laboratory/office building."[18]

17. The CMRR EIS was completed in November 2003, and a ROD was issued on February 12, 2004. This stated in part:

> *NNSA has decided to implement the preferred alternative*, alternative 1, which is the construction of a new CMR Replacement (CMRR) facility at LANL's Technical Area 55 (TA–55). The new CMRR facility would include a single, above-ground, consolidated special nuclear material-capable, Hazard Category 2 laboratory building (construction option 3) with a separate administrative office and support functions building. The existing CMR building at LANL would be decontaminated, decommissioned, and demolished in its entirety (disposition option 3). *The preferred alternative includes the construction of the new CMRR facility, and the movement of operations from the existing CMR building into the new CMRR facility, with operations expected to continue in the new facility over the next 50 years.*[19] (*emphasis added*)

Thus, by February 2004, NNSA had not only sought and received appropriations for CMRR *construction* as well as design but also had formally concluded its NEPA analysis and declared its intent to "implement" – to complete design, to construct, and to operate for 50 years -- its preferred alternative. This ROD has never been withdrawn. Since 2004 NNSA has been implementing the selected CMRR project. Each year since, NNSA has sought and received funds from Congress to design, procure, and construct its chosen CMRR project alternative, each time explicitly referring to this ROD for justification.

18. In February 2004, NNSA submitted its budget request for CMRR funding for FY2005 and beyond, again using two line items. PED (Project Engineering and Design) funds in 03-D-103 were to be used for "preliminary design and engineering work for all project elements." In the construction line item (04-D-125), "[t]he 2005 request for construction funds

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[18] NNSA FY2004 CBR, p. 349; NNSA FY2011 CBR, p. 225.

[19] Federal Register, Vol. 69, No. 29, Thursday, February 12, 2004, 6967-6968.

will support continuation of the RLUOB and initiation of D-B [design-build] activities for Special Facility Equipment (SFE) – Gloveboxes." "SFE" was a new CMRR project component in which NNSA would design and build specialized equipment for *both CMRR-NF and RLUOB.* NNSA was now funding its contractors to implement three parallel project components (RLUOB, SFE, and CMRR-NF), where much of the first two served the third, through two different line items.

19. As built, RLUOB is a three-part structure of 208,125 sq. ft. (not including the tunnel connecting RLUOB and CMRR-NF). It is a radiological, not a nuclear facility, so the total permissible radiological hazard is less than 8.4 grams of Pu-239 or equivalent.[20] Defendants have stated that RLUOB contains a radiological lab section in the first floor, with 26 reconfigurable modules totaling 19,500 sq. ft. RLUOB includes a central utility building (CUB) of 20,998 sq. ft., *serving both CMRR buildings* with: heating and chilled water and a storage unit for ice; potable hot/cold water; electrical power; de-ionized water; compressed air and process gases (argon, helium, nitrogen, and others), and certain bulk chemicals. Offices in RLUOB accommodate 350 people working *in both buildings.* There is also: a personnel entrance control facility *serving both buildings*; a training center which includes simulated laboratories *serving all of TA-55;* a parking lot *for both buildings*; fuel oil storage and backup electrical generation *for both buildings*; a facility incident command center and emergency response capability *for nearby nuclear facilities;* and an operations center. Thus, RLUOB is primarily a support building for the Nuclear Facility.[21] Clearly, significant parts of the construction completed so far, and significant

[20] Steve Fong, "CMRR Project Update," March 3, 2010, slide 2.

[21] Holmes, Rick, NNSA, CMRR mtg, September 23, 2009, p. 14; NNSA, FY2011 CBR, p. 228; NNSA, LANL Construction Forum, "Chemistry Metallurgy Research Replacement (CMRR) Construction," LALP-08-065, June 16, 2010, handouts; CMRR Project brochure, LALP-06-006, Mar 9, 2006; NNSA CMRR mtg, LA-UR-08-1763, Mar 25, 2008, slide 9.

parts of the congressional appropriations and contractual obligations for it, support and constitute part of the *CMRR-NF*, not just the RLUOB, because the former cannot operate without them, and their current scale and configuration have no separate justification.

20. In May or June 2005 (defendants' statements conflict), DOE and NNSA approved CD-1 for entire CMRR project.[22] DOE summarizes CD-1 as "Approve Alternative Selection and Cost Range: the selected alternative and approach is the optimum solution."[23] At this time the project has entered the "project execution phase."[24] CD-1 is the decision upon which all subsequent management action, including internal critical decisions and the external obligations (*e.g.*, contracts, congressional authorizations and appropriations) which flow from them, are based. Unless CD-1 is rescinded in this case, defendants' regulations do not allow them to consider any alternatives to the project. In general, contracts consequent to CD-1 may represent a further impediment. DOE's "bureaucratic momentum" (often the bane of objective NEPA analysis) takes on a highly structured and rigid form in the milestones used to fund and manage defendants' large construction projects, such as NEPA RODs and DOE critical decisions.

21. On October 21, 2005, NNSA and DOE approved CD-2/3 for RLUOB. CD-2/3 is the "design-build" combination of CD-2 ("Approve Performance Baseline") and CD-3

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[22] NNSA FY2010 CBR, Weapons Activities, RTBF, 04-D-125, CMRR Project, May 18, 2005, p. 215; and NNSA FY2009 CBR, Weapons Activities, RTBF, 04-D-125, CMRR Project, June 17, 2005, p. 298.

[23] DOE Order 413.3B, p. A-2.

[24] DOE Order 413.3B p. A-6. Initiation of the project "execution phase" at CD-1 is the same under DOE Order 413.3A (in place at the time) and 413.3B (the same order as revised on November 29, 2010).

Interestingly, under the order *as revised during this litigation*, NEPA RODs may be issued at any time prior to CD-3 ("Approve Start of Construction") instead of much earlier as in 413.3A, prior to the beginning of final design, CD-2, even though "alternative selection" must be complete at CD-1 in both versions. This change, which would largely render NEPA moot as a planning tool in DOE, is convenient to defendants, because, contra Council on Environmental Quality (CEQ) regulations requiring NEPA analysis early in a project (40 CFR 1501.2, "Apply NEPA early in the process"), completion of the NEPA process need only come far after DOE is fully committed to a project.

The other major applicable DOE order, Order 430.1-1, "Life Cycle Asset Management," requires completion of all NEPA analyses prior to preliminary design and CD-1. See Mello Affidavit #1, para. 68.

("Approve Start of Construction/Execution"). DOE describes CD-3 as follows: "CD-3 is a continuation of the execution phase. The project is ready to *complete* all construction, implementation, procurement, fabrication, acceptance, and turnover activities."[25] (*emphasis added*).

22. In November, 2005 a design-build contract for RLUOB was awarded to Austin Commercial Contractors LP. RLUOB groundbreaking was on January 12, 2006.

23. In 2007, the SFE component of the project was renamed the "RLUOB Equipment Installation" (REI). REI "design-build" CD-2/3 occurred on July 17, 2009.

24. The LANL Site-Wide Environmental Impact Statement (SWEIS) of May 2008 and the Complex Transformation Supplemental Programmatic Environmental Impact Statement (CTSPEIS) of October 2008 did not further analyze the CMRR project, but rather incorporated the analysis of the 2003 CMRR EIS by reference.

25. However, by the time these analyses were completed, defendants had, for at least a year, highly detailed knowledge of "significantly" increased seismic hazard at LANL.[26] Defendants' decision to suppress this documented knowledge and keep it out of their NEPA process has been very costly and very damaging to the CMRR-NF project and to the taxpayer, because LANL's nuclear and high-hazard facilities are still not in compliance with federal standards. Yet the successful operation of CMRR-NF is predicated not just on success in the CMRR-NF but also in bringing a variety of related existing facilities at LANL up to code requirements. Given the formal agency commitments to that date, neither the SWEIS nor the CTSPEIS could have reconsidered CMRR-NF without: a) revising the 2004 CMRR ROD; b) revising all critical decisions past CD-0 for the project, *i.e.* for RLUOB and SFE; and halting at

[25] DOE Order 413.3B p. A-12.

[26] LANL May 25, 2007 Probabilistic Seismic Hazard Assessment (PSHA), Mello Aff. #1 ¶16, Ref. 1.

least some of the RLUOB investments designed to support CMRR-NF, which are prejudicial to any choice about whether or not to build CMRR-NF.

B. Certain statements in the declarations of Mr. Herman LeDoux and Mr. Roger Snyder require clarification to avoid misleading the court. In particular, the relief sought by plaintiff in no way affects national security.

26. Some response is necessary to the declarations submitted by Mr. LeDoux and Mr. Snyder. In ¶3 of his declaration Mr. LeDoux states that construction of the CMRR-NF "building" has not begun. In fact, the CMRR-NF site has been partially excavated, and 90,000 cubic yards of earth have been removed. A parking lot is being built. The whole area is "busy with construction," much of it in preparation for CMRR-NF, by far the largest project in the "Pajarito Corridor Integration Project."

Pajarito road busy with construction - September 2, 2010

> Have you ridden down Pajarito Road lately? It's a bustle of construction activity. According to Tom McKinney, Associate Director for Project Management and Site Services, it's only going to get busier! Based on anticipated funding, major construction will continue along the stretch of Pajarito Road between TA-48 and TA-46 from 2010 to 2020, enhancing LANL's future research capability and missions, and remediating environmental issues from past missions. The good news is that construction projects will provide growth and prosperity for LANL, our local community, and the northern New Mexico economy. Funding for construction and development also means an endorsement at the highest levels for our national security mission. The bad news is that it will be inconvenient. The introduction of large-scale construction will bring dramatic changes to area infrastructure which, in turn, will affect normal operations, including traffic flow, utilities, parking, safety and security, and recreational activities in the area. To manage this venture, the Pajarito Corridor Integration Project has been developed and personnel have begun coordinating the interface, with affected parties, between construction activity and ongoing operations, and a real-time, master integrated schedule is in place to identify, record, and deal with project issues as they arise.[27]

Moreover, the statement is misleading in context. Construction *in preparation for* the CMRR-

[27] LANL News Archive: LANL Construction: Pajarito Corridor: LANL, http://www.lanl.gov/construction/news.shtml [1/9/2011 2:26:14 PM]

NF building actually began in 2006 and is continuing (see ¶¶ 19 -22), and approximately $319 million has been appropriated to the RLUOB structure and its specialized equipment, all of which serve CMRR-NF.[28]

27. Clearly, significant environmental impacts and irreversible commitments of resources have ensued. *Additional* construction with *additional* impacts, specifically in support of the CMRR-NF building and its construction, is poised to begin. Steve Fong, CMRR Project Manager, stated at a March 3, 2010 public meeting that the "infrastructure package [baseline design] is done," i.e. ready for design-build contracting under the design-build procurement strategy being used.[29] The "infrastructure package" referred to consists of dozens of separate construction projects in the first phase of the CMRR-NF building, which will cause extensive environmental impacts over approximately 94 acres. (Mello Aff. #2 ¶ 12). Defendants have stated construction will not occur until after the SEIS, or after 2011. Construction is now slated for some time after the proposed SEIS and its ROD, i.e. in or after June 2011. (Cook Aff. ¶25)

28. Also in ¶3, Mr. LeDoux claims "[t]he CMRR EIS analyzed the potential environmental impacts associated with replacing the existing Chemistry and Metallurgy Research (CMR) Building, as well as the potential environmental impacts associated with the reasonable alternatives to replacing the CMR building." (Mr. LeDoux ¶3) This is not true. The proposed action and its impacts have turned out to be very different than those portrayed in the 2003 EIS. The 2003 EIS was simply, and for whatever reasons, false. Now NNSA has rejected all the alternatives presented in the CMRR EIS, and none of them are reasonable.

29. In ¶3 Mr. LeDoux says that the EIS refers to constructing "two new buildings in Technical Area-55." These were two very specific buildings of a certain size and general design.

[28] DOE CBR FY2011 pp. 219, 221.

[29] NNSA CMRR Public Meeting, LA-UR 10-02173, Mar 3, 2010, p. 20. (Mello Aff1, Par 44)

These were not *any* two buildings and certainly were not buildings of the size and scope of the present CMRR project.

30. In ¶4 Mr. LeDoux incorrectly states that the CMRR-NF described in the 2004 ROD was a "below ground building." In fact the ROD stated the CMRR project "would include a single, *above-ground*, consolidated special nuclear material-capable, Hazard Category 2 laboratory building." (*emphasis added*) (CMRR EIS NOI, Cook Aff. Ex. 2)

31. In ¶5 Mr. LeDoux incorrectly states that the environmental impacts listed in the CMRR EIS were "analyzed" in the May 2008 SWEIS and October 2008 CTSPEIS. The CMRR impacts mentioned in the SWEIS and CTSPEIS were not *analyzed*, but *compiled,* or *packaged* – imported unchanged from the CMRR EIS, even though by this time highly-significant new seismic information was available, which also subsequently changed the CMRR project dramatically. (Fallacious) CMRR impacts were an *input*, not an *output*, of those analyses. Those expected impacts were impacts of a much smaller project than what is currently planned.

32. In ¶6 Mr. LeDoux states that the Supplemental Environmental Impact Statement (SEIS) will analyze the "changes" to the CMRR-NF "and their reasonable alternatives." No claim of objectivity is made and none should be assumed, for the reasons list below in Section E (¶¶92 through 99). Nor is there any mention of defendants' continuing implementation *of the preferred alternative alone,* while preparing the SEIS. Unbiased study of alternatives cannot occur in the atmosphere of commitment to construction.

33. Both Mr. LeDoux and the SEIS NOI state that "changes" will be analyzed: "Over time…some aspects of the CMRR–NF Project have changed from what was foreseen when the CMRR EIS was prepared. The potential environmental impacts of these proposed *changes* will

be analyzed in the CMRR–NF SEIS."[30] There is no mention of a *comprehensive* analysis of project impacts, including what has *changed* (construction impacts, certainly) and what defendants have claimed has *not* changed, presumably during operations. In fact both new information since the 2003 EIS and changes in the project make the CMRR EIS obsolete in *every* way. A SEIS limited to analyzing "changes" in the project cannot capture environmental impacts.

34. In ¶7 Mr. LeDoux claims that the RLUOB construction has been finished. While the RLUOB building is built, it is far from ready for use. As of October 1, 2010, about 3 years of equipment manufacture and installation lay ahead, for which additional appropriations of $108 million will be sought.[31]

35. In ¶7 Mr. LeDoux discusses CMRR-NF space which pertains to "chemistry operations and materials characterization," leaving the impression that the total programmatic space within the building has not changed. In fact NNSA has never provided accurate totals of programmatic space within CMRR-NF. Such space includes not only AC/MC but also vault space and space for large vessel handling.

36. In ¶9 Mr. LeDoux refers to an "iterative process" for designing CMRR-NF. This is another way of saying that the project incorporated erroneous assumptions, had to be completely redesigned, is ending up much bigger than before. When this redesign occurred, reexamination under NEPA should have been ordered, and CD-1 rescinded to make that analysis possible.

37. In ¶10 Mr. LeDoux misleadingly states that the 2004 ROD chose a CMRR-NF with "both above and below ground components." See ¶30, *supra.*

[30] CMRR SEIS NOI, (see P's Re-MTD Ex 21)

[31] DOE CBR FY2011, p. 221.

38. In ¶¶ 11 and 12 Mr. LeDoux offers some reasons why the gross square footage of CMRR-NF has doubled since the 2003 EIS. He omits to say that the internal height of the building, therefore its volume and the total number of floors in the building, are greater than before.[32] It is a significantly bigger (and far more complex, expensive, and heavily-built) building.

39. In ¶13 Mr. LeDoux discusses seismically-motivated thickening of the CMRR-NF structure. According to Timothy Dwyer, chief of the technical staff of the Defense Nuclear Facility Safety Board (DNFSB), new technical issues have recently arisen in relation to seismic design of CMRR-NF.[33] These have not been solved.

40. In ¶14 Mr. LeDoux admits that defendants expect that continuing CMRR-NF design during the SEIS process will provide "important information for the analysis in the SEIS needed to understand and address uncertainties *associated with the construction of the CMRR-NF*." He says nothing about uncertainties associated with alternatives *other than* CMRR-NF. Continuing CMRR-NF design during the SEIS would predetermine the outcome.

41. The refinements mentioned by Mr. LeDoux in ¶14a-d are irrelevant to any choice between primary alternatives to the CMRR-NF, i.e. alternatives which would not build CMRR-NF, a choice NNSA purports to contemplate in its SEIS. They refer, at most, to secondary alternatives, i.e. alternative construction methods for executing the primary alternative.

42. In ¶¶ 15 through 19 Mr. LeDoux discusses defendants' employment and contracting hardship, should the project be enjoined. Some general observations can be made:

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[32] Greater interior height for the purpose of adding safety equipment: Tom Whitacre, NNSA CMRR project staff, personal communication October 20, 2010. Labs and equipment must rest on floors, hence more floors. See also NNSA CMRR "Supplement Analysis for the Chemistry and Metallurgy Research Building Replacement (CMRR) Project," p. 6: 2003: 2 laboratory stories mentioned; 2010: 4.5 "levels" mentioned. Building depth is now 125-140 ft. below grade (original or as now excavated?); formerly less than 50 ft below grade. The building is not greatly changed in height above ground but extends much deeper; floors must be added to use the greater volume.

[33] Telephone conference with Timothy Dwyer, DNFSB, January 10, 2011.

a. First, the alleged hardship is an aspect of the defendants' attachment to a chosen course resulting from violations of NEPA. This perception of harm, if a course must change, is part of what predetermines outcomes. The purpose of design is to eliminate the remaining choices.

b. Second, the degree of alleged harm bears some proportion to the NEPA violation itself. The more NNSA has illegally invested in its massive CMRR-NF prior to NEPA analysis, the more NNSA has to lose should a break in momentum occur or different alternative be chosen.

c. Third, should the present alternative be found unsound, what today appear to be "costs" from the perspective of a line manager like Mr. LeDoux actually will be benefits and savings. There is no "cost" or "harm" in stopping wasteful government spending. All the "costs" mentioned are relative to a hypothetical continuation of the project.

43. The CMRR-NF project team consists of federal employees at NNSA, management and operating contractor employees at LANS, which manages LANL and this project for NNSA and DOE, and other contractors and subcontractors. Federal employees are by far the smallest of these groups and the least affected. NNSA, subject to congressional direction, decides the priorities of LANS. NNSA could easily task LANS to study alternatives to CMRR-NF, within current management and contract vehicles. Continuing resolutions (including the one in place right now) provide especially wide programming latitude. NNSA has a large backlog of infrastructure and safety deficiencies at LANL, which LANS is only slowly addressing. Building PF-4 is of particular concern.[34] LANL as a whole has been operating under a

[34] See for example Todd Jacobsen, "Defense Board Raises Concerns about NNSA Safety Changes: DNFSB Worried that Ruling at Los Alamos National Laboratory Sets Precedent," *Nuclear Weapons & Materials Monitor* March 22, 2010.This article discusses only one facility. There are serious problems at other nuclear facilities and seismic safety problems in many of LANL's older buildings.

Justification for Continued Operations (JCO) for the past three years because it's nuclear and other high-hazard facilities cannot yet all be certified as seismically safe. Important non-nuclear facilities such as the Sigma Complex are also not seismically qualified. Compliance at PF-4 alone is expected to take many years and hundreds of millions of dollars.[35] In short, there a number of critical infrastructure and safety upgrades needed at LANL, to which end the talents of the individuals in question could be directed, apart from conducting business case and engineering analyses of the cost and management feasibility of all reasonable alternatives to CMRR-NF.

44. In ¶2 Mr. Snyder claims that the information he provides is based on "his personal knowledge and information provided to me during the performance of my official duties." Mr. Snyder's experience and responsibilities as stated do not include national security policy issues.

45. In ¶4 Mr. Snyder claims the capabilities planned for CMRR-NF "currently reside" in the CMR building. This is incorrect. The CMRR-NF will have extensive capabilities not present in the CMR building, such as a six metric ton vault for nuclear materials and the capability to process and variously manipulate quantities of plutonium that exceed current CMR safety limits a hundredfold. The existing capabilities of LANL, including those residing in the CMR building, have been adequate to support LANL's missions. The proposed CMRR-NF, especially as combined with RLUOB, will far exceed CMR capabilities. (There are no plans to replace the CMR Wing 9 hot cell capability with anything comparable in CMRR-NF.) There are also new efficiencies, which translate into production capacities, created by consolidating PF-4, RLUOB, and CMRR-NF at one site, connected by short tunnels instead of roads.

[35] Id.

46. In ¶5 Mr. Snyder claims CMRR-NF capabilities are "necessary" for all operations involving special nuclear materials. Yet LANL is not significantly impaired today without those "necessary" CMRR-NF capabilities, which will require another 12 years. CMRR-NF is primarily justified by missions which have yet to be created or assigned and may never be – primarily, actual pit production in quantity. CMRR-NF would create the capacity for those future hypothetical missions. Pit production in quantity – which is only necessary if existing warheads are to be replaced, requires warhead redesign and certification of performance, safety, and reliability, a task which has never been attempted by the U.S. without nuclear testing, something many experts believe impossible – has been stigmatized by national policy.[36] While there are serious seismic safety problems at CMR, PF-4 and other key LANL facilities, LANL's ability to complete its assigned work has not been significantly affected by these limitations. There is no record in congressional debate, the trade press, LANS performance evaluations, or anywhere else of LANL being unable to perform its work, which if true would command overt attention from many parties. For example, LANL has been "manufacturing power system components for long range space missions" for decades without CMRR-NF.[37] Mr. Snyder also refers to CMRR-NF's necessary future role in nuclear forensics, but NNSA already possesses other facilities and laboratories already capable of carrying out this mission which are already engaged it. This mission centers primarily centers on radiochemistry, which does not require a nuclear facility. Nevertheless large material samples are handled at all NNSA weapons complex sites except Pantex, and additional DOE and DoD sites as well. In short, key driving missions

[36] White House, April 2010 Nuclear Posture Review p. ; (Mello Aff. #1 ¶19, ref. 4)

[37] See for example LANL, Jim Danneskiold, "Lab technology helps power Rover on Mars," February 9, 2004.

NNSA has proposed removing that mission from LANL as part of a nationwide consolidation of the material in question (Pu-238). Should that occur, an additional 15,000 or so sq. ft. of reconfigurable Hazard Category II nuclear processing and laboratory space would become available to conduct many of the missions currently envisioned for CMRR-NF.

for the proposed CMRR-NF are bureaucratic *aspirations*, some of which are technically controversial, not national *policy* or *requirements*.

47. At bottom, Mr. Snyder is saying that there are no alternatives to constructing the $5-billion-plus CMRR-NF. He is saying CMRR-NF is an *absolute* national imperative, without which the security of the U.S. will suffer greatly, and therefore it must be built. So saying, Mr. Snyder contradicts NNSA claims to be analyzing reasonable alternatives under NEPA. The notion that there are no alternatives to the proposed action despite a *10-fold* cost increase, beggars belief and is anathema to NEPA. Possible reasonable alternatives are discussed in section C.

48. In ¶6 Mr. Snyder claims pit "fabrication" will not be carried out in the CMRR-NF. He does not explain how he knows what will occur in the CMRR-NF a decade or two from now, especially given the touted "hotel concept" for adding unstated future missions.[38] In any case, the primary and nearly the whole justification of CMRR-NF is to facilitate pit production and certification, a justification that has been repeated to me over the years by congressional staff, other national security analysts, and senior managers at NNSA headquarters. Many people in Congress and the administration believe CMRR-NF has no coherent *raison d'etre* without pit production in quantity, to replace pits currently deployed, a mission which Congress has so far rejected[39]. Current administration policy (the Nuclear *Posture Review* of April 2010) stigmatizes the production of replacement pits.

> In any decision to proceed to engineering development for warhead LEPs, the United States will give strong preference to options for refurbishment or reuse. Replacement of nuclear components would be undertaken only if critical Stockpile Management Program goals could not otherwise be met, and if

[38] Mot. Prelim. Injunction p. 5, Mello Aff. #1, par 17,

[39] This is despite strenuous efforts by NNSA during the previous administration under the proposed "Reliable Replacement Warhead" (RRW) rubric.

> specifically authorized by the President and approved by Congress. (Mello Aff. #1 ¶19, ref. 4)

Thus the House Appropriations Committee wrote in 2007:

> ...[t]he CMRR facility has no coherent mission to justify it unless the decision is made to begin an aggressive new nuclear warhead design and pit production mission at Los Alamos National Laboratory.[40]

No such mission has been approved. Given the absence of such a mission, that Committee proposed zero funding for the CMRR project *as a whole* for FY2008, including RLUOB (as they also had done for FYs 2004 and 2006.) In fiscal years 2005 and 2007 that committee proposed cuts of 58% and 89% from budget requests, respectively, recommending only pre-conceptual cost estimating and long-term planning – tasks consistent with reevaluating alternatives. Thus for five years, one of the two committees in Congress that is responsible for funding NNSA rejected the project as presented.

49. Further evidence of CMRR-NF's primary mission is easily found. In May of 2007 NNSA wrote to the Senate Appropriations Energy and Water Development Subcommittee that CMRR-NF would multiply LANL's pit production capacity by a factor of five, from "10 to 15" to "50-80 pits per year."

> Without the CMRR, the long-term pit production capacity at LANL is limited to approximately 10 to 15 pits per year, based on limited vault space and multiple mission requirements. The actual throughput that would be achieved likely would be lower owing to the inherent unreliability of the CMR. LANL provides the Nation's sole pit production capability until a new consolidated plutonium center is available. Although the limited LANL capability does sustain a certain level of production capability, the 10 pits per year rate would not support meaningful stockpile transformation, or provide a capability to respond to a significant technical issue in the current stockpile. *If the NF were constructed, and if the existing plutonium facilities at LANL were dedicated to pit manufacturing, a pit production rate of approximately 50-80 pits per year might be sustainable for*

[40] House Report 110-185, June 11, 2007, p. 105, http://thomas.loc.gov/cgi-bin/bdquery/z?d110:H.R.2641:

some duration.[41] (*emphasis added*)

50. Still further, in its November 2007 budget "passback" guidance to NNSA, the Office of Management and Budget (OMB) wrote unambiguously regarding CMRR's purpose, associating it with the now-defunct RRW program:

> ***NNSA Funding for Nuclear Weapons' Cores:*** The DOE/NNSA is requesting funding in FY 2009 for the Chemistry and Metallurgy Research Replacement Project. *This facility will be used to manufacture the central core of nuclear weapons, known as the "pit."* The DOE/NNSA has assumed a future production rate of 50 – 80 pits per year at Los Alamos National Laboratory, New Mexico, consistent with their preferred alternative for complex transformation. *Currently there is no formal agreement between DOE and DOD on production requirements, and thus no firm basis for setting a facility production capacity requirement. This requirement is the major cost driver for the facility.*
>
> Therefore, DOD and DOE should collaborate on an analysis that determines what level of production will be sufficient to meet requirements for pit replacement in the stockpile, whether for existing designs or for the future Reliable Replacement Warhead (RRW). This analysis should also clarify the number of RRW variants that will be produced. DOD and DOE should provide this analysis to OMB not later than July 2008.[42] (*emphasis added*)

51. Two years ago, the House Appropriations Committee voted funds for sustainment of the PF-4 pit production line, while acknowledging the lack of need for pit production:

> The Committee also accepts, with some skepticism, NNSA's contention that preservation of plutonium capability requires the actual manufacture of plutonium pits, although the W88 pits now being produced are for a Cold War weapon poorly suited to the 21st Century threat. Under present plans, the production run of W88 pits will be completed in approximately three years, leaving no more pits to be produced to sustain the plutonium capability. Accordingly, the Committee recommends $123,201,000 for Plutonium Infrastructure Sustainment, $26,000,000 below the request in order to produce W88 pits at a minimum rate and extend plutonium capability, pending resolution of nuclear strategy issues. (House Report 111-203, July 13, 2009, http://thomas.loc.gov/cgi-bin/bdquery/z?d111:h.3183:)

52. Deployed pits are expected to last at least 85 years from manufacture. "Most

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[41] NNSA, "Chemistry and Metallurgy Research Building Replacement Project, May 2007" at http://www.doeal.gov/SWEIS/OtherDocuments/427%20NNSA%202007%20CMR%20senate%20report.pdf.

[42] OMB, passback guidance to NNSA for its FY2009 budget request.

primary types have credible minimum lifetimes in excess of 100 years as regards aging of plutonium; those with assessed lifetimes of 100 years or less have clear mitigation paths that are proposed and/or being implemented." JASON, "Pit Lifetime," JSR-06-35, at http://lasg.org/JASONs_report_pit_aging.pdf.

53. Nearly all deployed pits were made in 1980 or after. (See also, von Hippel Aff. ¶5) The stockpile pit age profile could be reduced without new production by using planned dismantlements. The remaining pits would have a greater life expectancy than the proposed CMRR-NF with its expected 50-year life. Pit life exceeds by decades the lead time required for construction of additional pit production facilities like CMRR-NF.

54. There have been highly divergent estimates of LANL's *current* pit production capacity, ranging from as low as "10-15" (as in par X above) to as high as 200. Mr. Jonathan Gill, Associate Director [x] of the Government Accountability Office (GAO), said in May 2010 that one can find estimates from NNSA and DOE of LANL's current capacity that vary by a factor of ten, which accords with my experience as well. The capacity depends on management commitment, space allocation, pit design, and other factors, in addition to the variously-stated "capacities" of the TA-55 complex with or without CMRR-NF. A Secretary of Energy Advisory Board committee including former senior managers of the nuclear weapons complex has written:

> ...the manufacturing operation at TA-55 is extremely inefficient when compared with any conventional manufacturing operation. There is little evidence of modern manufacturing techniques being employed....Modern manufacturing techniques...if applied rigorously could yield unprecedented reductions in TA-55 pit manufacturing costs and cycle time.
>
> The enormous investment made in the TA-55 facility has not yielded anywhere near the productivity levels this facility should be capable of attaining. The process is operated with little sense of urgency. It appears that each manufacturing step is "an event" attracting numerous witnesses and visitors. The process of actually building a pit seems to be a secondary mission of the facility, not the primary focus.
>
> At every phase of operation, there appears to be numerous opportunities to

> "lean-out" the operation....the vast majority of the time the plutonium material, raw or in the process of becoming a pit, is waiting to be inspected, to be tested, waiting for test results, etc. This is an incredible waste of time...Fundamentally, the pit facility produces one product, yet it appears that every pit produced is a "hand crafted individual object". This method of production yields process inefficiencies in every operation. Additionally, process automation at several steps of this process would be quite valuable. Currently available CNC machining centers, modified for the unique safety hazards, would yield a wealth of productivity gains.
>
> From a modern industry standpoint, world class productivity, quality, and safety can all be attained at the TA-55 facility by thorough and rigorous analysis and hard work on the production floor. The cursory analysis of the TA-55 facility yields a ratio of value-added to non-value added work of perhaps 1:20 or much worse. This indicates a tremendous opportunity for improvement. The available productive capacity of this plant is being wasted by inefficient utilization of plant equipment and personnel.
>
> In conclusion, the TA-55 facility is an expensive national asset, which has the opportunity to be a dramatically more effective and efficient facility if operated as a modern production facility, utilizing available automation and world class operations management techniques.[43]

Additional capacity could be added by moving from one to two shifts at PF-4. If this is not feasible, this points to fundamental problems which CMRR-NF will not solve.

55. In ¶7 Mr. Snyder states that CMRR-NF is "predicated" upon an approved mission need. However, DOE expressly forbids constructing a mission need that is specific for any building, including CMRR-NF. CMRR-NF must be *one alternative* for filling an identified need. DOE Order (413.3B) describes "mission need":

> CD-0, Approve Mission Need.
>
> The Initiation Phase begins with the identification of a mission-related need. A Program Office will identify a credible performance gap between its current capabilities and capacities and those required to achieve the goals articulated in its strategic plan. The Mission Need Statement (MNS) is the translation of this gap into functional requirements that cannot be met through other than material means. It should describe the general parameters of the solution and why it is critical to the overall accomplishment of the Department's mission, including the benefits to be realized. *The mission need is independent of a particular solution,*

[43] Secretary of Energy Advisory Board Nuclear Weapons Complex Infrastructure Task Force, "Recommendations for the Nuclear Weapons Complex of the Future," July 13, 2005, p. H-6.

> *and should not be defined by equipment, facility, technological solution, or physical end-item. This approach allows the Program Office the flexibility to explore a variety of solutions and not limit potential solutions* (refer to DOE G 413.3-17). Table 2.0 lists the requirements needed to attain CD-0.[44] (*emphasis added*)

56. In ¶8 Mr. Snyder alleges the 2003 EIS was based upon "the best available conceptual information at that time." But it did not produce an accurate EIS. The 2003 EIS, for one thing, did not disclose or apply information NNSA clearly possessed regarding seismicity and the unstable sediments present beneath the site. The geology and seismicity have been the subject of decades of investigation by dozens of staff scientists and numerous expert consultants. Yet the 2003 EIS relied on crude national earthquake data and an obsolete 1995 Probabilistic Seismic Hazard Assessment (PSHA) to predict ground accelerations at TA-55.[45] Our 1997 memorandum summarized the inadequacies of the 1995 PSHA and was provided to defendants at the time. This information led to a 1998 settlement, requiring further seismic investigations at LANL. This inadequacy and the use of irrelevant earthquake data from San Francisco and other textual evidence strongly suggest that this section of the CMRR EIS was written to deflect critics rather than objectively analyze. Likewise the presence of unconsolidated sediments beneath TA-55 has long been known to NNSA. Its generally poor structural (and hence seismic) properties are obvious from local landforms; this layer does not have enough integrity to create a cliff.

57. In ¶10 Mr. Snyder discusses the semi-yearly public meetings by defendants to discuss the CMRR project. We have been at all (or nearly all) of these meetings. They have nothing to do with NEPA or alternatives to the project, and have touched only cursorily upon environmental impacts. They have neither provided comprehensive, detailed information upon

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[44] DOE O 413.3B, p. A-4

[45] CMRR EIS pp. 3-24, 25.

which professional, detailed, environmental comments could be based nor any chance for meaningful comment.

58. In ¶11 Mr. Snyder omits to mention that Pajarito Road is used recreationally by badge-holders and is used by badge-holders and their families and friends as a driving route to schools and businesses in downtown Los Alamos from the community of White Rock. It is a bicycle commuter route, as Ms. Benson's affidavit mentions.

59. In ¶12 Mr. Snyder alleges that construction will not be authorized or executed during the SEIS period. Plaintiffs have requested a moratorium on investment in CMRR-NF, not during the pendency of the SEIS, but until trial and judgment. Defendants intend to re-start CMRR construction in June, if such construction is not underway. Mr. Snyder does not say that, even before, defendants will not continue to invest in CMRR-NF, prejudicing any future NEPA analysis.

60. In ¶13 Mr. Snyder says that defendants are under no obligation to act on bid solicitations. This does not however mean that "the taxpayer will not incur additional cost should the SEIS and ROD not support furtherance of the preferred alternative." Neither is it true for the many solicitations which have led to contracts, including the M&O contract. If the present work on CMRR-NF continues until the SEIS ROD, and that ROD does not support the preferred alternative, most of the work done between now and the SEIS ROD will have been wasted.

61. In ¶14 Mr. Snyder alleges that final design contracts have been deferred, but provides no evidence for this. He then contradicts his statement, saying "[c]ertain design efforts are continuing as a means to resolve unknowns..." Continuation of design during SEIS preparation will only skew the result of the SEIS process. Mr. Snyder says the design will only

advance by 15% during this period. It is roughly 50% complete now. By June, when the SEIS is expected to be complete, the design will be over half complete – enough, according to defendants, to begin construction.

62. In ¶15 Mr. Snyder discusses performance baseline, which is still years away for this project. In other words, Congress will get a reliable cost estimate only after construction is well under way and close to $1 billion has been allocated to the CMRR project. Congress will then have little choice but to continue. Such a course turns proper project management on its head. Defendants' bad project management, including abuse of project baselines, was the subject of a 4-year study by a National Research Council (NRC) committee, beginning in 1999. In 1999 the committee noted that in 2001 DOE would implement "[a]n agreement between Congress and DOE's chief financial officer for establishing baselines at the 20- to 30-percent design stage."[46] It is a serious fault and a sign of future difficulties that a baseline – a fundamental tool for managing large projects – is not available now.

63. In ¶16 Mr. Snyder avers that the excavation of 90,000 cubic yards of earth at the CMRR-NF site was motivated only by a desire to to understand the site better. He does not say that adequate geologic information could not have been provided more easily. He states that the excavation "confirmed the suitability of the site for CMRR-NF," but three years later, NNSA said that seismic concerns, as they relate to certain nuclear safety standards might make construction of CMRR-NF infeasible. (Mello Aff. #1 ¶16 ref. 2, Energy Daily).

64. In ¶17 Mr. Snyder discusses connected actions in the Pajarito Corridor. All the projects he mentions have some independent function, but at the same time the *scale* or *design* of

[46] NRC Committee to Assess the Policies and Practices of the Department of Energy to Design, Manage, and Procure Environmental Restoration, Waste Management, and Other Construction Projects: Improving Project Management in the Department of Energy, *Improving Project Management in the Department of Energy*, 1999, p. 5

each one depends on the presence and the size of CMRR-NF, with which they are planned as an integrated system. Large portions of the Nuclear Materials Safeguards and Security Upgrades (NMSSUP) project are necessitated *only* by CMRR-NF. Thus, Plaintiffs have requested that any preliminary injunction include the relevant parts of NMSSUP. Some of these projects have not even been revealed to the public, *e.g.* the huge nuclear waste disposal pits in TA-43 and TA-63 that are part of defendants' planned "Consolidated Waste Capability." The entire waste complex, as well as the Radioactive Liquid Waste Treatment Facility (RLWTF) is clearly being sized to include the wastes from CMRR-NF. It is not true that these projects have been "appropriated addressed" under NEPA.[47]

65. In ¶18 Mr. Snyder discusses the TA-55 Reinvestment Project ("TRP"), which consists of improvements to PF-4. This project is clearly being designed and built with CMRR-NF in mind. Were CMRR-NF not being built, the TRP would be designed and built quite differently. A more extensive TRP is a very realistic alternative and element of other alternatives to CMRR-NF, one which NNSA chose in its far smaller and cheaper 2001 CMRR plan.

66. In ¶19 Mr. Snyder discusses the NMSSUP. He omits to mention that this project includes moving a 600-foot section of extremely expensive security perimeter *twice*, once to make the CMRR-NF excavation accessible for trucks and concrete, and a second time to move it back to its original location after construction. (Mello Aff. #2 ¶7)

67. In ¶20 Mr. Snyder discusses the RLTWF. As noted previously RLWTF is being designed to handle flows from CMRR-NF.

68. In ¶21 Mr. Snyder alleges that there is a "fence to fence" cleanup of LANL going on. Here Mr. Snyder invites the reader to share in the special meaning of "cleanup" used

[47] NNSA, *2011 Biennial Plan and Budget Assessment on the Modernization and Refurbishment of the Nuclear Security Complex*, p. 28, Figure D–11: "Site overlay of the Consolidated Waste Capability for addressing TRU, Low Level and Mixed Low Level radioactive waste." (see Mello Aff 2, Par 12a)

in defendants' bureaucracy. There is a Consent Order as mentioned, and it is supposed to be fully executed by 2015, although the probability of that occurring is slim. But this process will not result in "cleanup" as the term is normally used. In most cases the contamination will simply be covered over, using the crushed tuff from the CMRR-NF excavation. NNSA also intends to dispose of millions of pounds of additional nuclear waste , including putting it in the aforementioned "pits." The CMRR-NF will generate large volumes of wastes, and defendants have said they will dispose of these wastes at LANL and elsewhere.[48]

69. In ¶22 Mr. Snyder alleges that none of the ongoing construction at TA-55 is connected to CMRR-NF. Please see Section A and ¶66 above regarding NMSSUP.

70. In ¶24 Mr. Snyder discusses light pollution. The light pollution has been a source of complaints already. The southern portion of NMSSUP, some of which is specifically for CMRR-NF, will also generate light pollution, as will construction, which sometimes must continue at night. This light pollution will affect wildlife, as noted in my second affidavit.

71. In ¶25 Mr. Snyder calls CMRR-NF a "critical component" of ensuring "a safe, secure, and effective nuclear arsenal over the long term." If this is his view, he has clearly decided that any environmental impacts are unimportant in comparison, so that he has predetermined the outcome of NEPA analysis. He cites the Nuclear Posture Review (NPR), which calls for completing CMRR-NF, but it does not propose omitting objective, prior NEPA analysis, or say that the project cannot be paused for that purpose. Likewise, the Senate Armed Services Committee believes CMRR-NF is "essential" but still "has many unresolved issues including the appropriate size of the facility." Those concerns also include the lack of reliable

[48] CMRR EIS pp. S-38, 3-57,58.

cost estimates, the lack of any project baseline, the need for strict adherence to DOE Order 413, and the division of the project into multiple sub-projects.[49]

72. In ¶26 Mr. Snyder discusses the endorsement of CMRR-NF by the 2009 "America's Strategic Posture" report. It is often called the "Perry Commission" after its Chairman, William Perry, who is a LANS director. Another key participant in that study, Richard Mies, is also a LANS director. These are material conflicts of interest. This was not a government-authored report. The report says that the CMR building "is maintained in a safe and secure manner only at a high cost." This is incorrect. First, the CMR building is not being maintained in a safe and secure manner. Second, maintenance expenditures at CMR are relatively low – far lower than are expected at CMRR-NF. CMRR-NF will be a very costly facility to own and operate (¶85, below).

73. In ¶27 Mr. Snyder claims construction of CMRR-NF is critical to "renew and strengthen the Nuclear Nonproliferation Treaty (NPT)" and to enter into new treaty obligations including New START and the Comprehensive Test Ban Treaty (CTBT), for which he says the CMRR-NF is necessary to satisfy the Senate, *i.e.* for political reasons. Mr. Snyder has no qualifications or duties in international relations or Senate politics. Moreover, New START was ratified a few days after Mr. Snyder's affidavit, and whatever political assessments involved it are now irrelevant. The *political* relationship of the CMRR-NF to some possible future CTBT ratification bargain is pure speculation. The supposed relationship to renewing and strengthening the NPT is the opposite of what Mr. Snyder says. The CMRR-NF supports the manufacture of pits for modified nuclear warheads in an evolving arsenal. This is widely understood as contravening Article VI of the NPT, which requires "a cessation of the arms race."

[49] SASC report FY2011, p. 274 (see Mello Aff 1, Par 19, Ref 6).

74. In ¶28 Mr. Snyder claims injury from an injunction, citing supposed deadlines. Completion of this project has been delayed approximately 14 years by poor planning and design. The most serious concern bearing on the schedule for completing CMRR-NF *and its alternatives* is the unsafe condition of CMR (Snyder ¶30), which should be addressed *immediately*, not after CMRR-NF is finished. NNSA's CMR Upgrades Project, abandoned in 2001, had a cost equivalent to one or two year's anticipated maintenance costs for CMRR-NF. A redesigned, updated version of the CMR Upgrades Project would greatly decrease CMR hazards at a relatively modest cost.

75. In ¶29 Mr. Snyder refers to "significant national security impacts" without elaboration. If built, CMRR-NF may be complete in 2023, and it may take two years to certify the operating systems and, according to the 2003 CMRR EIS, four years to fully transition activities to the new building.[50] The deficiencies to which Mr. Snyder alludes can only occur after CMRR operations is scheduled to begin, 12-15 years from now. Mr. Snyder does not point out that reasonable alternatives are those which, among other qualities, avoid "significant national security impacts." In effect, Mr. Snyder is again saying there are no reasonable alternatives, which is not true.

76. NNSA has prepared a contingency plan to move all remaining functions from CMR into RLUOB and PF-4, should the need arise.[51] There are many alternative ways of relieving CMR, prior to and without CMRR-NF. But NNSA prefers to invest in the far-away CMRR-NF, because all these alleged problems are not, in fact, significant in the near term.

77. In ¶30 Mr. Snyder attests to the impact of reduced operations at CMR on "important characterization and chemistry capabilities" that "support mission requirements." If

[50] Confirmed schedule details, a central part of the missing project baseline, are not available.

[51] DNFSB Weekly Site Report, January 2, 2009

these impacts are truly significant NNSA must address them sooner than 2023, when CMRR-NF would be available. In 2009, a senior staff member of the House Armed Services Committee asked me why, if CMR were closed and its missions moved elsewhere, as was planned through most of the last decade, those missions couldn't stay wherever they were moved, i.e. PF-4, RLUOB, the radiochemistry labs in TA-48, or elsewhere. Or, alternatively, if there were problems with those new mission homes, couldn't they be upgraded? It was a good question. Defendant D'Agostino answered this question, posed by House Energy and Water Appropriations Subcommittee Chairman Pete Visclosky:

> Visclosky: "NNSA currently relies on the existing, 50-year-old...(CMR) facility at LANL to perform analytical chemistry and material characterization activities for the Pit Manufacturing Campaign. The CMRR would replace this facility. However, the "basis for interim operations" for the CMR facility expires in 2010...If NNSA decides to produce 30-50 RRW pits at the TA-55 facility at LANL starting in the 2012-2014 timeframe [i.e. long before the CMRR is completed], how will the CMR facility accommodate those activities?"
>
> Mr. D'Agostino: "...The options include moving all nuclear Chemistry and Metallurgy Research Facility (CMR) operations into the Plutonium Facility at LANL with attendant displacement of other efforts in the Plutonium Facility; extending the Basis for Interim Operations with the existing operations; and shrinking the operating footprint of CMR and continuing to decrease the inventory of materials in CMR to decrease its risks to support extending the Basis for Interim Operations of CMR beyond 2010." (House Energy and Water Development Appropriations Subcommittee, Hearing of March 29, 2007, supplemental questions for the record, p. 584 in Part 8, "Energy and Water Development Appropriations for 2008," printed version.)

Mr. D'Agostino appears to have described a reasonable alternative.

78. In ¶31 Mr. Snyder admits that "NNSA's strategy" to mitigate impacts from reduced CMR operations depends "entirely" on completion of CMRR-NF, expected to occur in 2018. (That date has been set back at least two to five years) The purpose of NEPA is to explore *alternatives* to "NNSA's strategy."

79. In 1997 defendants rejected a possible future CMRR-NF for reasons that are now familiar:

> The construction and operation of a new facility was considered and DOE determined that it was not fiscally prudent (Section 1.3). However, *construction of a new facility would not meet DOE's need for continued performance of uninterrupted interim and ongoing radioactive chemical and metallurgical research activities at LANL.* Planning, design, and construction of a new facility would take a minimum of 10 years to complete. As noted in Section 2.3, the higher risks and lower safety margins that would exist in the CMR Building without upgrades would be unacceptable to DOE within about 5 to 10 years. Further, *a new facility is estimated to cost more than twice as much as the proposed upgrades* ($348 million vs. $123 million). In addition, the existing CMR Building would have to be decommissioned, incurring additional costs and wastes generated would take up space in the LANL low-level radioactive waste landfill or other permitted waste disposal system.
>
> A new facility could disturb previously undisturbed land. New construction could potentially have adverse environmental effects upon water and air quality, biological resources, and possibly archeological resources. Because this alternative could potentially cause more environmental effects than the proposed upgrades, is estimated to cost more than twice the proposed upgrades, and would jeopardize DOE's requirement to maintain the uninterrupted operational capability to perform radioactive and chemical research, construction and operation of a new facility were not considered reasonable, and therefore, not analyzed further in this EA.[52]

Considerable new knowledge has appeared since 1997 that bears on this judgment, both as to upgrading the southern half of CMR (now harder to accomplish than it appeared in 1997), and as to CMRR-NF (from 12 to 18 times more expensive as was estimated then, prior to correcting for inflation). We do not know of any studies of upgrading CMR upon which fact-based conclusions could be based. No objective SEIS could be written without trustworthy studies of this and other alternatives, and the data from these studies made available to other federal agencies and the public prior to the scoping process.

C. Potential alternatives to CMRR-NF can be named which, if analyzed, may meet defendants' mission needs more effectively at lower cost, environmental impact, and management risk than CMRR-NF.

80. The identification of "reasonable alternatives" requires, first, the thorough dissection and specification of mission need, and, second, thorough examination of the potential

[52] DOE, "Environmental Assessment for the Proposed CMR Building Upgrades at the Los Alamos National Laboratory," p. 24.

of existing facilities at LANL and at other sites. Such alternatives would need to be examined for functionality, life-cycle cost, longevity, environmental impact, implementation speed, management risk, compatibility with other missions at the site, effect on morale; effect on diplomacy; and so on. Plaintiff has prepared a short précis regarding CMRR-NF alternatives which includes a matrix with the main elements of the CMRR-NF mission (as far as plaintiff understands them) on one axis, and potential existing, planned, and upgraded facilities at LANL and other sites on the other axis.[53] This table shows some of the alternatives that should be examined for reasonableness. Without at least some analysis on the part of defendants, we and other parties inside government and out are hard-pressed to do more.

81. The decision in 1996 to conduct all plutonium pit operations at LANL was based on a cost estimate an order of magnitude lower than defendants face today.[54] A properly prepared EIS would enable defendants to reevaluate the need for simultaneously building three multi-billion-dollar plutonium facilities, one in Los Alamos and two at Savannah River, while *downgrading* an existing plutonium facility at Lawrence Livermore, which has no significant, publicly-known safety problems, contains more Hazard Category II space than the CMRR-NF design, and which already has pit production equipment. At the same time, LANL facilities which support CMRR-NF should also be examined as to longevity and safety. These structures include CMR, PF-4, the Sigma building, and other facilities. There may be other LANL facilities supporting CMRR-NF that have significant structural, safety, and other shortcomings. The recent appearance of a mysterious, large "cold, hardened shop" next to PF-4 and CMRR-NF

[53] Los Alamos Study Group, "The Proposed Chemistry and Metallurgy Research Replacement Nuclear Facility (CMRR-NF): New Realities Call for New Thinking," December 10, 2010.

[54] Richard Geddes, CMRR SEIS scoping comments, October 27, 2010. Mr. Geddes 42-year experience in nuclear materials management includes being engineering manager for SRS's input into the plutonium disposition and stockpile stewardship programmatic EIS and as engineering manager Modern Pit Facility conceptual design team.

in Attachment 2 of Mr. Snyder's affidavit shows that NNSA plans new capabilities to work in tandem with CMRR-NF and other TA-55 facilities. The dramatic cost escalation at CMRR-NF together with the problem of bringing other facilities into compliance with seismic safety requirements has unquantified cost implications and unknown feasibility.

82. Under NEPA defendants must "rigorously explore and objectively evaluate all reasonable alternatives," even those which are not within defendants' jurisdiction.

> [40 CFR] Sec. 1502.14 Alternatives including the proposed action.
> This section is the heart of the environmental impact statement. Based on the information and analysis presented in the sections on the Affected Environment (Sec. 1502.15) and the Environmental Consequences (Sec. 1502.16), it should present the environmental impacts of the proposal and the alternatives in comparative form, thus sharply defining the issues and providing a clear basis for choice among options by the decisionmaker and the public. In this section agencies shall:
>
> (a) Rigorously explore and objectively evaluate all reasonable alternatives, and for alternatives which were eliminated from detailed study, briefly discuss the reasons for their having been eliminated.
>
> (b) Devote substantial treatment to each alternative considered in detail including the proposed action so that reviewers may evaluate their comparative merits.
>
> (c) Include reasonable alternatives not within the jurisdiction of the lead agency.

83. Possible "reasonable alternatives" include:

a. Upgrade and use from one to four CMR wings, with Wing 9 and its supporting mechanical systems at the top of the list. Combine with other facility use. Structural upgrades as revised from previous plans, may well be feasible.

b. Construct a new CMR at TA-3.

c. Consider various smaller CMRR-NFs, *e.g.,* without a large vault, as an "above-ground" facility; as a Hazard Category III facility; without the "hotel concept" and hence more internal supports, as an "above-ground facility" (as previously defined,

i.e. less than 50 feet deep) with a broader footprint but less depth, avoiding proximity to the unconsolidated ash layer, or at a LANL location with more solid rock underneath.

d. Delay any decision to build CMRR-NF and pursue later if needed, deferring high maintenance expenses (estimated by LANL at about 2.5% of capital cost per year, *i.e.,* circa $145 million/yr) and higher CMRR-NF operating expenses. This approach could save in excess of a billion dollars over a decade in net present value even when a reasonable allowance for design re-start costs are included.

e. Make pit production contingent on the development of actual need, if needed, centered at LANL but involving other sites depending on production rates. Thus, NNSA establishes priorities for redirecting existing plutonium Hazard Category II/III space. Many variations are possible.[55]

f. Make internal modifications at PF-4, possibly including moving Pu-238 work to Idaho National Laboratory ("INL"), freeing PF-4 space. Defendants have a line item and management structure in place for this option (TA-55 Reinvestment Project).

g. Enhance facilities at other sites for pit production mission elements, e.g. the K Area Complex at SRS, or INL, for: pit recycling, plutonium metal production, for foundry operations, and for Pu and pit storage.[56]

h. Modify RLUOB, e.g. to HazCat III or higher for specific uses, or possibly for transient or sporadic uses, or as an element of contingency plans.

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[55] This option has been supported by LANL and Lawrence Livermore National Laboratory (LLNL). Mark Hart, Warren Wood, and David Olivas, "Plutonium Pit Manufacturing Unit Process Separation Options for Rapid Reconstitution: A Joint Position Paper of Lawrence Livermore National Laboratory and Los Alamos National Laboratory," LLNL, LANL, September 6, 1996.

[56] Id.

i. Use LLNL's Superblock as a HazCat II facility as part of contingency plans.

j. Redirection of parts of Mixed Oxide Fuel Fabrication Facility at SRS ("MFFF") for pit production elements or to absorb plutonium disposition missions planned for PF-4.

k. Clarify pit policies, *e.g.,* establish policies of

1. Life extension programs (LEPs) without pit production;

2. Keeping a retired warhead and/or pit bank;

3. Abjuring certification of new-design pits or replacement warheads;

4. Limiting required pit production rate;

5. Requiring only one production line; and

6. Retiring some pit types (*e.g.* W88)

84. Recognize that, if pit production must be: a) active, *i.e.,* for the stockpile and just not for evaluation purposes; b) prompt; c) on a large scale; d) without the ability to commandeer non-pit space at PF-4 and elsewhere; and confined to a single site (LANL, which has significant site limitations), it will be very expensive. The feasibility of establishing a pit production mission at LANL is far from proven.

D. From a value engineering perspective the value of CMRR-NF has declined dramatically, suggesting a hard look at alternatives is warranted.

85. From 1999-2004, during which time many key constituencies became politically vested in the project, Defendants persuaded themselves and others that a NF would be relatively quick and inexpensive. The first public reference to CMRR is an announcement by Senator Bingaman's office in 1999, which stated the CMRR "would not be 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."[57] (CMR maintenance and operating costs, exclusive of programmatic efforts, were just $12.5 million per year.[58] CMRR operating costs were recently projected to be an order of magnitude higher.[59]) In 2001, Defendants still stated that NF would cost just $375 million and would be complete in FY2007.[60] By 2003 and 2004, when Congress first began funding engineering design for the NF and Defendants wrote their EIS and ROD, the estimated cost had still not begun to rise.

86. The useful space per dollar spent – "value" in the Value Engineering sense, to which declarant Herman LeDoux refers in his paragraph 16 – has dramatically decreased over the history of the CMRR-NF project. Please see the following table.[61]

[57] Ian Hoffman, "Bingaman Seeks Funds for Design of Weapons Facility," *Albuquerque Journal North*, April 15, 1999, archived at http://www.lasg.org/Pit_Prod.htm.

[58] DOE CBR FY2000: Project 95-D-102, http://www.cfo.doe.gov/budget/00budget/index.htm

[59] "In FY14 [sic – FY2022], the CMRR facility is planned to become operational. The CMRR maintenance budget is projected at approximately 2.5% of RPV [Replacement Plant Value] to sustain its condition. One of the challenges for the Laboratory and NNSA is to provide the funds necessary to meet this new maintenance funding demand." In FY07, total LANL maintenance spending was $88 M, of which $6 M was for the existing CMR building. See LANL, "Ten-Year Site Plan, FY2008-FY20017," LA-CP-07-0039, January 9, 2007, pp. 114-115. Study Group files, Freedom of Information Act request.

[60] LANL, *Defense Program Draft Ten Year Comprehensive Site Plan* (TYCSP), 9 Feb 2001: Master Project List, http://lasg.org/CMRR/Litigation/LANL_Master_Project_List-FY2001.pdf

[61] In this table, all costs are current-year estimates, uncorrected for inflation. For lack of better data I assume CMRR-NF is two-thirds of total CMRR cost from 2003 through 2008. I continue the 2005 to 2007 total RLUOB cost through 2009 for lack of any data. From the crude wide range of estimates offered, I select CMRR D&D at $400 M throughout. There was no requirement or estimate for CMR D&D in 2003 and 2004. Only CMRR-NF cost is used to calculate dollars/sq. ft.

Year estim-ated	CMRR-NF cost, $M,	RLUOB cost, $M,	CMR D&D $M	CMRR total, $M	HC II space, sq. ft.	HC III space, sq. ft.	Total useful sq. ft.	$1,000 per sq. ft.	Value ratio to '03
2003[62]	400	200	0	600	60,000	60,000	120,000	3.33	1.00
2004[63]	400	200	0	600	22,000	23,000	45,000	8.89	0.37
2005[64]	561	277	400	1,238	38,500	0	38,500	14.57	0.23
2006[65]	561	277	400	1,238	38,500	0	38,500	14.57	0.23
2007[66]	561	277	400	1,237	38,500	0	38,500	14.57	0.23
2008[67]	>2,000	277	400	>2,564	38,500	0	38,500	>51.95	<0.06
2009[68]	>2,000	277	400	>2,564	38,500	0	38,500	>51.95	<0.06
Feb. 2010[69]	3,432	363	400	4,195	38,500	0	38,500	89.14	0.04
Nov. 2010[70]	3,700 to 5,800	363	400	4,463 to 6,563	38,500	0	38,500	96.10 to 150.65	0.03 to 0.02

HC = Hazard Category; $M = $million; D&D = decommissioning and disposal

87. The result of this analysis – limited because NNSA and DOE have never disclosed the basis for what sketchy cost estimates they have provided Congress– is that useful nuclear Hazard Category II and III space in the proposed CMRR project has declined by a factor of between roughly 20 and 50 since the first CMRR cost estimate was submitted to Congress. Moreover, so far in this project, whenever an estimated cost bracket (minimum and maximum) has been stated in one year, a later estimate is found to exceed the previous maximum cost.

[62] DOE FY2004 CBR, p. 347, 349.

[63] DOE FY2005 CBR, p. 220, 222.

[64] DOE FY2006 CBR p. 271; p. 276 for discussion of D&D costs. Square footage: Mello Aff. #1, ¶23. a 2009 value that is assumed to apply from 2005 through 2010 for lack of better data.

[65] DOE FY2007 CBR, p. 284

[66] DOE FY2008 CBR, p. 294

[67] DOE FY2009 CBR, p. 298

[68] DOE FY2010 CBR, p. 215

[69] DOE FY2011 CBR, p. 227

[70] White House, "November 2010 Update to the National Defense Authorization Act of FY2010 Section 1251 Report: New START Treaty Framework and Nuclear Force Structure Plans" November 17, 2010, p. 6. (see P's Re-MTD, ref 1)

While gross cost inflation is common for DOE and NNSA projects, I am unaware of any large project ever undertaken by NNSA or its predecessor DOE Defense Programs in which there has been comparably steep climb in either estimated cost (increased by a factor of 9 to 14) or erosion in planned value (decreased by a factor of 20 to 50), where both are expressed in current (uncorrected) dollars.

88. When compared to previous Hazard Category II plutonium facilities at LANL, the cost of CMRR-NF laboratory and vault space in inflation-corrected dollars has increased dramatically since 1954. See the following table. Historical data for CMR and PF-4 are from Study Group files.

Facility	Year	HazCat II space, sq. ft.	Cost then, $millions (M)	Inflator (CPI)	Cost now, $M	Constant $/ HazCat II sq. ft.
CMR (wings 1, 2, 3, 4, 5, & 7)	1954	about 44,000	(actual) 22	8.13	172	3,909
PF-4	1978	67,000	(actual) 75	4.07	305	5,117
CMRR-NF	2003	60,000	(est.) 400	1.19	476	7,933
CMRR-NF	2004	22,000	(est.) 400	1.16	464	21,090
CMRR-NF	2010	38,500	(est.) 3,700 to 5,800	1.00	3,700 to 5,800	96,104 to 150,649

Today's estimates for the cost in constant dollars of nuclear facility space in the CMRR-NF are from 19 to 29 times the cost of similar space completed recently during the Cold War, i.e. at PF-4. This cost per square foot comparison could be extended (unfavorably to CMRR-NF) to the proposed Modern Pit Facility (MPF) project. [can we put in the data?]

The MPF was described – as virtually all proposed NNSA projects are described – as "critical" to national security by defendants when announced in 2003.[71] Subsequently the MPF was abandoned without ceremony, as many DOE projects are. Between 1980 and 1996, DOE

[71] "If constructed and operated, a MPF would address a critical national security issue by providing sufficient capability to maintain, long-term, the nuclear deterrent that is a cornerstone of U.S. national security policy. A MPF would provide the necessary pit production capacity and agility that cannot be met by pit production capabilities at LANL." *Draft Supplemental Programmatic Environmental Impact Statement on Stockpile Stewardship and Management for a Modern Pit Facility*, May 2003, p. S-15. DOE/EIS-236-S2.

cancelled some 31 out of 80 "Major System Acquisitions" (MSAs), on which more than $10 billion had already been spent. As of 1996, only 15 of the 80 projects begun during the period had yet been completed; of these, "most of them were finished behind schedule and with cost overruns." Of the 34 MSAs still continuing in 1996, "cost overruns and 'schedule slippage' have occurred and continue to occur on many of the ongoing projects."[72]

89. The estimated completion date for construction of the CMRR-NF project has been variously estimated as 2008 (in 2001), 2009 (in 2003), 2010 (in 2002), 2020 (in early 2010), and now as late as 2023: "...for the high [cost] estimate[s], the facilities would reach completion in FY 2023 for CMRR and FY 2024 for UPF."[73] The 2003 EIS estimated a four-year transition period to the new building, once the project is complete.

90. Initially, CMRR-NF was supposed to have 60% of its 200,000 gross sq. ft. of interior building area devoted to programmatic purposes.[74] The comparable figure today is about 9.5% (of 406,000 gross sq. ft.).[75] That is, 90% of the gross area in CMRR-NF, plus much of RLUOB, plus a range of supporting structures and connected actions, must be purchased and built to make 10% of CMRR-NF's floor area useful and safe.

91. The above tables and analyses do not show the life-cycle costs of CMRR-NF. Defendants have said CMRR-NF will be far more expensive to operate than CMR. For these and other reasons previously enumerated I conclude that the CMRR-NF is already a management fiasco, and in clear need of fundamental reexamination.

E. The proposed Supplemental Environmental Impact Statement (SEIS) could never provide

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[72] Government Accounting Office, "Department of Energy: Major System Acquisitions From 1980 Through 1996," RCED-97-85R, March 4, 1997.

[73] White House, "November 2010 Update to the National Defense Authorization Act of FY2010 Section 1251 Report: New START Treaty Framework and Nuclear Force Structure Plans" November 17, 2010, p. 6.

[74] DOE FY2004 CBR, p. 349.

[75] Mello Aff. #1, ¶23; DOE FY2011 CBR p. 228.

objective analysis of all reasonable CMRR-NF alternatives, as required by NEPA.

92. NNSA has been increasing its commitment to CMRR-NF since making the decision in 2004 to construct and operate it. Nearly all of the activities currently underway specifically advance and entrench defendants' preferred alternative and no other. Thus, they are prejudicial action. These prejudicial actions include detailed design and the design, purchase, and installation at RLUOB of specialized equipment to support CMRR-NF. No objective EIS or SEIS could be written while project momentum continues and specific contractual commitments to it continue to be made, executed, and extended.

93. The purpose of NEPA analysis is to foster better federal decisions, not to analyze the impacts of decisions already made (40 CFR 1500.1). NEPA analysis is supposed to be done very early in the design process (40 CFR 1501.2), prior to formal alternative selection at CD-1, *i.e.,* when alternatives to the project are still being weighed.[76] DOE guidance states that such interim commitments are normally not appropriate.[77] NNSA claims its SEIS will help the agency choose between design details, but the issue is a choice between primary alternatives. The proposed alternatives in the SEIS NOI do not involve choices between design details.

94. The SEIS is being written because *none* of the original alternatives are reasonable any more. The 2003 EIS only considered constructing a CMRR in neighboring technical areas. Now the scale and scope of the project have markedly changed, dramatically changing the environmental impact analysis. Relevant new environmental information has come to light. New circumstances and scientific knowledge, erosive to the original purpose and need, have appeared. The project itself has exploded in cost and lengthened in schedule as the true nature of the

[76] See DOE orders discussed at Mello Aff. #1, ¶66-69 and in this affidavit, ¶¶55, 71.

[77] DOE, "Guidance Regarding Actions That May Proceed During the National Environmental Policy Act (NEPA) Process: Interim Actions," June 17, 2003.

proposed site has become internalized. Without a comprehensive treatment, all reasonable alternatives and their impacts cannot be evaluated. An EIS must "[r]igorously explore and objectively evaluate all reasonable alternatives" (40 CFR Sec. 1502.14). "The information [in an EIS] must be of high quality." (40 CFR 1500.1). There is nothing left of the original EIS to "supplement," and the attempt to do cannot meet NEPA standards. The very word "supplemental" signals an unbroken commitment to the project. To write a "supplemental" analysis of a project's alternatives, when *one* alternative is the sole subject of such commitment, relegates the SEIS to *post-hoc* paperwork, contrary to NEPA's intention and requirements.

95. The purpose and need of the original project require reexamination today because of new scientific knowledge (existing pits will far outlast the factory to produce them), new technical data from the stockpile management program (stockpile can be kept safe, secure, and reliable without pit production indefinitely), new stockpile realities (post-2003 stockpile current and planned reductions), and new policies (NPR prejudiced against pit production; rejection of RRW). There is no significant pit production authorized or planned. NNSA is explicitly and fully committed to one alternative as they themselves and numerous senior officials have said. We read it on the front pages of our newspapers,[78] extensively in the trade press, on the White House web site,[79] and in the updated "Section 1251 Report."[80] The NOI and other materials provided so far contain too little factual material to provide any basis for informed comment. The scope of analysis presented in the October 1, 2010 Notice of Intent (NOI) was far too narrow and cursory. The current purpose and need were not examined. A very narrow suite of alternatives

[78] E.g. John Fleck, "Nuclear Spending Plan Up," *Albuquerque Journal*, 11/ 19/10, http://www.abqjournal.com/news/state/19232507888newsstate11-19-10.htm.

[79] White House, "Fact Sheet: An Enduring Commitment to the U.S. Nuclear Deterrent," 11/17/10, http://www.whitehouse.gov/the-press-office/2010/11/17/fact-sheet-enduring-commitment-us-nuclear-deterrent

[80] White House, "November 2010 Update to the National Defense Authorization Act of FY2010 Section 1251 Report: New START Treaty Framework and Nuclear Force Structure Plans" November 17, 2010, p. 6.

was offered, without any technical background to even indicate their possible feasibility. Two of the three alternatives are clearly infeasible and unsafe (build the rejected 2003 CMRR-NF; keep using CMR without upgrades). No secondary alternatives were even mentioned. "Business case" or "capacity" analyses are needed to support a full suite of alternatives.

96. NNSA is conducting its NEPA process separately from other design, feasibility and impact analyses it is doing.

97. The notice methods used by NNSA for the SEIS were inadequate. Plaintiff, for example, did not receive any notice from NNSA or DOE, meaning that DOE did not use its mailing lists of regional organizations and individuals long involved in DOE affairs.[81] Although CMRR-NF is clearly an issue of national importance, and DOE maintains national lists of parties categorized by interest, no evidence has been provided that any such list was used. The cognizant staff members at the New Mexico Environment Department (NMED) who had commented on the 2003 EIS told us they never saw any formal notice of this SEIS.

98. No hearings in other relevant NNSA locations, even though alternatives may involve facilities at other sites including the Savannah River Site (SRS), Lawrence Livermore National Laboratory (LLNL), and the Idaho National Laboratory (INL). LANL was chosen as a pit production site based on estimate of total costs a factor of ten lower than today's.[82] Given the huge cost increases, other sites which already have a plutonium infrastructure have clearly become reasonable alternatives, implying a need for proper notice and comment opportunities.

[81] This issue was also pointedly raised in some detail by the Pajarito Group of the Sierra Club.

[82] Richard Geddes, CMRR SEIS scoping comments, October 27, 2010.

99. There were no actual scoping hearings. Providing computer terminals to type comments do not constitute a "hearing." Neither is an impromptu forum, provided without notice, where only informal notes are taken, a hearing.

F. An objective NEPA analysis of CMRR-NF and its alternatives is impossible without certain prior actions by defendants.

100. NNSA and DOE have publicly expressed their commitment to the single CMRR-NF alternative currently being pursued based on the 2004 ROD and their own critical decision process. A NEPA-compliant EIS or SEIS for CMRR-NF requires that they formally rescind these.

101. Defendants must rescind Critical Decision 1, "Selection of Alternatives."

102. Defendants must halt further investments in the CMRR-NF alternative currently being pursued, which only further entrench this alternative, reduce its schedule disadvantage to simpler alternatives, and prejudice any future decision. NEPA recognizes no post-decisional SEIS.

103. Defendants must undertake a searching review of the project's purpose and need. A great deal has changed, from stockpile size (much smaller) to known minimum pit life (much longer), to confidence in stockpile maintenance without pit replacement (now complete). In 1997, DOE said CMRR was unreasonable. In 2001, CMRR-NF plans did not include a Hazard Category II structure. In 2003, CMRR-NF plans had some 120,000 sq. ft. of nuclear laboratory space. A few years later, CMRR-NF plans had about 38,500 sq. ft. of nuclear laboratory space. Clearly DOE and NNSA have held many different concepts of what is essential in the last 14 years.

104. As preparation for an EIS, defendants must conduct business case analyses of the cost and feasibility of all reasonable alternatives, considering the infrastructure of the entire weapons complex as appropriate. No objective EIS can be written without this.

105. A full national scoping process that takes the newly clarified purpose and need and new business case and feasibility analyses into account is then required.

Gregory Mello, Affiant, being first duly sworn states on oath, that all of the representations in this Affidavit are true as far as the Affiant knows or is informed, and that such Affidavit is true, accurate and complete to the best of Affiant's knowledge and belief.

Dated: January 14, 2011.

Gregory Mello

SUBSCRIBED AND SWORN TO before me this 14th day of January, 2011, by Gregory Mello.

Notary Public

My Commission Expires: 02-26-2012

OFFICIAL SEAL
MEREDITH M. MARSHALL
Notary Public
State of New Mexico
My Comm. Expires 2-26-12

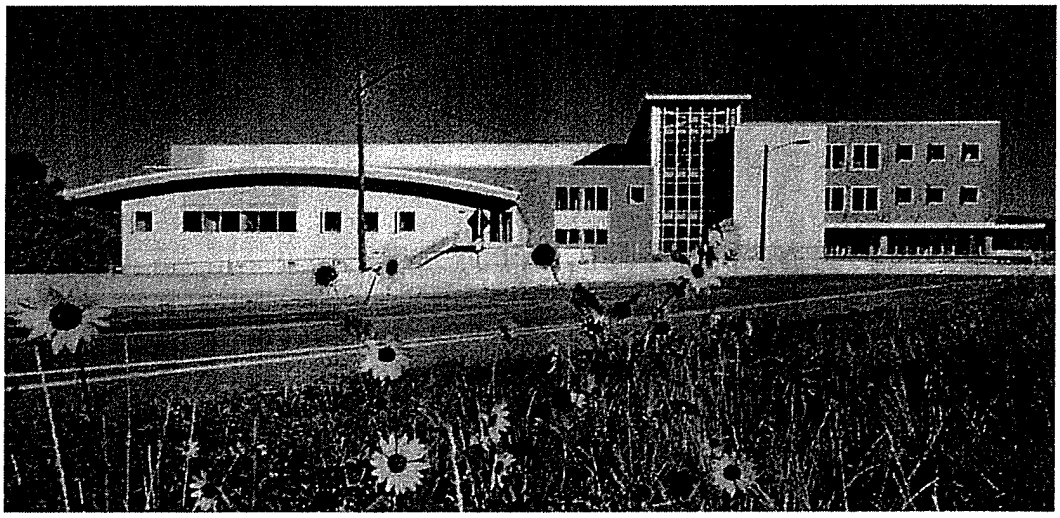
Mello aff 3, par 19, ref 20

CHEMISTRY
METALLURGY
RESEARCH
REPLACEMENT

CMRR Public Meeting, March 3, 2010

Volume 9

Los Alamos National Laboratory
Los Alamos, New Mexico



Los Alamos
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NNSA
National Nuclear Security Administration

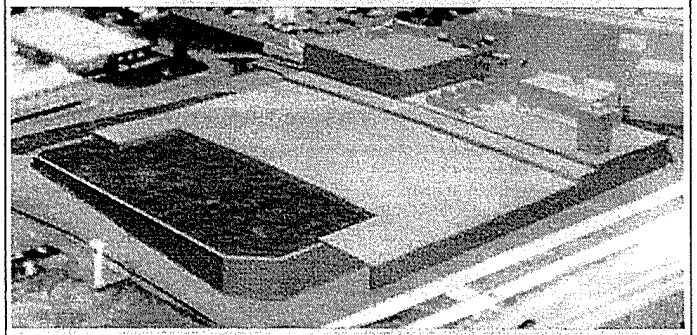
LA-UR 10-02173

CMRR Overall Project Structure

CMRR Project

Two closely interrelated facilities in differing phases of development.

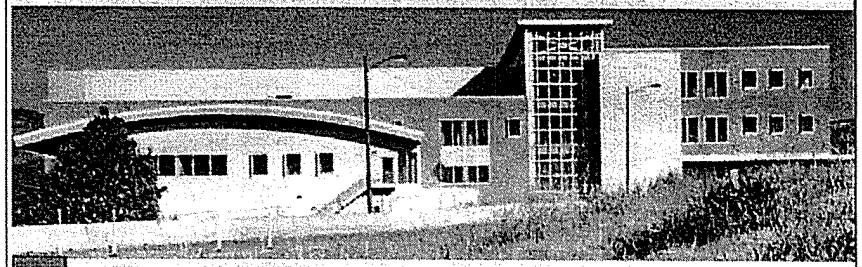
Nuclear Facility (NF)



- Baseline under Development:
- CMR Laboratory Replacement Capability
- Nuclear "Hazard Category 2" Facility
- 22,500 Net Square Feet Lab Space
- Special Nuclear Material storage (6M tons)
- Special Facility Equipment
- Robust "Security Category 1"

Status: In design

Radiological Laboratory/Utility/Office Building (RLUOB)



Building Shell

- Facility Performance Baseline ($164M TPC):
- 19,500 NSF radiological lab space (<8.4g 239 Pu equivalent)
- Centralized utilities/services for all CMRR facility elements
- Office space for 350 CMRR workers
- Consolidated training facility
- Facility incident command; emergency response capabilities

Status: Substantially Complete

Equipment

- RLUOB Equipment Installation (REI)
- Operational equipment to complete functionality of RLUOB

Status: Performance Baseline Approved – July 2009
TPC = $199.4M
Completion – 2013

One project on the Congressional Data Sheet – multiple efforts within NNSA/DOE.

00930

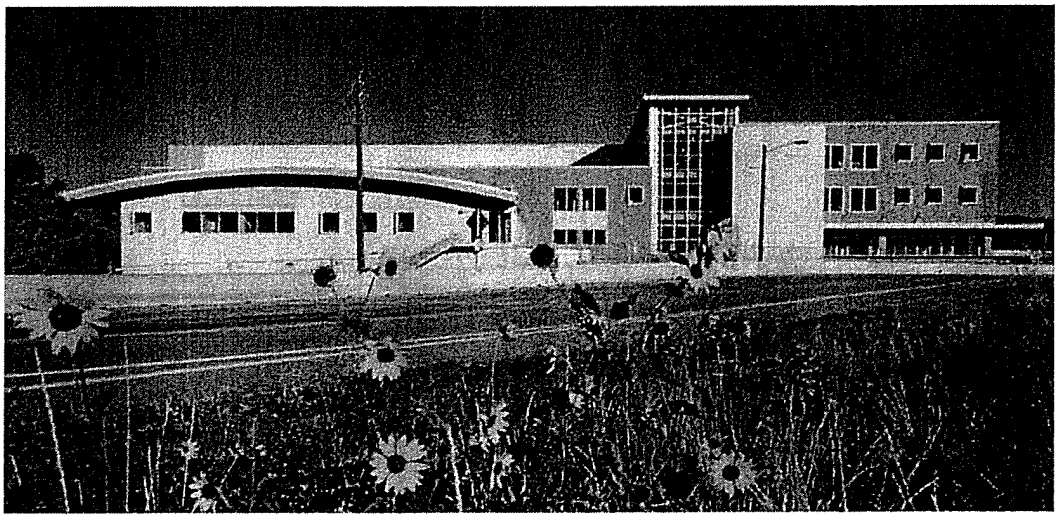
Mello aff 3, par 19, ref 21a

CHEMISTRY
METALLURGY
RESEARCH
REPLACEMENT

CMRR Public Meeting, September 23, 2009

Volume 8

Los Alamos National Laboratory
Los Alamos, New Mexico



Los Alamos
NATIONAL LABORATORY
EST. 1943

NNSA
National Nuclear Security Administration

LA-UR 10-00676

done that too. And keep working on the design, essentially, to maintain continuity of the design teams. And then, the budget for '09 was 97.2 million. For '10, the House [US House of Representatives] mark is at 55 million. We're at 97 million in the Senate [US Senate] version. I don't think the two committees have joined yet to reach a conference committee decision, um, because I think Congress has been a little busy lately. So the direction has not changed substantially to the project.

[RICK HOLMES]
Next chart.

[LANL Slide 11]
[RICK HOLMES]
Kinda the highlight schedule. For those of you that haven't seen the history of the project, it's been around for a very long time. Um, a couple of things that have been done is the Congressional Commission on Strategic Posture, sometimes known as the Perry Commission Report, is out there and available. Uh, the Nuclear Posture Review is now planned. We're hearing sometime in February. And we don't control any of that. It's, y'know, the administration's document. Um, and I'll talk about the details of the rad lab schedule and how we get into, ready for radiological operations in that building, when we get to the REI [RLUOB equipment installation] part.

[RICK HOLMES]
Next chart.

[LANL Slide 12]
[RICK HOLMES]
Go ahead

[LANL Slide 13]
[RICK HOLMES]
So, the rad lab itself is essentially three stories of offices. So the fourth floor is the training center, which is intended to replace the training center that's located currently downtown. It will have a couple of simulated laboratories in it, meaning there's some equipment that people can get, get their training on. There are two full levels of office spaces: some hard-walled offices; some are cubicles.

[RICK HOLMES]
The first level has all of the radiological labs in it, in 26 modules. It's scope has not changed in terms of that. And in below grade in the basement, with the mezzanine in it, is all the utility infrastructure: the ventilation systems, etcetera, to run the laboratory, er run, run the building. Adjacent to the rad lab itself is a centralized utilities building. And that building provides for certain commodities: hot water, chilled water, those types of things that support the rad lab operations.

[RICK HOLMES]

Mello aff 3, par 19, ref 21b

9. Required D&D Information

As directed by the DOE Acquisition Executive at CMRR CD-0, NNSA and LANL developed a pre-conceptual cost and schedule range for the D&D requirements of the existing CMR Building located at TA-3 during the CMRR conceptual design. The initial pre-conceptual cost estimate range for D&D of the CMR Building is approximately $200,000,000 - $350,000,000 (un-escalated FY 2004 dollars) with an associated schedule estimate range of 4-5 years. This information was presented as part of CMRR CD-1 per Secretarial direction issued at CD-0.

During the 3rd Quarter of FY 2005, the D&D of the existing CMR facility received CD-0 in conjunction with CMRR CD-1 approval. Current Future Years Nuclear Security Program/Integrated Construction Program Plan (FYNSP/ICPP) funding profiles do not include the funding for the D&D of the CMR Facility. NNSA will not initiate CMR D&D activities until completion and operational start-up of the CMRR Nuclear Facility, currently projected to be operational well after the FYNSP budget planning window. As such, budget formulation for CMR D&D is premature for the FY 2011 budget submission. The inclusion of the D&D CMR Facility budget will occur upon the establishment of a project number and update of the FYNSP/ICPP in out year budget cycles.

The CMR D&D commitment is reflected in this CPDS for completeness. However, as planning for this D&D activity matures, NNSA may elect to enable this effort as a separate project, execute it as an element of a wider project or program for a portfolio of D&D activities at LANL, or bundle it with other, yet undefined activities.

Area	Gross Square Feet (gsf)
TA-55-400 (Radiological Laboratory & Office Building) TA-55-440 (Central Utility Building)	187,127 20,998
TA-55-500 (Security Category I/Hazard Category II Nuclear Facility)	406,000 (beneficial occupancy post FY 2018)
TA-3, Building 29 (CMR)	(571,458)
LANL "banked excess" necessary to offset one-for-one requirement	42,667

Name and site location of existing facility to be replaced: CMR (TA-3, Building 29)

When originally conceptualized, the replacement facilities for CMR, the RLUOB and NF, were thought to result in a significantly smaller space than the CMR facilities being replaced. However, owing to needs to meet modern health, waste, safety, and security functions, the combined space for CMRR is now expected to exceed the space for CMR.

CMRR has incorporated the NNSA Fiscal Year Banking of Excess Facilities Elimination, New Construction and Net Banked Square Footage reporting process that documents, through the DOE Facilities Information Management System (FIMS), the data associated with new construction added by the RLUOB and the NF. The new construction square footage is accounted for once beneficial occupancy is received and is subsequently offset with LANL "banked excess" additional D&D space to meet the "one-for-one" requirement within the FY 2002 Energy and Water and Water Development Appropriations Bill conference report (107-258). Given planned new construction (including CMRR) at LANL and planned excess facility reductions, the excess program is projecting it will have banked well

Chemistry and Metallurgy Research Replacement (CMRR)

Construction

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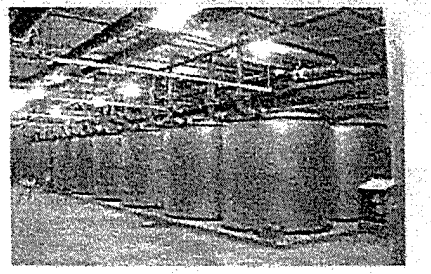


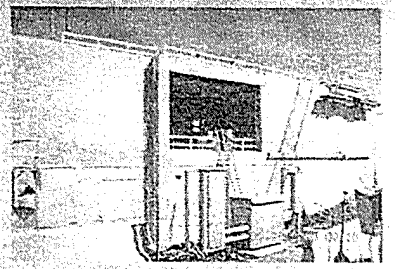
RLUOB Construction Scope

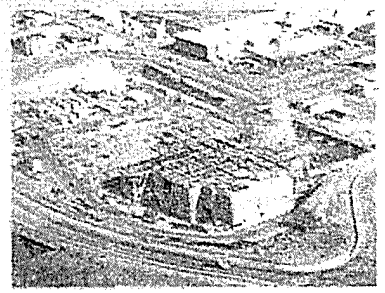
Laboratory - 19,500 sf of Radiological Space

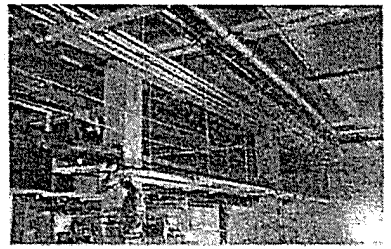
- Capability for 26 Lab Modules
- Laboratory spaces are designed to be flexible and modular
- 4 Lab Modules fitted out in ACCLP contract

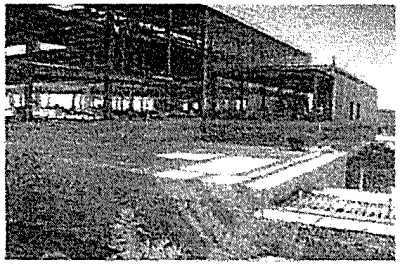
Centralized Utility Building - (RLUOB and Nuclear Facility)

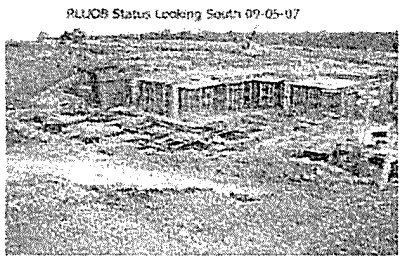
- Skid-mounted water treatment system
- Skid-mounted unit to produce de-ionized water
- Packaged boilers to produce heating water
- Chillers to produce cooling water
- Thermal energy (ice) storage unit
- A skid-mounted compressor system to produce compressed air
- Standard electrical power with diesel generated back up supply
- Specialty Gases: argon, helium, nitrogen, regen, & P-10

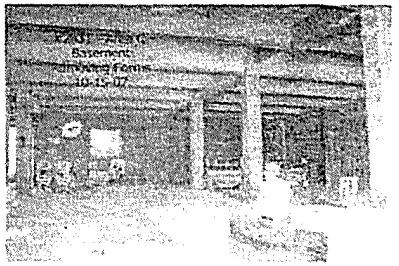












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Construction

RLUOB Construction Scope

Office space for 350 workers

Training Facility and 46 Trainer offices

- 4 classrooms capable of holding 25 trainees
- Space for 2 simulated Labs

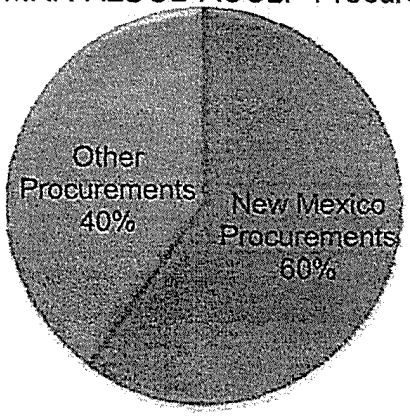
Facility Incident Command Center & Emergency Response Capabilities

Facility Operations Center

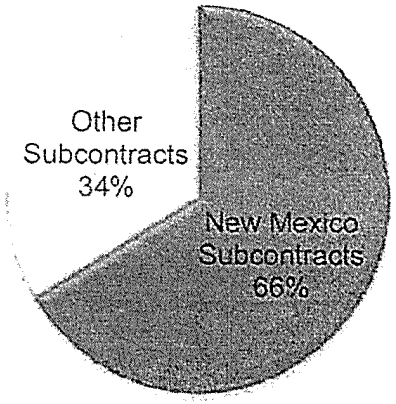
Construction Bulk Commodities

Structural Concrete	16,800 cubic yards
Structural Steel	1,010 tons SF: incl. rebar? probably.
Electrical Conduit and Raceway	197,000 linear feet
Electrical Wire and Cable	412,000 linear feet
Process Piping and Tubing	50,000 linear feet
Sheet Metal Duct Work	8,000 linear feet

New Mexico Procurements vs.
other CMRR RLUOB ACCLP Procurements



New Mexico Subcontracts vs.
other CMRR RLUOB ACCLP Subcontracts



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CMRR Project

CMRR Project: An Overview

The Chemistry and Metallurgy Research Replacement (CMRR) Project primarily supports Defense Program activities at Los Alamos National Laboratory (LANL). Costing $745M to $975M over 8 to 12 years, construction is planned in three phases:

A Radiological Laboratory Utility Office Building (RLUOB)

B Special facilities equipment, including long-lead equipment and instrumentation

C Nuclear Laboratory Facility

The CMRR Project will provide the capabilities the National Nuclear Security Administration (NNSA) and LANL need to continue the nuclear mission to maintain and certify the US nuclear stockpile through work in the following areas:

- Pit manufacturing, surveillance, and disassembly
- Enhanced surveillance
- Milliwatt radioisotope thermoelectric generator surveillance
- Retired stockpile component processing
- Aboveground subcritical experiments
- Special nuclear material readiness and materials storage
- Advanced design/production technologies
- Dynamic materials properties
- Material certification in a hostile environment
- Arms control and nonproliferation
- Advanced nuclear fuels

These analytical chemistry, materials characterization, and actinide research and development capabilities, currently housed in the 550,000 sq ft CMR building, will move to the new CMRR facilities as they are completed.

Phase A:

Radiological Laboratory Utility Office Building (RLUOB)

Phase B:

Special facilities equipment, including long-lead equipment and instrumentation

Phase C:

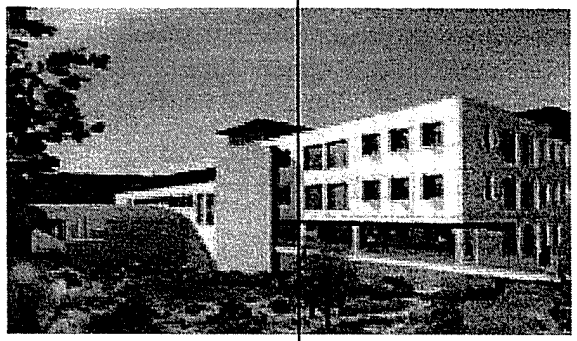
Nuclear Laboratory Facility

Phase A: Radiological Laboratory Utility Office Building

The RLUOB will house radiological laboratory space; a training center, 4 classrooms, and 2 nonradiological training simulation labs; a utility building that supports all CMRR Project facilities; and office space to support 350 personnel in segregated (cleared and uncleared) areas.

An Entrance Control Facility will connect a tunnel from the RLUOB to the Nuclear Laboratory Facility.

The RLUOB also will have a Facility Incident Command Center, an operations center, and space for future support of the existing Technical Area 55 Plutonium Facility, PF-4.



A design-build contract, a procurement method already successfully demonstrated at LANL, was issued to Austin Commercial Contractors, LP, of Dallas, TX, in November 2005.

The proposed RLUOB total project cost performance baseline is $164M (contract life is 1095 calendar days). Approximately 300 construction workers will be employed during the RLUOB contract.

Phases B and C

Preliminary design work is under way on Phases B and C. Construction work for Phase C is scheduled to begin in 2008 and is expected to be complete by 2013.

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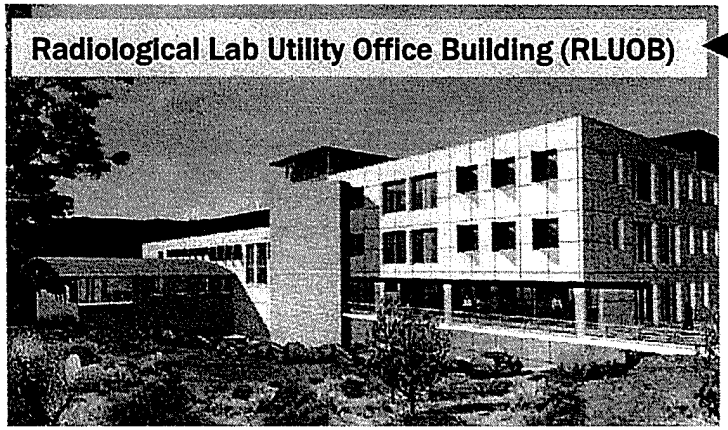
CMRR – Project Scope

CMRR Project

Radiological Lab Utility Office Building (RLUOB)



Facility Performance Baseline ($164M TPC):

- 19,500 nsf radiological lab space (<8.4g 239 Pu equivalent)
- Centralized utilities/services for all CMRR facility elements
- Office space for 350 CMRR workers
- Consolidated training facility
- Facility incident command; emergency response capabilities

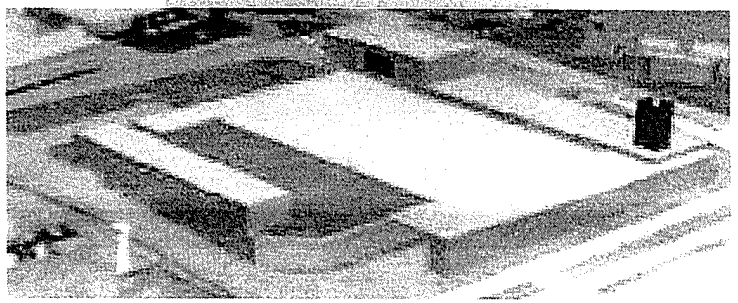
Status: In construction

RLUOB Equipment and Installation

- Lab Room Equipment and finishes
- Security Equipment & Telecommunications
- Final Lab Ops Tie-Ins & Lab filtration

Status: Design nearing completion, Procurement to begin this summer

Nuclear Facility (NF)



Baseline under Development:

- CMR Chemistry Replacement Capability
- 22,500 nsf lab space
- Special Nuclear Material storage (6M tons)
- Special Facility Equipment

Status: Preparation for Final Design Start

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CHEMISTRY & METALLURGY RESEARCH REPLACEMENT

Mello aff 3, par 20, ref 22b

04-D-125, Chemistry and Metallurgy Research Building Replacement (CMRR) Project, Los Alamos National Laboratory (LANL), Los Alamos, New Mexico Project Data Sheet (PDS) is for Construction

1. Significant Changes

The most recent DOE O 413.3A approved Critical Decisions (CD) are CD-1 for the Nuclear Facility (NF), Special Facility Equipment (SFE), and Radiological Laboratory/Utility/Office Building (RLUOB) phases of the project, and CD-2/3A for the RLUOB phase of the project. The CMRR CD-1 was approved on June 17, 2005 with a preliminary cost range of $745,000,000 - $975,000,000, although costs could be greater. Subsequently, the CD-2/3A for the RLUOB was approved on December 5, 2005, with a Total Project Cost (TPC) of $164,000,000. The NF and SFE are continuing with final design, while the Radiological Laboratory/Utility/Office Building is being executed with a design build contract. The TPC of the RLUOB is part of the overall CMRR Project preliminary cost range.

Based on continued examination of the project and recent, industry-wide experience related to the increases in the cost of construction of comparable facilities, the estimate for construction of the Nuclear Facility at CMRR is now viewed to be significantly higher. Initial estimates place the revised TPC above $2,000,000,000. A final cost estimate will be established when the Nuclear Facilities performance baseline is established at CD-2, which is estimated to occur during FY 2010. Funding profile reflected in Section 5 for the inclusive period of FY 2010 to FY 2013 is a funding placeholder for the construction which will be needed for the plutonium facility. This decision will result from the NEPA and PEIS process the NNSA is presently conducting.

A Federal Project Director with certification level IV has been assigned to this project.

This PDS is an update of the FY 2008 PDS.

Mello aff 3, par 26, ref 28

The project is being conducted in accordance with the project management requirements in DOE O 413.3A, Program and Project Management for the Acquisition of Capital Assets, and all appropriate project management requirements are being met.

Funds appropriated for this project may be used to provide independent assessments and other direct support determined necessary by the FPD for the planning and execution of this project.

5. Financial Schedule

RLUOB Facility

(dollars in thousands)

	Appropriations	Obligations	Costs
TEC			
FY 2004	9,941	0	0
FY 2005	39,684	49,625	0
FY 2006	54,450	54,450	15,933
FY 2007	41,933	41,933	29,364
FY 2008	13,122	13,122	50,085
FY 2009	0	0	58,348
FY 2010	0	0	5,400
Total, TEC	159,130	159,130	159,130
OPC[a]			
FY 2008	0	0	1,153
FY 2009	4,870	4,870	2,455
FY 2010	0	0	1,262
Total, OPC	4,870	4,870	4,870
Total Project Cost (TPC)			
FY 2004	9,941	0	0
FY 2005	39,684	49,625	0
FY 2006	54,450	54,450	15,933
FY 2007	41,933	41,933	29,364
FY 2008	13,122	13,122	51,238
FY 2009	4,870	4,870	60,803
FY 2010	0	0	6,662
Total, TPC	164,000	164,000	164,000

[a] OPCs for CMRR were not segregated by project phase until FY 2009. Aggregate OPCs for earlier years are reported with the NF.

	(dollars in thousands)		
	Appropriations	Obligations	Costs
OPC			
FY 2009	3,079	3,079	5,602
FY 2010	10,700	10,700	8,177
FY 2011	14,100	14,100	14,100
FY 2012	14,123	14,123	14,123
FY 2013	4,498	4,498	4,498
Total, OPC	46,500	46,500	46,500
Total Project Cost (TPC)			
FY 2007	11,489	11,489	2,959
FY 2008	21,613	21,613	9,410
FY 2009	8,077	8,077	10,672
FY 2010	50,700	50,700	68,177
FY 2011	73,100	73,100	69,561
FY 2012	29,923	29,923	34,123
FY 2013	4,498	4,498	4,498
Total, TPC	199,400	199,400	199,400

Nuclear Facility

	(dollars in thousands)		
	Appropriations	Obligations	Costs
Total Estimated Cost (TEC)			
PED			
FY 2004	9,500	0	0
FY 2005	13,567	23,067	1,848
FY 2006	27,910	27,910	19,147
FY 2007	14,161	14,161	27,213
FY 2008	0	0	15,079
FY 2009	0	0	-329
FY 2010	0	0	2,180
Total, PED (PED 03-D-103-01)	65,138	65,138	65,138
Final Design			
FY 2008	39,406	39,406	15,454
FY 2009	92,196	92,196	45,972
FY 2010	57,000	57,000	75,000
FY 2011	166,000	166,000	104,500
FY 2012	102,800	102,800	102,800
FY 2013	60,000	60,000	112,375
Total, Final Design (TEC 04-D-125)	TBD	TBD	TBD
Total, Design	TBD	TBD	TBD
Construction			
FY 2011	0	0	0
FY 2012	186,400	186,400	155,200
FY 2013	240,000	240,000	187,625
FY 2014	299,961	299,961	300,000
FY 2015	300,000	300,000	300,000
FY 2016	TBD	TBD	TBD
FY 2017	TBD	TBD	TBD
Total, Construction (TEC 04-D-125)	TBD	TBD	TBD

A capable fault is one that has had movement at or near the ground surface at least once within the past 35,000 years, or recurrent movement within the past 500,000 years (10 CFR Part 100, Appendix A). Therefore, the three major faults in Los Alamos County are considered active and capable per the U.S. Nuclear Regulatory Commission definition of the term as used for seismic safety.

3.5.1.3 Seismicity

Although the LANL region is within an intra-continental rift zone, the area demonstrates low seismicity compared to regions bordering on active continental plate boundaries such as southern California. For example, since 1973 only 6 earthquakes have been recorded within a 62-mile (100-kilometer) radius of TA-3 at LANL (USGS 2002a). In the same period, the San Francisco area experienced 1,161 earthquakes by comparison (USGS 2002b). The LANL-area earthquakes ranged in magnitude from 1.6 to 4.5 while the San Francisco-area earthquakes ranged from 1.0 to 7.1.

From 1873 to the present, 46 earthquakes have occurred within 62 miles (100 kilometers) of TA-3 at LANL (USGS 2002c). Recurrence intervals for these earthquakes ranged from same-day events to a maximum of about 20 years. The closest recorded earthquake to TA-3 occurred on August 17, 1952. The epicenter of this earthquake was located approximately 5 miles (8 kilometers) south-southeast of TA-3. This earthquake predated magnitude determination but had a reported Modified Mercalli Intensity (MMI) of V. For reference, Table A-6 in Appendix A shows the MMI scale of observed earthquake effects and compares it with measures of earthquake magnitude and peak ground acceleration. The largest recorded earthquake within 62 miles (100 kilometers) of TA-3 at LANL was the May 1918 Cerrillos Earthquake. The epicenter of this earthquake was located 31 miles (50 kilometers) southeast of TA-3 and had a reported MMI of VII. The most recent earthquake occurred on December 25, 1988, at a distance of 56 miles (90 kilometers) south-southeast of TA-3. The magnitude was measured at 2.8 (USGS 2002a).

Seismic hazard analysis demonstrates that the highest seismic hazard at LANL would be to a site built atop a trace of the Pajarito Fault (LANL 2001a). Along the Pajarito Fault system, an earthquake with a magnitude greater than or equal to 6 is estimated to have an annual probability of occurrence of once every 4,000 years. An earthquake with a magnitude greater than or equal to 7 is estimated to have an annual probability of occurrence of once every 100,000 years (LANL 1999).

Measures of peak acceleration indicate what an object on the ground would experience during an earthquake. This motion is expressed in units of gravitational acceleration (g). The hazard study of facilities in eight LANL TAs found that earthquakes having an annual probability of occurrence of once in every 10,000 years would cause a horizontal peak ground acceleration ranging from 0.53 g to 0.57 g (Wong et al. 1995). Further, the U.S. Geological Survey has developed seismic hazard metrics and associated maps that are used by the new *International Building Code*. The National Earthquake Hazard Reduction Program maps are based on the estimated natural periods of structural vibration due to earthquake activity and depict maximum considered earthquake (MCE) ground motions of 0.2- and 1.0-second spectral acceleration,

respectively, based on a 2 percent probability of exceedance in 50 years (corresponding to an annual probability of occurrence of about 1 in 2,500) (ICC 2000). The three alternative sites for the CMR Building are within a 1.25-mile- (2-kilometer-) wide area. Due to their proximity, calculated MCE ground motion values for the 3 sites are identical and range from 0.19 g for a 1.0-second spectral acceleration to 0.60 g for a 0.2-second spectral acceleration. The calculated peak ground acceleration for the given probability of exceedance at the site is 0.26 g (USGS 2002d). Maintenance and refurbishment activities at LANL are specifically intended to upgrade the seismic performance of older structures. Construction of new facilities must meet DOE Standard 1020-2002 that, in part, implements DOE Order 420.1, as superseded by DOE Order 420.1A. As stated in DOE Order 420.1A, DOE requires that nuclear or nonnuclear facilities be designed, constructed, and operated so that the public, the workers, and the environment are protected from the adverse impacts of natural phenomena hazards, including earthquakes. DOE Order 420.1A, Section 4.4, stipulates the natural phenomena hazards mitigation requirements for DOE facilities and specifically provides for the reevaluation and upgrade of existing DOE facilities when there is a significant degradation in the safety basis for the facility.

During seismic events, facilities near a cliff edge or in a canyon bottom below are potentially susceptible to slope instability, rock falls, and landslides. Slope stability studies have been performed at LANL facilities where a hazard has been identified. As for other geologic hazards due to seismic activity, the potential for land subsidence and soil liquefaction at LANL are considered low and negligible, respectively.

3.5.1.4 Economic Geology

No active mines, mills, pits, or quarries exist in Los Alamos County or at LANL. Rock and mineral resources, however, including sand, gravel, and volcanic pumice are mined throughout the surrounding counties. Sand and gravel are primarily used in construction for road building. Pumice aggregate is used in the textile industry to soften material. Pumice is also used as an abrasive, for building blocks, and in landscaping. The major sand and gravel quarry in the area is located in the lower member of the Puye Formation. The welded and harder units of the Bandelier Tuff are suitable as foundation rocks, structural and ornamental stone, or insulating material. Volcanic tuff has also been used successfully as aggregate in soil-cement subbases for roads.

3.5.2 Soils

Soils in Los Alamos County have developed from decomposition of volcanic and sedimentary rocks within a semi-arid climate and range in texture from clay and clay loam to gravel. Soils that form on mesa tops are well drained and range in thickness from 0 to 40 inches (0 to 102 centimeters). Those that develop in canyon settings can be locally much thicker. Soil erosion rates vary considerably at LANL due to the mesa and canyon topography. The highest erosion rates occur in drainage channels and on steep slopes. Roads, structures, and paved parking lots concentrate runoff. High erosion rates are also caused by past logging practices, livestock grazing, loss of vegetative cover, and decreased precipitation (DOE 1999a). The lowest erosion rates occur at the gently sloping central portions of the mesas away from the drainage

Mello aff 3, par 80, ref 53

The Proposed Chemistry and Metallurgy Research Replacement Nuclear Facility (CMRR-NF): New Realities Call for New Thinking

Greg Mello, Los Alamos Study Group, 2901 Summit Place NE Albuquerque, NM 87106, 505-265-1200, gmello@lasg.org

An objective study of alternatives, requiring a break in project momentum, is needed.

The first public reference to the CMRR is an announcement by Senator Bingaman's office in 1999 saying that the proposed CMRR "would not be 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."[1] That was then. The "needs of the lab" have greatly grown.

During the 1999 to 2004 period the Department of Energy (DOE) and the National Nuclear Security Administration (NNSA) persuaded themselves and others that a NF would be relatively quick and inexpensive. In February of 2001 Los Alamos National Laboratory (LANL) was planning a CMRR project priced at $375 million (M) *for two or more buildings* that would be complete in FY2007.[2] In February of 2004, the projected cost for CMRR, including 60,000 sq. ft. of Hazard Category (HazCat) II space and 60,000 sq. ft. of HazCat III space in a 200,000 gross sq. ft. Nuclear Facility and a separate radiological laboratory, utility, and office building (RLUOB), was $600 M, including $100 million (M) in administrative costs.

Today projected total CMRR costs are $363 M for RLUOB and a preliminary (3 years prior to baseline) $3.7 to $5.8 billion (B) for CMRR-NF, at least ten times as much as originally estimated. Gross CMRR-NF area has increased to 406,000 sq. ft. and usable space has contracted to about 38,500 (HazCat II) and zero (HazCat III), i.e. to 32% of before. Using the top estimate, HazCat II unit space cost in the new building has increased by more than a factor of 20 to $151,000/sq. ft. Lab space now costs up to $258,000/sq. ft.

The project is now not expected to be physically complete until at least 2020, a 13-year delay from the 2001 estimate and a decade later than planned in 2004. Full start-up and transition may require four additional years.

By contrast the late Cold War era PF-4 building, with 59,600 sq. ft. of HazCat II space, was completed in 1978 at a then-dollar cost of $75 M, or $251 M in today's dollars, or $4,211/sq. ft. – a factor of 61 less than CMRR-NF.

CMRR-NF maintenance costs are expected to be an order of magnitude greater than CMR, if not more.[3] Program and operating costs will be far higher as well.

In 1997, DOE presciently assessed CMRR-NF as impractical, expensive, and environmentally destructive.

> The construction and operation of a new facility was considered and DOE determined that it was not fiscally prudent...construction of a new facility would not meet DOE's need for...uninterrupted interim and ongoing radioactive chemical and metallurgical research activities at LANL. Planning, design, and construction of a new facility would take a minimum of 10 years [now 24 years] to complete....a new facility is estimated to cost more than twice as much as the proposed upgrades ($348 million vs. $123 million) [i.e. $473 M vs. $167 M in 2010 dollars]. In addition, the existing CMR Building would have to be decommissioned; incurring additional costs and [the] wastes generated would take up space in the LANL low-level radioactive waste landfill or other permitted waste disposal system.
>
> A new facility could disturb previously undisturbed land. New construction could potentially have adverse environmental effects upon water and air quality, biological resources, and possibly archeological resources. Because this alternative could potentially cause more environmental effects than the proposed upgrades estimated to cost more than twice the proposed upgrades, and would jeopardize DOE's requirement to maintain the uninterrupted operational capability to perform radioactive and chemical research, construction and operation of a new facility were not considered reasonable, and therefore, not analyzed further...[4]

In the years since its inception, CMRR-NF missions and costs have more than crept – they have vaulted. CMRR is not a "replacement" facility at all but rather the key new element in a rapid-response pit production complex that was thought unnecessary a decade ago.

Besides cost, schedule, and mission, many other pertinent circumstances have changed since this project began:

- Pits are now known to age so slowly as to be essentially ageless for current planning purposes. Additional aging data is presumably available, though not reported.
- Warhead retirements have created a long-lived pit/warhead cache with more reusable pits for each delivery system than are present in the deployed stockpile.[5]

---

[1] Ian Hoffman, "Bingaman Seeks Funds for Design of Weapons Facility," *Albuquerque Journal North*, 4/15/99, http://www.lasg.org/Pit_Prod.htm.

[2] LANL, *Ten Year Comprehensive Site Plan*, 2/9/01: http://lasg.org/CMRR/Litigation/LANL_Master_Project_List-FY2001.pdf.

[3] "In FY14 [sic – FY2023], the CMRR facility is planned to become operational. The CMRR maintenance budget is projected at approximately 2.5% of RPV [Replacement Plant Value] to sustain its condition. One of the challenges for the Laboratory and NNSA is to provide the funds necessary to meet this new maintenance funding demand." In FY07, total LANL maintenance spending was $88 M, of which $6 M was for the existing CMR building. LANL, *Ten-Year Site Plan, FY2008-FY20017*, LA-CP-07-0039, January 9, 2007, pp. 114-115. Study Group files.

[4] DOE, *Environmental Assessment for the Proposed CMR Building Upgrades at LANL*, 2/4/97: 24, http://lasg.org/CMRR/Litigation/CMR_upgrades_EA_4Feb1997.pdf.

[5] Greg Mello, U.S. Plutonium "Pit" Production: Additional Facilities, Production, Restart are Unnecessary, Costly, and Provocative, http://www.lasg.org/CMRR/Mello_pit_recommendations_2Mar2010.pdf.

- The current "Section 1251" report plans on increasing pit production capacity at PF-4 to 60 pits/year, prior to CMRR-NF.[6] NNSA's TA-55 Reinvestment Project (TRP) is aimed at realizing this. A task force of the former Secretary of Energy Advisory Board (SEAB) estimated efficiency of PF-4 operations at 5% or less.[7] PF-4 devotes perhaps one-third of its HazCat II space to pit production. Small space increases can enable large increases in production capacity, as bottlenecks are removed.
- NNSA is also building ~ $7 B in new plutonium infrastructure at the Savannah River Site (SRS), including a facility at K Area to recycle pits into purified metal, a major portion of the pit production mission. Like the acquisition of pit production capacity, the MOX mission is poorly-justified and has no urgency. If pit production were urgent, portions of the SRS infrastructure could be repurposed, first within K Area (as upgraded), and in a greater emergency within MFFF.
- Pit manufacturing makes and assembles ~ 2 plutonium parts. All other parts, and final assembly, do not require a HazCat II facility. Metal production need not take place at the same site or facility and in the past sometimes has not.
- Replacement warhead proposals were replaced with a policy prejudiced against pit replacement, leaving CMRR-NF without a compelling *raison d'etre*. There is no confident certification path for physics packages with replacement components, in contrast to life extension programs (LEPs) without that replacement. Non-nuclear LEPs can be conducted indefinitely with confidence. Pit production is counter-indicated as well as unnecessary.
- Belatedly-acknowledged requirements for safety-class systems have doubled overall CMRR-NF floor area and increased excavation depth by a factor of 2.5 or more. In 2009 NNSA stated CMRR-NF might be economically infeasible with these new standards.[8] It might be.
- Estimated frequency, magnitude, and acceleration from large earthquakes at LANL have dramatically increased, requiring extensive mitigation, including replacement of a 50-60 ft. geological stratum with concrete with attendant environmental and program impacts, costs, and delays. Seismic upgrades to CMR wings, including buttresses as previously planned, may however still be quite feasible.
- Over 19 years, DOE and then NNSA have never left the Government Accountability Office's (GAO's) Watch List for poor project management. NNSA, seeking to vest Congress in this project prior to the advent of increased fiscal discipline and/or accountability, now proposes to evade DOE's project management orders in multiple ways: by using a design-build process inappropriate to such a unique, high-risk facility; by dividing the project into five "chunks," each of which is proceeding on its own timeline as if it were a separate project; by evading National Environmental Policy Act (NEPA) compliance by proceeding with detailed design without an environmental impact statement (EIS) that objectively considers all non-CMRR-NF alternatives; and by limiting the scope of internal business-case reviews. The threat to seek up-front full project funding is an admission of perceived project instability and management risk.
- Since CMRR-NF was conceived the national security context has dramatically changed, impacting not only its relative national security value but also its likelihood of successful completion and subsequent safe operation. Financial instability, stagnant-to-negative real growth, looming inadequacies and/or high prices in oil supplies, climatic change with attendant impacts on society -- these and other looming crises cast a harsh light on gratuitous nuclear weapons investments. In this austere, even existential situation, DOE and Congress must choose between security investments. For example, ~ $6 B (for CMRR-NF and connected projects), if used as a 20% wind energy subsidy, would build ~ 12 GW of wind generating capacity with an average capacity factor of ~ 0.33 or more. Compared to coal this would save ~ 2 x 10^{10} lbs C emissions/yr and prevent ~ 500 deaths annually from air pollution. About 9,700 direct construction jobs and 1,554 long-term jobs would be created; ~ 6.6 billion gallons of fresh water would be saved annually.[9] Industries and skills would be developed, with long-term security and economic benefits. What marginal security benefit from CMRR-NF, assuming there is any, could ever measure up?
- CMRR-NF has been justified on grounds of maintaining (i.e. improving the low) morale at LANL. It is likely to have the opposite effect, especially as regards science.
- The advent of CMRR-NF halted seismic and most other upgrades at CMR on the theory that replacement was imminent. Since then CMR has been run toward failure, its safety problems insufficiently addressed. CMRR-NF has been and remains a potent cause of safety problems at LANL's nuclear facilities.
- NNSA's managers and advisors must avoid the pitfall of spending money and building huge facilities just for the sake of doing so, or as part of a political deal.

Please write or call for further information, or see http://www.lasg.org/CMRR/open_page.htm.

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[6] NNSA, *FY2011 Biennial Plan and Budget Assessment on the Modernization and Refurbishment of the Nuclear Security Complex Annex D*, Table D-2.

[7] SEAB Nuclear Weapons Complex Infrastructure Task Force, *Recommendations for the Nuclear Weapons Complex of the Future*, July 2005, pp. H-5,6

[8] "...the [NNSA's] CMRR Nuclear Safety Design Strategy...states that it may not be economically feasible to seismically design and qualify some components of the active confinement ventilation system or its support system to PC-3 seismic design requirements." DNFSB, letter to NNSA, 1/16/09. (CMRR certification), http://www.hss.energy.gov/deprep/2009/FB09J16A.pdf.

[9] DOE, "Economic Benefits, Carbon Dioxide (CO2) Emissions Reductions, and Water Conservation Benefits from 1,000 Megawatts (MW) of New Wind Power in New Mexico," at http://www.windpoweringamerica.gov/astate_template.asp?stateab=nm.

Table 1: All but one mission proposed for CMRR-NF could be done in multiple ways by renovating existing facilities. That mission – prompt large-scale pit production – is very costly, would erode stockpile confidence, is unsupported by current policy, and may be impossible.

(The suggested reasonable mission assignments below create *primary* CMRR-NF alternatives. *Secondary* alternatives would build a *different* CMRR-NF, e.g. smaller. *Tertiary* alternatives would build a CMRR-NF *in different ways.* Up-front and contingent assignments are both shown.)

CMRR-NF Mission Elements Most of these are far from clarified at present. Some are of very dubious value (e.g. larger pit production capacity). This list includes waste disposal, including disposal of demilitarized pits.	**Site and Facility** (■ signifies possible use, without necessarily an endorsement; ■? signifies possible use with greater uncertainty as to reasonableness; for ◊, □, and * see notes below)																
	LANL								**SRS**		**LLNL**						
	PF-4	**RLUOB**	**Upgraded CMR, 1 to 4 wings:**				**Sigma**	**Other**	**K Area**	**MFFF**	**Super-block**	**Pantex**	**INL**	**NTS**	**Industry**	**DoD**	**WIPP**
			9	**7**	**5**	**3**											
1. Pit production capacity 50 - 200 pits/year Inherent single-shift capacity of one pit production line – all that is needed – is assumed to be ~ 50 pits/year or ~ 80 pits/year with two shifts. Larger capacities require relatively modest additional space. More facilities may be needed under some alternatives. See "primary alternatives" in notes for more on contingent new production capacity in existing facilities, delayed acquisition of new capacity, enhancements of existing facilities, and clearer pit and stockpile policies.																	
a. Receive, inspect, assay, and store old pits	■		■	■	■				■	◊	□		■?				
b. Disassemble old pits	■		■	■	■				■	◊	□		■?				
c. Recover, process, and prepare metal	■			■	■				■	◊	□		■?				
d. Cast and machine new plutonium pit	■									◊	□		*				
e. Fabricate other pit components							■	■?					■		■		
f. Measure and certify components	■			■	■	■	■	■?		◊	□		*		■		
g. Assemble new pit	■			■	■	■	■	■?		◊	□		*				
h. Ship or store new pit				■	■	■	■	■?	■	◊	□		*				
i. Recover scrap and residues	■			■	■	■			■	◊	□		*				
2. Pu storage																	
a. (Additional) working storage for pit production	■								■		□						
b. (Additional) long-term storage (see also 9a.)	■								■			■	■	■		■	
3. "Analytical chemistry" (will be moved to RLUOB)		■				■		■	■?	◊							
4. "Materials characterization" (already moved to PF-4)	■	■	■	■	■				■?	◊	□						
5. Hot cell activities (not proposed for CMRR-NF)			■														
6. Large vessel preparation and cleanout (now in Wing 9)			■	■	■									■			
a. Purification of Pu-242 or other materials if necessary	■			■	■												
7. Pit production technology development if necessary	■									■	■		■				
8. Other HazCat II plutonium missions	■		■	■	■				■	■	■		■				
9. Nuclear waste disposal																	
a. Pits (as demilitarized, vitrified Pu, or via MOX)			■	■	■				■	◊		■		■			■
b. Other Pu (TRU, LLW) waste disposal								■	■				■?	■	■		■

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Table 1 (co. .ued). Notes (1): Primary alternatives to CMRR-NF inc. . but are not limited to the following, with variations:

1. **Upgrade and use from one to three CMR wings**, with Wing 9 and supporting systems remaining in any case; combine with appropriate other facility use and underlying policy decisions as appropriate; several options are possible. Structural upgrades, including buttresses, as augmented from previous plans may be feasible and if so be economic, rapid, and incur less program impact, risk, and CMR D&D.
2. **Delay decision** on CMRR-NF, possibly pursue later if needed, thus deferring high maintenance expenses (~2.5% of capital cost per annum, i.e. ~$145 M/yr) and other operating expenses and thus saving net present value even if design re-start costs are considered, while at the same time minimizing risk of unneeded capital investment.
3. **Contingent pit production** centered at LANL but possibly also involving other sites for higher production rates; establishes priorities for redirecting existing Pu HazCat II/III space (as renovated independently) and otherwise-planned capacity under specified conditions. Many variations are possible.
4. **Internal physical and/or programmatic modifications at PF-4, possibly including moving Pu-238 work to existing and new facilities at INL**, liberating PF-4 space. Indirect INL enhancement of PF-4 capability is indicated by * above.
5. **Enhance facilities at other sites for pit production mission elements**, e.g. the K **Area** Complex at SRS, or INL, for pit recycling, metal production, (steps a. – c. above), and for Pu and pit storage.
6. **RLUOB modifications**, e.g. to HazCat III or higher for specific uses, or possibly for transient or sporadic uses, or as an element of contingency plans.
7. **Use LLNL Superblock as a HazCat II facility as part of contingency plans,** indicated by □ above.
8. **Planned contingent redirection of parts of MFFF** for pit production elements or to take missions from PF-4 as indicated by ◊ above.
9. **Clarify pit policies**, e.g. establish policies of a) **LEPs without pit production**, with non-intrusive cross-type pit reuse (Pantex) as back-up in selected cases; **(b) keep a retired warhead and/or pit bank**; **(c) abjure attempted certification of new-design pits or replacement warheads**; **(d) limit required pit production rate**; **(e) require only one production line**; **(f) retire some pit types** (e.g. W88); and **others**.

Evaluate alternatives for: effectiveness in maintaining *the existing* stockpile; cost; management risk; implementation speed; environmental impact; morale; and diplomacy.

Prompt, large-quantity pit production without commandeering non-pit space at PF-4 and elsewhere should be evaluated separately given its uniquely large, dominating infrastructure demands and lack of justification in current policy.

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Notes (2): The assumptions used for all the primary .ernatives at left, which include any "no action" under NEPA, are roughly:

1. RLUOB is completed as planned; The TA-55 Reinvestment Project (TRP) proceeds as described in DOE's FY2011 Budget Request.
2. All outstanding safety and seismic issues are promptly and successfully addressed at PF-4 and supporting facilities. This may not be easy, raising systemic safety and efficiency questions affecting CMRR-NF.
3. Successful interim safety upgrades and safety-related interim operational changes are made in all operating CMR wings under all circumstances, even if CMR is to be torn down in the 2023-2026 timeframe. These upgrades can be done faster, with more confidence, and far more cheaply than CMRR-NF construction.
4. CMR wings 1, 2, and 4, which lie on and near an active earthquake fault, and which are not needed now, will not ever be used, and will be maintained in "safe standby" pending disposition, which can proceed.
5. The LANL RLWTF is upgraded as needed; adequate solid radioactive waste management facilities are provided; and other supporting infrastructure needs at LANL are met.
6. A fully-functional production pit line is set up, staffed, and operated at PF-4, with provision for contingent expansion at critical bottlenecks. This does not require stockpile production. Right-size the program.
7. Under sufficient need to prioritize production and improve management, and with needed renovations and time for re-tooling in proportion to need, PF-4 could produce up to 125 pits/yr, single shift, or 200 pits/yr with two shifts. Front-end work (a. – c. above) could be done at K Area, SRS.
8. MOX fuel PuO2 production at PF-4, if (uselessly) begun, is concluded prior to any large-scale production, liberating space.
9. Existing facilities (specifically PF-4 and needed CMR wings) can be fully upgraded for at least 20 more years of life, which provides 5-10 years of decision time to evaluate any future CMRR-NF need. Quite likely upgrades can be planned (as previously) to last for 30-40 years with appropriate maintenance. Solid safety investments with near-term benefits are valued highly. Projects with contingent need which can be built within a warning horizon should be deferred.
10. Relative life-cycle present-value costs of alternatives matter, and should be minimized where possible.
11. Stockpile pit surveillance and pit longevity studies are continued and enhanced as necessary.

Mello aff 3, par 81, ref 54 & 82

CMRR-NF Supplemental EIS Scoping Meeting October 19, 2010 / White Rock Town Hall, White Rock, NM		
Written Comments (transcribed)		
061	Joni Arends	The meeting format does not work. One of the purposes of the scoping meeting is for the public to hear the concerns of other community members. The people of N. NM have a strong oral tradition where people learn by listening to others. We request a "classroom" type format, such as that used during the draft document hearing process. A format which does not facilitate such opportunities stifles the democratic process. How do we obtain copies of the posters? I would appreciate color copies be provided at scoping meeting in Pojoaque in an 8 ½ x 11 or 8 ½ x 14 format. We request a 30 day extension of the comment period. We request public scoping meetings in Albuquerque, Santa Fe, and Taos during the 30 day extension of time to provide comments.
Comments Entered in the Computer		
082	Ms. Jody Benson	Socio-economic considerations: The County is currently exploring developing all County, as well as School-owned green space for housing. It is critical that the County knows as soon as possible the number of the proposed work force who would be from out of the area and who would actually require housing. We also need to know what the wages would be: heads-up--housing in Los Alamos is extremely expensive. Los Alamos government needs to know what housing (temporary/permanent/income-level) to focus on in our development. Also, the Schools need to know this information; wages would certainly determine where the families would live, and therefore direct the schools for their own educational specifications. In addition, it is critical that the project first seeks to employ people from N. NM, rather than importing workers from elsewhere. The project can inform the communities of what skills will be required, and then the local educators and governments can encourage the local colleges to train workers to what the projected jobs will be. A partnership between the project and the local leaders will be essential to economic and social development of the region. ENVIRONMENTAL: The proposed parking in Sandia Canyon for the crafts and trade workers where they would transfer to busses for transport to the work site; if the workers are to be bussed, and many would not live in Los Alamos, then a regional transit/parking area would protect the canyon, save the commuters gas, and if parking were around a commercial area (i.e., Pojaoque) increase the business in that area. The ideal parking would be to share parking (pay the business--Casinos, for example), rather than increase parking that would not be necessary after the project terminates. Supporting regional transit--for example, including a transportation plan in the budget, would be important.
074	Dr. Richard Martin	Having viewed a number of posters and spoken to several topic experts about the CMRR (CMR replacement) facility this afternoon and evening (3:30 to 6:30 on 10-19-10), I am very favorably impressed. I am impressed by the presentation, expertise of the staff answering questions, and impressed by the available methods for public feedback. This is an example of DOE getting the process right, namely, using a more informal opportunity for the public to provide initial input to an SEIS. Good job!

This comment was sent by email, not typed in as stated

#	Name	Comment
006	David Torney	Los Alamos Lab is the wrong location for a plutonium plant. You may find it expedient, but there are too many people nearby. DOE has locales suitable for a plutonium plant, for instance, the Nevada Test Site. The lab already contains superfund sites, and, rest assured, until the mess you already made is cleaned up, you won't be allowed to build anything there. If this plant is the sine qua non for Los Alamos Lab, then close it. As you will soon find out, no longer will patrons of nukes in Congress cram things down our throats which aren't good for us -- or for the environment
007	Richard L. Geddes	**Comments on Supplemental EIS for the** **Nuclear Facility Portion of the CMR Building Replacement Project** The four alternatives proposed in the NOI do not represent a comprehensive set of alternatives, or even a reasonable range of alternatives as required by NEPA legislation. In the period (more than a decade) since the original Record of Decision of the Stockpile Stewardship and Management Programmatic Environmental Impact Statement assigning responsibility for pit manufacturing to Los Alamos, it has become clear that LANL has no capability to produce more than a demonstration quantity of pits without major construction. The 1996 ROD selected LANL for pit manufacturing because the capability to produce up to 50 pits per year there would be cheaper than anywhere else, *("construction costs for providing a limited pit fabrication capacity (50 pits/yr) are less at LANL ($310 million in 1995 dollars) than at SRS (about $490 million)"*, and faster, *"the LANL capability would be in place at least two years earlier"* Despite the fact that costs to establish this capability are now more than 20X what was used to inform this decision, and the schedule to have capability to manufacture more than a handful of pits per year is still decades away, NNSA continues to pursue this elusive dream. Now all it takes is constructing CMRR-NF. According to the 2008 Complex Transformation EIS ROD - "With a new CMRR–NF providing support, the existing plutonium facility at LANL will have sufficient capability to produce between 1 and 80 pits per year." NNSA says it is necessary to spend another $5 billion or more, on top of the billions spent since 1996, then maybe in 15-20 years we will have limited pit manufacturing capability. However this capability will still be reliant on aging and suspect capability in PF-4, a facility needing substantial future upgrades and compensatory measures to achieve adequate levels of safety, security, and environmental protection, much less operational capability and reliability. Alternatives for this Supplemental EIS considering only variations of CMRR at LANL to create pit manufacturing capability are ignoring what most external observers, probably including NNSA officials off-the-record, would admit – Trying to make the Los Alamos National Lab and its research facilities a pit manufacturing plant was a bad idea from the start. Cost and schedule figures were biased for political purposes. The true story is emerging and in NEPA space leads to the conclusion that a **valid analysis needs to reopen the decisions of the Programmatic documents and consider non-LANL options for pit manufacturing.**
008	Elizabeth Lerer	I am a Southern California resident and love when I have the opportunity to visit beautiful New Mexico. I am emailing you now as an individual concerned with how tax payer dollars are used in the United States. Quite simply, a supplemental environmental impact statement appears to be a waste of time when the scope of the CMRR-NF project has undergone vast changes since the original impact statement was produced . These changes have so altered the original CMRR project that an entirely new environmental impact statement is what is needed. Can we do a better job honoring our people, our land, our ecosystems that we love and choose to take care of? Please consider insisting on a fresh environmental impact statement that accurately reflects what you are asking the American tax payers to fund and what the people of New Mexico will be forced to live with.

UCRL-LR-125078

Mello aff 3, par 83e, ref 55 & 56

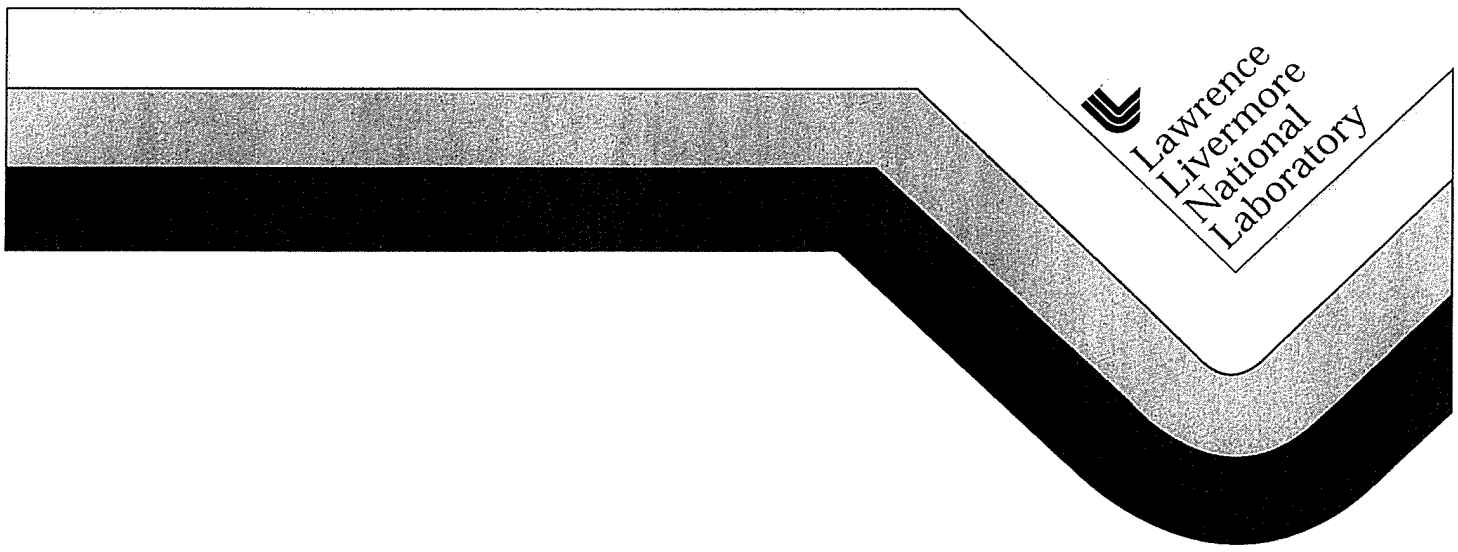
Plutonium Pit Manufacturing Unit Process Separation Options for Rapid Reconstitution

A Joint Position Paper of Lawrence Livermore National Laboratory and Los Alamos National Laboratory

Mark M. Hart
Lawrence Livermore National Laboratory

Warren T. Wood and J. David Olivas
Los Alamos National Laboratory

September 6, 1996



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Plutonium Pit Manufacturing

Unit Process Separation Options for Rapid Reconstitution

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Plutonium Pit Manufacturing

Unit Process Separation Options for Rapid Reconstitution

A Joint Position Paper of the
Lawrence Livermore National Laboratory
and the
Los Alamos National Laboratory

September 6, 1996

Scope

This document addresses technical issues regarding the manufacturing processes involved in making plutonium pits. It addresses acceptable approaches from a technical standpoint as to how the manufacturing processes can be separated and distributed among different manufacturing sites. Site selections, costs, and intra-site transfers are not addressed in this document.

Introduction

At the request of the Department of Energy Albuquerque Office, Lawrence Livermore National Laboratory and Los Alamos National Laboratory have analyzed the plutonium pit manufacturing process. The nuclear design labs (Labs) have determined logical break points in the manufacturing process where the sequence can be separated among sites without inherently jeopardizing product quality.

Production of pits can be broken up into two major component categories, non-nuclear and nuclear. At the completion of the manufacturing process, the components are integrated into a single unit. Non-nuclear components, either unclassified or classified, are relatively easy to handle, ship, and receive. They are relatively chemically inactive, in that they are unlikely to oxidize or undergo surface chemical reactions that would affect the quality or usefulness of the part. They are not radioactive, decreasing shipping requirements and making them relatively easy to inspect when received. Non-nuclear parts can be manufactured at existing DOE facilities or outside commercial facilities.

Nuclear components are by definition radioactive and typically exhibit chemically active surfaces, which can lead to surface corrosion and oxidation. Every step that potentially exposes nuclear materials to a non-inert environment can influence the quality and usefulness of the part in successive production steps.

The radioactivity and chemical reactivity of the product necessitates approved packing procedures, approved shipping containers, and special procedures when shipped, to facilitate any receiving inspection requirements. The following issues are common to each site engaged in process transfers:

- Transfers between manufacturing sites will require approved shipping containers for the items shipped.
- Transfers between manufacturing sites will require approved packing, unpacking, and inspection procedures.
- Transfer activities will affect worker ALARA radiation dose.
- Transfers will require nondestructive analysis, plutonium measurements on the shipping and receiving ends.

Discussion

The main pit manufacturing operations (excluding non-nuclear operations) are shown in Figure 1. These are:

- Disassembly - the dismantling of a plutonium pit assembly
- Metal Preparation - removal of the americium and purification of the plutonium metal
- Foundry Operations - melting, casting, and heat treating plutonium metal parts to be machined
- Machining - removing extra metal from the cast part to the final dimension
- Assembly - joining all parts to make a complete pit
- Post Assembly - final treatment and closure of the pit

The pit manufacturing process steps listed have been evaluated in terms of whether it is technically possible to **complete a given step** at one site and transfer it to the next process step at another site. Table 1 shows the pit manufacturing process steps that were considered for partitioning between manufacturing sites. The table shows:

(1) the unit operations,
(2) if splitting the manufacturing process after the completion of a listed unit operation is technically possible,
(3) support operations which are necessary at the site carrying out a given unit operation, and
(4) the Labs' recommendation on whether splitting the process at the completion of the step is acceptable.

The Labs' recommendations are based on the pros and cons associated with separating the sequence of unit operations. These pros and cons are listed in Appendix A.

It can be seen that it is technically possible to break the pit manufacturing process into a number of transfers among sites. However, history has shown that transfer after certain process steps may not be technically reasonable, feasible, or acceptable to both nuclear design laboratories.

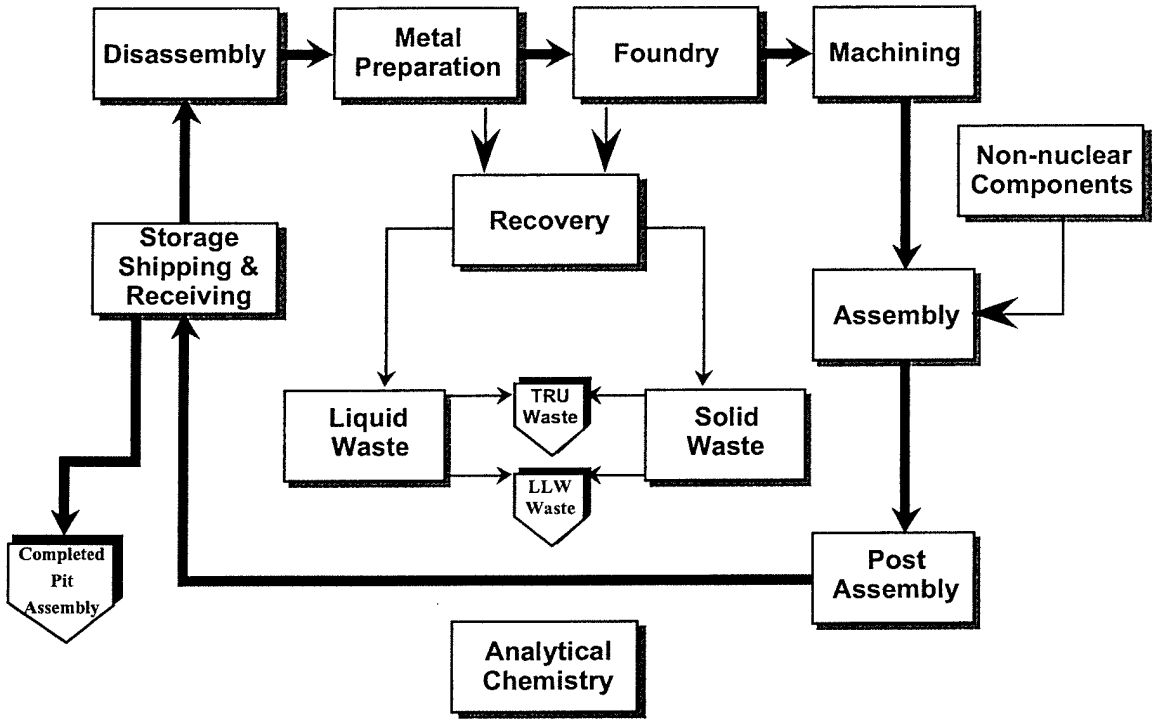


Figure 1

Pit Fabrication Flowsheet
(taken from LANL document: NMSM:96-097, July 26, 1996)

Table 1

Process Separation Under Rapid Reconstitution

(1) **Completion of listed step and transfer to next process step:**	(2) **Technically Possible**	(3) **TRU support operations for process step †**	(4) **Acceptable to both nuclear design laboratories**
Disassembly			
Pit dismantlement	yes	1, 2, 3, 4	yes
HYDOX - hydride and oxidize to plutonium oxide	yes	1, 2, 3, 4	yes
HYDEC - hydride and reduce to metallic plutonium	yes	1, 2, 3, 4	yes
Metal Preparation			
Reduction of plutonium oxide to plutonium metal	yes	1, 2, 3, 4	yes
Plutonium purification	yes	1, 2, 3, 4	yes
Americium extraction	yes	1, 2, 3, 4	yes
Foundry			
Foundry - cast plutonium feed ingots	yes	1, 2, 3, 4	yes
Foundry - cast plutonium components	yes	1, 3, 4, 5	yes
Machining plutonium components*	yes	3, 4, 6	no
Non-nuclear Components Coating	no	none	no
Assembly			
Assembly & Welding	yes	3, 4	no
Bonding	yes	3	no
Post Assembly	yes	3	yes

† 1) Plutonium analytical chemistry; 2) Plutonium recovery; 3) LLW handling; 4) TRU waste handling; 5) Plutonium metallography; 6) Radiography. Non-nuclear support requirements are not listed.

* Will require provisions for safely handling plutonium metal turnings by either (1) briquetting and melting into metal ingots or, (2) calcining into oxide powder.

Conclusion

The Labs agree that the ideal approach to pit manufacturing would have all manufacturing operations at one location. This would enable single-point responsibility and authority over all manufacturing operations, and would minimize duplicating support operations such as analytical chemistry, plutonium recovery, and waste handling. In the event that this ideal approach cannot be accommodated, it is technically possible to separate the manufacturing sequence between most unit operations with the exception of non-nuclear component coating, which must remain at the same site as assembly. However, from the standpoint of successfully accomplishing the pit production mission, the options are constrained.

Based on the analysis of the advantages and disadvantages associated with splitting the pit manufacturing processes between sites, the Labs make the following recommendations for feasible process separation, designated by broken lines in Figure 2.

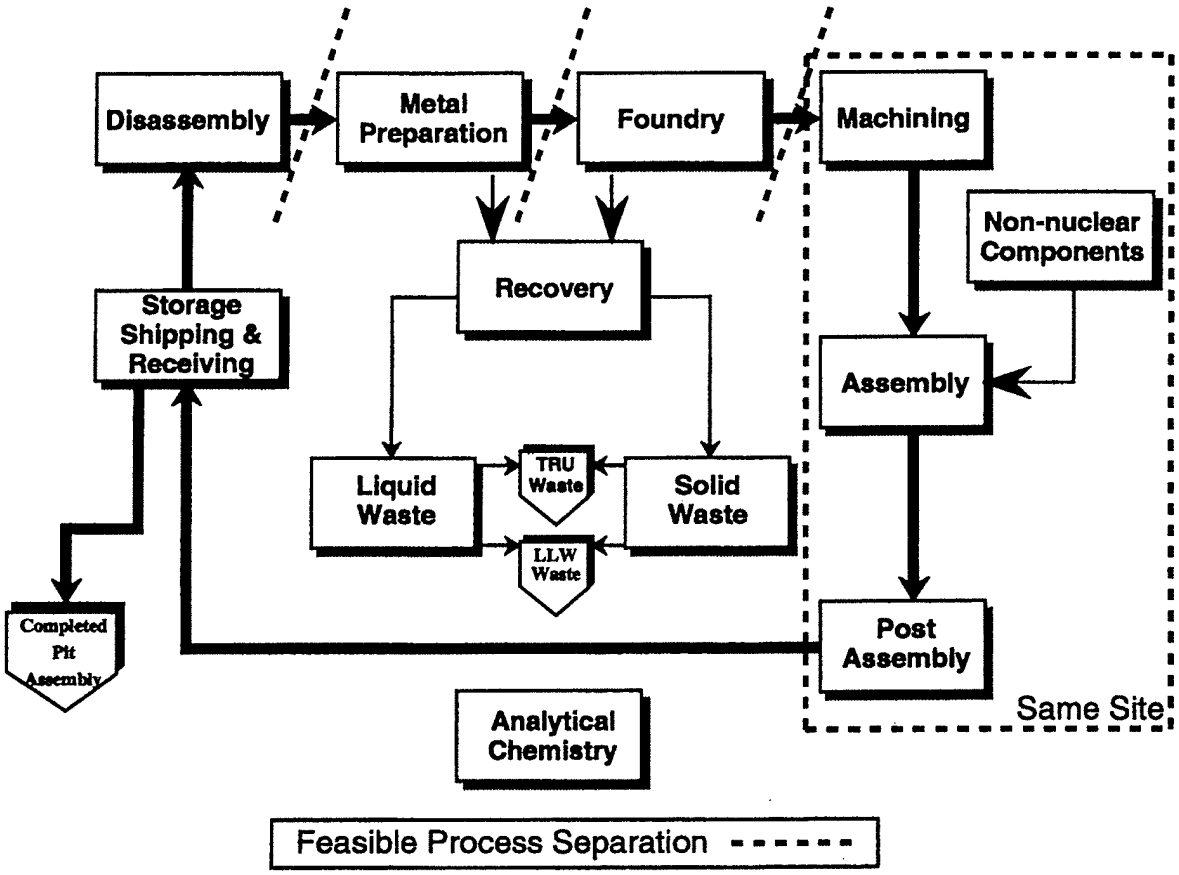


Figure 2

Laboratory Recommendations

The following processes can be completed at one site and handed off to another site without jeopardizing product quality:

- Pit dismantlement
- Hydride and oxidize to plutonium oxide
- Hydride and reduce to plutonium metal
- Reduction of plutonium oxide to metal
- Plutonium purification
- Americium extraction
- Foundry - cast plutonium feed ingots
- Foundry - cast plutonium components

To ensure product quality, the following processes must be completed sequentially at the same site:

- Machining of plutonium components
- Non-nuclear components coating
- Assembly & welding
- Bonding
- Post assembly

Though this analysis is not directing how the processes be located among sites, it can be seen that there is an advantage to locating processes requiring like support operations either at one site, or sites already possessing those capabilities. For example, economies would be achieved by locating operations requiring analytical chemistry and plutonium recovery (those operations listed in Table 1, footnoted 1 and 2 in the third column) at a single site or at sites possessing those capabilities.

APPENDIX A

EVALUATION OF PROS AND CONS ASSOCIATED WITH SPLITTING PIT MANUFACTURING OPERATIONS AMONG SITES

The following table provides more information on the technical advantages and disadvantages associated with locating pit manufacturing operations at more than one site. Based on the technical advantages and disadvantages, an assessment was made as to whether or not the manufacturing process should be split between particular operations.

A general con associated with splitting the manufacturing operations at any point is the need to transport the SNM between sites. This may result in higher costs due to the additional packaging, waste generation, and accountability measurements. The increased number of times that SNM is handled will increase worker population exposure to radiation.

Disassembly - Pit Dismantlement

PROS: Dimensional quality of dismantled pit is not important. No damage of any consequence should occur to the product during handling or transit.

CONS: None noted

EVALUATION: Acceptable - no effect on product quality.

Disassembly - Hydride and Oxidize to Plutonium Oxide (HYDOX)

PROS: No damage of any consequence should occur during handling or transit.

CONS: None noted

EVALUATION: Acceptable - no effect on product quality.

Disassembly - Hydride and Reduce to Plutonium Metal (HYDEC)

PROS: No damage of any consequence should occur to the product during handling or transit. Working with a metal product does not use calcination as a process step. There is no requirement for high purity at this stage.

CONS: None noted

EVALUATION: Acceptable - no effect on product quality, metal easily packed and measured.

Metal Preparation - Reduction of Plutonium Oxide to Metal

PROS: No damage of any consequence should occur to the product during handling or transit. Working with a metal product does not use calcination as a process step. There is no requirement for high purity at this stage.

CONS: None noted

EVALUATION: Acceptable - no effect on product quality. Metal easily packed and measured.

Metal Preparation - Plutonium Purification

PROS: Shipping of purified plutonium has taken place between the Savannah River Plant, Rocky Flats Plant, Lawrence Livermore, and Los Alamos in the past without incident.

CONS: None noted

EVALUATION: Acceptable - no effect on product quality. Metal easily packed and measured.

Metal Preparation - Americium Extraction

PROS: Shipping of purified plutonium has taken place between Savannah River Plant, Rocky Flats Plant, Los Alamos, and Lawrence Livermore in the past without incident.

CONS: None noted

EVALUATION: Acceptable - no effect on product quality. Metal easily packed and measured.

Foundry - Cast Plutonium Feed Ingots

PROS: Redundant foundry system and expertise will be present in the complex. This provides back-up capability.

CONS: Duplicate foundry and expertise in the complex increases costs.

EVALUATION: Acceptable - no effect on product quality. Metal easily packed and measured.

Foundry - Cast Plutonium Components

PROS: Cast parts have been shipped during R&D operations between Los Alamos and the Rocky Flats Plant. Also, facilities to support plutonium analytical chemistry and metallography should only be required at the foundry facility.

CONS: There is a need for a foundry and/or a calcining operation to handle plutonium turnings at machining site. Calcining of the turnings is the least desirable option because of the need for an additional recovery step to convert the oxide back to metal. Foundry operations must be able to accommodate handling oxide and crucible skull from the melt operations.

EVALUATION: Acceptable - no effect on product quality. Provisions must be made to pack the cast components in a manner that provides protection from damage due to physical impact or surface corrosion.

Machining

PROS: Machined parts have been shipped during R&D operations between Los Alamos, Rocky Flats Plant, and Lawrence Livermore.

CONS: Minor damage to high-tolerance parts will increase scrap.

EVALUATION: Machining is the first step in a series of processes that cannot be separated. It is unacceptable to have the following process located at another site. Product quality and process yield can be easily jeopardized. Very small changes in the dimensions of the finished machined part can cause scrap.

Non-nuclear Components Coating

PROS: None noted

CONS: Coating quality degrades with time.

EVALUATION: It is unacceptable to have assembly and welding located at another site. Product quality and process yield can be easily jeopardized.

Assembly and Welding

PROS: None noted

CONS: Interruption of process flow at point prior to sensitive operation.

EVALUATION: For applicable pits, completing the bonding process on a timely basis is of highest priority.

Bonding

PROS: None noted

CONS: Interruption of process flow at point prior to sensitive operation.

EVALUATION: Getting the pit to its final sealed configuration on a timely basis is of highest priority.

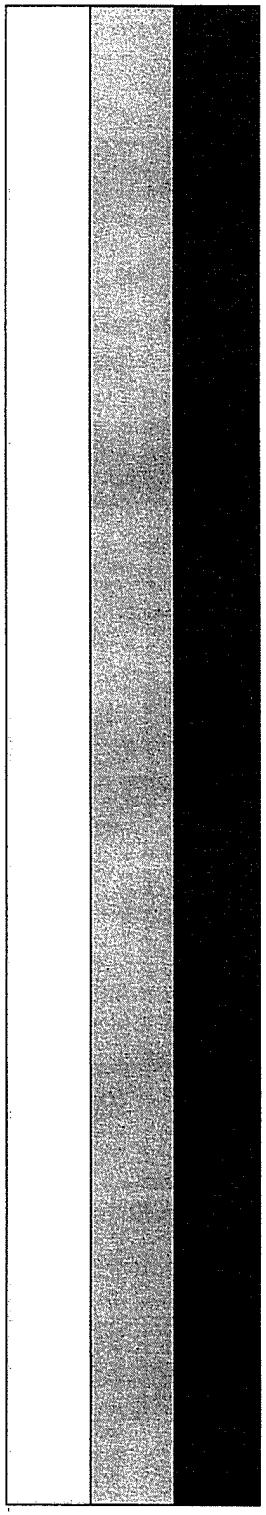
Post Assembly

PROS: Diamond stamped pits have been shipped between the Rocky Flats Plant and Pantex.

CONS: None noted

EVALUATION: It is acceptable to ship the finished pit to another site after completion of this operation.

Technical Information Department • Lawrence Livermore National Laboratory
University of California • Livermore, California 94551



IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF NEW MEXICO

THE LOS ALAMOS STUDY GROUP,

Plaintiff,

v. Case No. 1:10-CV-0760-JH-ACT

UNITED STATES DEPARTMENT OF ENERGY; THE HONORABLE STEVEN CHU, in his capacity as SECRETARY, DEPARTMENT OF ENERGY; NATIONAL NUCLEAR SECURITY ADMINISTRATION; THE HONORABLE THOMAS PAUL D'AGOSTINO, in his Capacity as ADMINSTRATOR, NATIONAL NUCLEAR SECURITY ADMINISTRATION,

Defendants.

AFFIDAVIT OF FRANK N. VON HIPPEL

State of New Jersey)
) ss.
County of Mercer)

Frank N. von Hippel, under penalty of perjury, hereby declares as follows this 6th day of January 2011:

1. My qualifications to address matters relating to U.S. nuclear-weapon policy are as follows: My training is in theoretical nuclear physics (Rhodes Scholar and Oxford University PhD, 1962). Since 1974, I have been on the research staff and faculty of Princeton University, currently as a Professor of Public and International Affairs. I co-founded and am still a Principal Investigator in Princeton's Program on Science and Global Security (formerly, the Program on Nuclear Policy Alternatives) where a major

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focus of my research has been on technical aspects of U.S. nuclear-weapon policy. From September 1993 through December 1994, I was on leave as Assistant Director for National Security in the White House Office of Science and Technology Policy. For five years (1995-2001), I was a member of the External Review Board of LANL's Nonproliferation and International Security Division. I co-authored the American Physical Society's [the APS is the professional society of American physicists] 2004 assessment of the National Nuclear Security Administration's (NNSA) need for a Modern Pit Facility [*The Modern Pit Facility (MPF). No urgency for a MPF. Address key technical issues before proceeding*, http://www.aps.org/policy/reports/popa-reports/upload/pit_facility.pdf]. Since 2006, I have been co-chair of the International Panel on Fissile Materials, an international organization that advises the public and governments about the technical basis for possible policy initiatives to control and eliminate plutonium and highly enriched uranium, the two essential nuclear-weapon materials. The American Institute of Physics has published a collection of my articles on public policy in its "Masters of Modern Physics" series and, in 2010, I was awarded the APS 2010 Leo Szilard Lectureship Award for "outstanding work and leadership in using physics to illuminate public policy in the areas of nuclear arms control and nonproliferation, nuclear energy, and energy efficiency."

2. I make this affidavit in support of the Los Alamos Study Group's Motion for Preliminary Injunction. I am a member of the Los Alamos Study Group.

3. The Chemistry and Metallurgy Research Replacement (CMRR) project involves the construction of two facilities. The first, which is nearing completion, will

provide office and laboratory space needed to continue the study of the properties of plutonium and its behavior in the "pits" of US nuclear-weapon "primaries". The primary justification of the proposed second building, the Nuclear Facility (NF), is to support the mission of the TA-55/PF-4 facility at Los Alamos National Laboratory (LANL) to make plutonium pits. Since the 2003 Environmental Impact Statement, the estimated cost of the CMRR-NF has increased ten-fold while the usable space for plutonium work has been reduced by two thirds. It is difficult to believe that, had these increased costs and reduced capabilities been included in the 2003 EIS, the CMRR-NF would have been chosen over the alternatives. Fortunately, it is not too late to review its role and alternatives to its construction at this time.

4. The timing of the Obama Administration's decision to make a firm commitment to CMRR-NF, as reflected in one sentence on p. 42 its 2010 *Nuclear Posture Review Report*, appears to have been based on the perception that this was required to obtain enough Republican Senate votes to ratify the New START Treaty [See Henry Kissinger, George Shultz, James Baker, Lawrence Eagleburger and Colin Powell, "Why New START deserves GOP support," *Washington Post*, 2 December 2010]. It was not, to my knowledge, based on any revisit to a consideration of alternatives to CMRR-NF in light of its huge cost increase. The backing for CMRR-NF in 2009 *Final Report of the Congressional Commission on the Strategic Posture of the United States* similarly appears to be the result of an attempt by a polarized group trying to find a political way forward on nuclear reductions for the Administration and Congress. It was hoped by the Obama Administration that, by committing to the CMRR-NF at Los Alamos and the

Uranium Processing Facility at Oak Ridge, it could also get enough votes to ratify the Comprehensive Test Ban Treaty (CTBT). At this point, that seems to be a vain hope. The Obama Administration sees US ratification of New START and the CTBT as essential to maintaining the credibility of the Nonproliferation Treaty, under which the nuclear-weapon state parties commit to pursue nuclear disarmament in exchange for the non-weapon state parties committing to abstain from acquiring nuclear weapons. It is this political calculation, which has nothing to do with the technical value of CMRR-NF or alternatives to it, that Deputy LANL Site Manager and the Federal Roger Snyder is referring to in paragraph 27 and the Federal Defendant's Opposition is referring to at p. 18 top in their 20 Dec. 2010 affidavits. It is also the US treaty commitment to pursue nuclear disarmament that the Federal Defendant's Opposition affidavit disparages when it ridicules the Los Alamos Study Group's "political agenda of complete nuclear disarmament" (p. 23, bottom).

5. There is no objective need to cut corners in establishing the need or lack thereof of parts or all of CMRR-NF, the cost of which has ballooned far beyond original estimates, in a new, in-depth review of alternatives. There is no anticipated need to produce new pits for U.S. nuclear weapons for several decades. In 2006, the JASON group of consultants published a congressionally commissioned review of the pit aging studies done by LANL and the Lawrence Livermore National Laboratory (LLNL). The review concluded that "Most primary types have credible minimum lifetimes in excess of 100 years as regards aging of plutonium; those with assessed minimum lifetimes of 100 years or less have clear mitigation paths that are proposed and/or being implemented."

The oldest pit currently in the U.S. operational stockpile was produced in 1979, which is 32 years ago. For needed replacements of pits that have been subject to destructive testing and for the production of pits for experiments, even the existing TA-55/PF-4 production rate, which has been administratively limited to about 10 pits/year, is adequate.

6. NNSA plans to upgrade the single-shift capacity of TA-55/PF-4 to at least 80 pits per year by 2022 [*FY2011 Biennial Plan and Budget Assessment on the Modernization and Refurbishment of the Nuclear Security Complex*, Table D-2, 2010]. This is the same capacity that Los Alamos estimated in 2003 would be achievable if "some existing non-weapons missions may be moved elsewhere to provide about 3,000 square feet of additional floor space for pit manufacturing activities" [*Summary of TA-55/PF-4 Upgrade Evaluation For Long-term Pit Manufacturing Capacity*, LA-UR-03-2711]. This was certainly a modest requirement compared to the $3.7 to 5.8 billion monstrosity that CMRR-NF has turned into.

7. It is worth recalling that, in 2003, the same year NNSA published the CMRR EIS, it also published a draft Environmental Impact Statement (DEIS-0236) on a proposed $2-4 billion Modern Pit Facility that would have had a one-shift production capacity of 125-450 pits per year. The already-mentioned review by the American Physical Society, which concluded that this capacity was vastly oversized, contributed to the NNSA withdrawal of this proposal. Since that time, the downsizing of the U.S. stockpile and the findings on the expected longevity of the existing US pits have more than vindicated this decision. Given that the estimated cost of the CMRR-NF is now

$3.7-5.8 billion, its justification is similarly obsolete by now. Maximum flexibility should be preserved to rethink its design and the alternatives to building it at all.

The foregoing is signed and declared under penalty of perjury to be true and correct.

Dated: 6 January 2011

/s/ Hippel

Frank N. von Hippel

SUBSCRIBED AND SWORN TO before me this 6 day of January 2011, by Frank N. von Hippel.

Mary Chiorello

Notary Public

My Commission Expires:

Mary N. Chiorello
Notary Public
Expiration Date: 10-25-2011
Commision ID #2351633

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF NEW MEXICO

THE LOS ALAMOS STUDY GROUP,

Plaintiff,

v. Case No. 1:10-CV-0760-JH-ACT

UNITED STATES DEPARTMENT OF ENERGY; THE HONORABLE STEVEN CHU, in his capacity as SECRETARY, DEPARTMENT OF ENERGY; NATIONAL NUCLEAR SECURITY ADMINISTRATION; THE HONORABLE THOMAS PAUL D'AGOSTINO, in his Capacity as ADMINSTRATOR, NATIONAL NUCLEAR SECURITY ADMINISTRATION,

Defendants.

AFFIDAVIT OF JODY BENSON

State of New Mexico)
) ss.
County of Los Alamos)

Jody Benson, under penalty of perjury, hereby declares as follows this 7 day of January 2011:

1. My education and experience have been presented to this Court in my previous affidavit in this case.
2. I make this declaration as an addendum to my earlier affidavit of November 2, 2010 in support of the Los Alamos Study Group's Motion for a Preliminary Injunction.

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3. Defendants stated on page 14-15 of their "Federal Defendants' Opposition to Plaintiff's Motion for Preliminary Injunction" that "Jody Benson does not allege that she is a member of Plaintiff's organization...and her allegations of irreparable injury are therefore irrelevant." I am in fact a member of the Los Alamos Study Group.

The foregoing is signed and declared under penalty of perjury to be true and correct.

Dated: January 7, 2011

Jody Benson

Jody Benson

SUBSCRIBED AND SWORN TO before me this 7th day of January 2011, by Jody Benson.

Judy L. Martinez

Notary Public

My Commission Expires:

6-18-2011

JUDY L. MARTINEZ NOTARY PUBLIC STATE OF NEW MEXICO

IN THE UNITED STATES DISTRICT COURT

FOR THE DISTRICT OF NEW MEXICO

LOS ALAMOS STUDY GROUP and CONCERNED CITIZENS FOR NUCLEAR SAFETY,

Plaintiffs,

v.

HAZEL O'LEARY, Secretary of Energy, and DEPARTMENT OF ENERGY,

Defendants.

No. 94-1306-M Civil

DECREE

OF

PRELIMINARY INJUNCTION

Pursuant to the findings and conclusions set forth in the Memorandum Opinion accompanying this Order and entered this date, and the court being fully advised in the premises,

IT IS HEREBY ORDERED that the Motion for Preliminary Injunction filed by plaintiffs Los Alamos Study Group and Concerned Citizens for Nuclear Safety on November 16, 1994, should be, and is hereby, GRANTED.

IT IS FURTHER ORDERED that the defendants Hazel O'Leary, Secretary of

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Energy and the Department of Energy, shall prepare a comprehensive environmental impact statement of the Dual-Axis Radiographic Hydrotest ("DARHT") facility at Los Alamos National Laboratories, as announced in their Notice of Intent published in **59 Fed. Reg. 60134**, pursuant to the National Environmental Policy Act, **42 U.S.C. § 4332(2)(c)** and the regulations promulgated by the Council on Environmental Quality, that includes disclosure and evaluation of the following:

A. The direct and indirect environmental effects of all major federal actions involving the construction and operation of the DARHT facility, for both the first and the second accelerator projects;

B. How each major federal action involving the construction and operation of the DARHT facility, in conjunction with all related or connected actions, as well as past, present, and reasonably foreseeable future actions, cumulatively or synergistically impact the quality of the human environment;

C. A reasonable range of alternatives to each major federal action involving the construction and operation of the DARHT facility, as listed in the defendants' Notice of Intent referred to above.

IT IS FURTHER ORDERED that defendants are hereby **ENJOINED** from all further construction of the DARHT facility, including procurement and installation of the Special Facilities Equipment stage, or from taking any other actions in furtherance thereof **PENDING** the completion of an environmental impact statement and record of decision, and review of the same as required under the applicable regulations. Prohibited actions do not include measures necessary to prepare for the delay in

construction and operation, or to preserve and support the integrity of the existing facility and physical plant.

IT IS FURTHER ORDERED that, pursuant to **Fed. R. Civ. P. 65(c)**, plaintiffs shall be required to post SECURITY in the amount of **One Hundred Dollars ($100.00).**

IT IS FURTHER ORDERED that the court shall retain jurisdiction over this case for the purpose of hearing and resolving any dispute between the plaintiffs consumer groups and the Department of Energy regarding the adequacy of the final environmental impact statement. Thereafter, upon good cause showing, the injunction shall be dissolved. In the interim, this action is hereby **ADMINISTRATIVELY TERMINATED**. The Clerk of Court shall administratively terminate this action in his records, without prejudice to the right of the parties to reopen the proceedings for good cause shown, for the entry of any stipulation or order, or for any other purpose required to obtain a final determination to the litigation.

IT IS SO ORDERED.

SENIOR UNITED STATES DISTRICT JUDGE

IN THE UNITED STATES DISTRICT COURT

FOR THE DISTRICT OF NEW MEXICO

LOS ALAMOS STUDY GROUP and CONCERNED CITIZENS FOR NUCLEAR SAFETY,

Plaintiffs,

v.

HAZEL O'LEARY, Secretary of Energy, and DEPARTMENT OF ENERGY,

Defendants.

No. 94-1306-M Civil

MEMORANDUM OPINION AND ORDER

This matter comes on for consideration on Plaintiffs' Motion for Declaratory Relief and Preliminary Injunction. Having considered the motion and responses and being otherwise fully advised in the premises, I find that plaintiffs's motion for preliminary injunction is well taken and is hereby granted, and that consideration of plaintiffs' motion for declaratory judgment will be deferred until a trial on the merits.

BACKGROUND

Plaintiffs are non-profit consumer groups which seek to enjoin the construction now in progress for the Dual-Axis Radiographic Hydrotest ("DARHT") facility at Los Alamos National Laboratories until the Department of Energy ("DOE") completes an environmental impact statement ("EIS"). Plaintiffs' motion is based on the agency's alleged failure to prepare an EIS to analyze and disclose the facility's environmental consequences, as required by the National Environmental Policy Act, 42 U.S.C. § 4321 - § 4361.

I. Description of DARHT

DARHT is a radiographic facility which will use hydrotesting to provide advanced diagnostic evaluation of nuclear weapon components to ensure their safety, reliability and performance. DARHT is basically a huge x-ray machine that allows scientists to peer into nuclear weapon components as they are subjected to the impact of a non-nuclear explosion, mimicking the first of the two steps in a complete nuclear detonation.

The Department of Energy has planned the construction of DARHT in three phases. The general support facility, the Radiographic Support Laboratory, was completed in 1990. The second and third phases are currently under construction. The Hydrodynamic Firing Site, about 20% complete, is the facility where hydrodynamic testing will be performed and is scheduled for completion in early 1996. The Special Facilities Equipment phase, consisting of the procurement and installation of the first accelerator and support equipment should be completed in 1996 and 1997,

respectively. Operations of the DARHT facility with the first accelerator is scheduled for operation in 1997. The second accelerator project is not scheduled to begin until January 1997 with start-up slated for December 2000.

II. History of the Case

A. NEPA Requirements

The National Environmental Policy Act of 1969 ("NEPA") created a national policy to "encourage productive and enjoyable harmony between man and his environment." **42 U.S.C. § 4321.** NEPA charges federal agencies with the responsibility of considering every significant aspect of the environmental impact of a proposed action. Baltimore Gas & Electric Co. v. Nat'l Res. Defense Council, **462 U.S. 87 (1983).** Through the process, the public is ensured that the agency has indeed considered the environmental effects in making decisions. Id.; See Protect Key West, Inc. v. Cheney, **795 F.Supp. 1552, 1560-61 (S.D. Fl. 1992).**

NEPA directs agencies to prepare a detailed statement on the environmental impact for all "major Federal actions significantly affecting the quality of the human environment." This "hard look" is to take into account various factors: environmental impact, unavoidable adverse effects, alternatives to the proposed action, the relationship between short-term uses and long-term productivity and irreversible commitments of resources called for by the proposal. Sierra Club v. Hodel, **848 F.2d 1068, 1093 (10th Cir. 1988)** rev'd on other grounds, **949 F.2d 362 (10th Cir. 1991); 42 U.S.C. § 4332(2)(C)(i-iv).** The Council on Environmental Quality ("CEQ") was formed in 1970 to promulgate regulations binding federal agencies in implementing

NEPA. 42 U.S.C. § 4342; Exec. Order No. 11,991 of May 24, 1977, 10 C.F.R. 1021.1(b) (1987). CEQ regulations set out the basic requirements for compliance, including instructions to agencies in the technical preparation of NEPA documents. CEQ also directs agencies to formulate their own implementing procedures, for example, by identifying and developing categories of activities which require varying levels of NEPA documentation, including "categorical exclusions" which are exempted from the NEPA review process. 40 C.F.R. § 1501.3; 40 C.F.R. § 1501.4; 1507.3.

Unless an action has been categorically excluded, CEQ regulations under NEPA require an Environmental Assessment ("EA") to be prepared for all major federal actions as a kind of crossroads in the compliance process. The EA is followed either by a finding that the action will have no significant impact on the human environment ("FONSI") or by the preparation of an Environmental Impact Statement ("EIS"). 40 C.F.R. § 1501.4; see Sierra Club v. Hodel, 848 F.2d at 1093; Protect Key West, 795 F.Supp. at 1561. The present controversy centers largely around DOE's use of a categorical exclusion for exemption of the DARHT facility from either an EA or an EIS. I review the somewhat elaborate history behind the exclusion as well as the exclusion's application to the DARHT project to illuminate the backdrop against which the issues are raised.

B. DOE's Categorical Exclusion

Plaintiffs allege that defendants violated NEPA not only by creating an exclusion which was invalidly promulgated but also by relying on an exclusion different from the one actually created in order to exempt the DARHT facility from the usual NEPA process. In 1979 and 1980, DOE promulgated regulations pursuant to the CEQ directive with a simple and brief announcement that it adopted the CEQ regulations for "implementing the procedural provisions of NEPA." **55 Fed. Reg. 45918 (1979) (codified at 10 C.F.R. § 1021.2)(1987))**. These DOE regulations did not contain any categorical exclusions. At the same time, DOE published guidelines which included categories of typical classes of activities requiring various levels of NEPA scrutiny including "categorical exclusions." **Proposed Guidelines for Compliance with NEPA, 44 Fed. Reg. 42136 (1979); Final Guidelines, 45 Fed. Reg. 20694 (1980).**

The "categorical exclusions" in DOE's 1980 guidelines were:

> Proposed actions which are the same as other actions for which the environmental effects have already been assessed in a NEPA document and determined by DOE to be clearly insignificant and where such assessment is currently valid.

Final Guidelines, Section D, 45 Fed. Reg. 20700 (1980). If the action was not within the typical classes of actions listed in Section D, the guidelines provided that DOE review the "individual proposed action" and determine that neither an EA nor an EIS was required "where it [was] clear that the proposed action [was] not a major Federal action significantly affecting the quality of the human environment." **Final Guidelines, Section A, paras. 3(b),(c)(1), 45 Fed. Reg. 20696 (1980).** If so determined, a "brief

memorandum ["Memo to File" or "MTF" was] prepared," explaining the basis for the determination that no NEPA documentation was required. Id. at para. 3(c)(1). However, if it was not immediately clear that the proposed action would have no significant environmental effects, then an Action Description Memo ("ADM") was prepared and submitted to the Environmental Programs Branch of the DOE for a "determination of the appropriate level of NEPA documentation." Webb Decl., ¶ 7.

The above measures were in place at the time DARHT was first conceived in the early 1980's.

C. DARHT and the Exclusion

DOE conducted a site-wide environmental impact statement for Los Alamos National Laboratories ("LANL") in 1979, and issued a record of decision in 1981. The EIS included consideration of hydrotesting at the existing Pulsed High Energy Radiation Machine Emitting X-Rays ("PHERMEX") facility which had been in use since 1961.

DOE first considered DARHT in an Action Description Memorandum prepared in August 1982, revised in February 1984 and again in July 1987 to take into account modifications to the DARHT facility. The ADMs generally acknowledged existing negative environmental effects, stating an intention to minimize them in compliance with environmental regulations.

Because the 1982 ADM contained "substantial analysis and evaluation," it was sent to DOE Headquarters to determine the appropriate level of NEPA review. Webb Decl., ¶ 8. The ensuing Memo-to-File stated that the proposed action "clearly will not

have a significant impact on the human environment. . . ". **MTF from R. Stern, Dir., DOE Ofc. of Env. Compliance, Docs., Tab 7.**

The 1984 and 1987 ADM revisions on DARHT were both followed by Memos-to-File issued from the Albuquerque office determining that neither an EA nor an EIS needed to be performed. The MTF addressing the 1984 revision concluded that the proposed DARHT project was "not [a] major Federal action significantly effecting the quality of the human environment." **MTF from P. Ramey, Dir., Env., Safety & Health Div., Albq. office, Docs. Rel. to DARHT, Tab 9.** The MTF responding to the 1987 ADM decided that the environmental effects were "[s]ubstantially the same as actions previously evaluated in existing NEPA documentation and determined to be insignificant, [and that therefore] further NEPA was not required," the language closely, but not exactly, mirroring that of the Section D categorical exclusion from the guidelines. **MTF from C. Soden, Chief, Albq. Env. Progr. Branch, Docs., Tab 11.** Placing DARHT within this category virtually excluded the DARHT facility from the NEPA process and resulted in no actual NEPA documentation ever being generated for the project.

D. After the Exclusion

In February, 1990, Secretary of Energy James Watkins revoked the Section D categorical exclusion, along with the use of the Memo-to-File because of suspected abuses of the process leading to questionable compliance with NEPA obligations. **Memorandum from Sec. of Energy Watkins to All Operations Ofc. Mgrs., Tab 14; Sec. of Energy Notice (SEN) 15-90 at I(C), Docs., Tab 16.**

In April 1992, DOE promulgated new rules, completely revising 10 C.F.R. pt. 1021. Based on the earlier NEPA guidelines, the rules incorporate an "expanded list of typical classes of actions, including categorical exclusions . . . [which] do not "require the preparation of either an [EA] or an [EIS]." **Final Rule, NEPA Implementing Procedures, 57 Fed. Reg. 15122 (1992) (codified at 10 C.F.R. pt. 1021).** These regulations provide "more specificity and detail than the Guidelines." Id. The exhaustive list of categorical exclusions (requiring neither an EA nor an EIS) spell out agency actions with particularity, **10 C.F.R. § 1021.410, app. A, B,** bear little resemblance to the exclusions set forth in the earlier non-codified guidelines and have no counterpart to the controversial "catch-all" exclusion.

Over a year after the new regulations went into effect, Joseph Vozella, Chief of Los Alamos Area Office's ("LAAO") Environment, Safety and Health Branch, on a review of internal agency documents, determined that "no further NEPA documentation [was] required" for DARHT. The decision rested on a finding that the DARHT project was "encompassed within the [1987 Action Description Memorandum]" and was therefore in compliance with NEPA. **Mem. from Joseph Vozella, Chief, Env., Safety and Health Branch, DOE, LAAO, Docs., Tab 18.**

III. Present Posture of Case

Last October, plaintiffs sent notice to Hazel O'Leary, Secretary of Energy, that they regarded DOE to be in violation of NEPA by continuing to construct DARHT without having completed an adequate environmental assessment of the project. Plaintiffs requested a halt to the construction and the preparation of an EIS. In the last

several months, the parties have engaged in settlement negotiations resulting in a suspension of specialized equipment procurement and in a notice of intent by DOE to prepare an EIS on DARHT. When DOE refused to stop construction on the project, plaintiffs filed this lawsuit.

A hearing on the matter was held on December 9, 1994.

DISCUSSION

I. Laches

Defendants charge plaintiffs with delay in bringing suit, claiming that plaintiffs' action is barred by laches, because plaintiffs first knew of the DARHT project in January but did not send the notice of NEPA non-compliance to Secretary of Energy O'Leary until October 3, 1994.

Mere lapse of time does not amount to laches. Jicarilla Apache Tribe v. Andrus, 687 F.2d 1324, 1339 (10th Cir. 1982). An environmental action may be barred by the equitable defense of laches if 1) plaintiff has delayed unreasonably in bringing suit and 2) defendant has been unduly prejudiced by the delay. Id. The application of laches is within the discretion of the district court. Park County Resource Council v. U.S. Dep't of Agriculture, 817 F.2d 609, 617 (10th Cir. 1987).

There is little factual support to defendants' contention of unreasonable delay on the part of the plaintiffs. The record offers ample evidence to the contrary.

Some general information about the DARHT project was available to the public in 1989 and 1990 through LANL news bulletins and through the local newspaper. Docs., Tab 51 at 6-8. Information contained in the news bulletin was of a general

publicity nature, touting the benefits of a "state of the art" radiographic facility. Id. at pp. 6, 7. The release in the "Los Alamos Monitor" consisted of an article describing congressional funding approval for several laboratory projects; the announcement of a $16.8 million appropriation for DARHT took up one and one-half lines. Id. at p. 8.

Mary Burton Risely, co-founder and co-director of plaintiffs' Los Alamos Study Group ("LASG"), testified that although the group was "loosely formed" to investigate LANL activities, it was not formally organized as a public interest organization until 1993. Risely Aff., Pltfs.' Reply, Ex. 24 ¶ 6. Several months after formally organizing, LASG requested from LANL specific information about NEPA documentation for the DARHT project. Their requests were met with responses which were either incomplete or clouded with misinformation. Id., ¶ 6(b)-(d). Although LANL eventually retracted the misinformation concerning NEPA documentation, it denied LASG's subsequent requests in February and March for a tour of the DARHT facility. Id., ¶ 6(e)-(h). What followed were more letters, apparently unfruitful meetings and more delays in responding to plaintiffs' inquiries about DARHT's construction status and contract information. Pltfs.' Reply, Ex. 24, ¶ h-n. Consequently, plaintiffs did not learn that construction on DARHT had actually begun until early September 1994, after which DOE initiated the settlement negotiations resulting in limited success.

I find that plaintiffs pursued their claim with reasonable diligence and that any delay was due primarily to defendants' stalling. Defendants cannot now point to these delays as a basis for an affirmative defense of laches. Bolstering my finding is an overriding policy that laches is to be used sparingly in environmental cases, because

the named plaintiff ordinarily is not the only victim of the alleged environmental injury. Park Cty. Resource Council, 817 F.2d at 617. However, the facts in the present case are clear enough that I need not rely on this policy to find that laches is inappropriate and does not defeat plaintiffs' claim.

II. Standard of Review

The appropriate standard of review of an agency decision dealing with the NEPA review process is the arbitrary and capricious standard of the Administrative Procedure Act. **5 U.S.C. § 706(2)(A)**; Village of Los Ranchos de Albuquerque v. Marsh, **956 F.2d 970 (10th Cir. 1992)**. While highly deferential to agency matters, the court may set aside an agency decision if it is arbitrary, capricious, an abuse of discretion or otherwise not in accordance with law. Friends of the Earth v. Hintz, **800 F.2d 822, 831 (9th Cir. 1986)**.

The agency finding in this situation, which resulted in no EIS ever being done for the DARHT facility until now, is subject to judicial review. **5 U.S.C. § 701**. The purpose of judicial review is simply "to ensure that the agency has adequately considered and disclosed the environmental impact of its actions and that its decision is not arbitrary and capricious." Baltimore Gas, **462 U.S. at 97-98** (cit. omitted). A court can require that the agency follow the NEPA directive to take a "hard look" at the environmental consequences before taking a major action. Id.

Using the appropriate standard of review, I turn to the critical question of whether injunctive relief to stop further construction on DARHT is warranted, pending DOE's completion of an EIS.

III. Injunctive Relief

A preliminary injunction constitutes drastic relief that should be granted only in cases where the necessity for it is clearly established. Potawatomi Indian Tribe v. Enterprise Mgt. Consultants Inc., 883 F.2d 886, 888-89 (10th Cir. 1989). The Tenth Circuit has outlined four prerequisites for the granting of a preliminary injunction: 1) a substantial likelihood that the plaintiff will eventually prevail on the merits; 2) a showing that the plaintiff will suffer irreparable harm without issuance of the injunction; 3) that the threatened injury to the plaintiff outweighs any harm the proposed injunction may pose to the defendant; and 4) a showing that the injunction, if issued, would not be adverse to the public interest. Id. at 889.

The Tenth Circuit relaxes the requirement for substantial likelihood of success if the last three balancing factors tip decidedly in favor of plaintiff, who then need only show a "fair ground for litigation." Potawatomi Indian Tribe v. Enterprise Mgt. Consultants Inc., 883 F.2d at 889 (cit. omitted).; Southern Utah Wilderness Alliance v. Thompson, 811 F.Supp. 635, 641 (D. Utah 1993) (cit. omitted).

Statutory violations in environmental cases do not generally give rise to a presumption of irreparable injury. Amoco Production Co. v. Gambell, 480 U.S. 531, 545 (1987); But cf., Southern Utah, 811 F.Supp. at 641 (injunctive relief presumptively available with substantial likelihood of NEPA violation); Public Service Co. of Colorado v. Andrus, 825 F.Supp. 1483, 1505 (D. Idaho 1993) (dictum) (presumption of irreparable damage in cases involving NEPA violations may still be used by the Ninth Circuit by limiting Amoco's holding to ANILCA-type statutes); Sierra

Club v. U.S. Forest Service, 843 F.2d 1190, 1995 (9th Cir. 1988) (court questioned applicability of Amoco to NEPA violations, but issued injunction based on balancing of harms "if [Amoco] applies"). As the Supreme Court noted, the rejection of the presumption of irreparable harm has little practical consequence in cases involving alleged environmental injury, because in balancing the harms, if such injury is sufficiently likely, the balance will usually favor the issuance of the injunction to protect the environment. Amoco, 480 U.S. at 545 (quoted in Save the Yaak Comm. v. Block, 840 F.2d 714, 722 (9th Cir. 1988).

Jurisdictions which follow the holding in Amoco, including the Tenth Circuit, apply traditional equitable principles of irreparable injury and inadequacy of legal remedies even upon a finding that the agency has violated the NEPA statute. See Sierra Club v. Hodel, 848 F.2d at 1097 (injunction is justified under traditional principles of equity, as applied in the NEPA context) (cit. omitted), Save the Yaak Comm., 840 F.2d at 716; Town of Huntington v. Marsh, 884 F.2d 648, 651 (2nd Cir. 1989); Sierra Club v. Marsh, 872 F.2d 497, 504 (1st Cir. 1989). Some jurisdictions followed this analysis for NEPA cases even before Amoco was decided: State of Wisconsin v. Weinberger, 745 F.2d 412 (7th Cir. 1984) (no presumption mandating an injunction in cases involving NEPA violations); Environmental Defense Fund v. Marsh, 651 F.2d 983, 1005 (5th Cir. 1981) (injunction for NEPA violation often appropriate, but should be limited by general equity principles).

Applying these traditional equitable principles, I now specifically address the four prerequisites underlying consideration of a preliminary injunction.

A. Likelihood of Success on Merits

Defendants claim that although no EA or EIS was completed for DARHT, they performed a "series of environmental analyses" "pursuant to DOE NEPA guidelines in effect at the time" and made a good faith determination that further NEPA documentation was not required for DARHT. **Defts.' Opp. to Pltfs.' Mot. for Prel. Inj. at 9 [hereinafter, "Defts.' Opp."].** Defendants are incorrect in suggesting that the question of whether or not an EIS must be prepared is moot because an EIS is in progress now. On the contrary, the question is central to the plaintiffs' claim that an activity for which an EIS should have been prepared is nonetheless proceeding without the environmental effects having been adequately considered.

The question is also crucial to whether there is a substantial likelihood of success on the merits. I find that plaintiffs offer sufficient evidence demonstrating with sufficient probability that defendants violated NEPA requirements.

Creation of Categorical Exclusion

The plaintiffs' contentions surrounding the categorical exclusion are two-fold: the manner in which defendants ("DOE") created the exclusion and second, use of the exclusion to exempt DARHT from NEPA review. Plaintiffs allege that the exclusion was invalid because it lacked notice-and-comment rule making, thus rendering its invocation arbitrary, capricious and not in accordance with law. Plaintiffs also allege that the exclusion defendants actually relied on differed from the one contained in the 1987 guidelines.

The Administrative Procedure Act sets out specific provisions for public notice, comment and publication a federal agency must follow when promulgating substantive rules. **5 U.S.C. § 553.** However, an administrative agency is not required to promulgate "detailed rules interpreting every statutory provision that may be relevant to its actions." Pulido v. Heckler, **758 F.2d 503, 506 (10th Cir. 1985)** (citing American Power & Light Co. v. SEC, **329 U.S. 90 (1946).**

Even though lacking the binding force or deference accorded a formal rule, Amrep Corp. v. F.T.C., **768 F.2d 1171, 1178 (10th Cir. 1985)** (binding policy created through either rule[making procedures or adjudications), the guidelines could have been formulated to provide "internal guidance" for DOE in carrying out the NEPA review process. **44 Fed. Reg. 42137, III, Note (1979).** Written comments were requested in the proposed guidelines, and referenced in final publication. **44 Fed. Reg. 42136 (1979); 45 Fed. Reg. 20694 (1980).** No notice of a public meeting was given. **5 U.S.C. § 553** (b)(1) (notice of proposed rule making shall include a statement of the time, place, and nature of public rule-making proceedings). Although DOE had at the same time formally adopted CEQ regulations in 10 C.F.R. pt. 1021, the guidelines containing the exclusion were not codified.

I need not decide at this time whether or not these provisions were valid guidelines or invalid rules because the issue pales beside what I consider to be the stickier aspect of the exclusion, which I turn to next.

Use of the Exclusion

Regulations in place at the time DOE completed the 1987 Action Description Memorandum list factors an agency must consider in order to determine whether the proposed activity would "significantly" affect the environment, and, if present, necessitate the preparation of an EA or EIS. These factors include effects which are highly controversial, highly uncertain or involve "unique or unknown risks." **40 C.F.R. § 1508.27(4), § 1508.27(5);** see Greenpeace U.S.A. v. Evans, **688 F.Supp. 579, 582 (W.D. Wash. 1987).** Given that operations at the DARHT facility will include the use of radioactive and toxic substances, and that proposed nuclear testing is typically met with public controversy, DOE's application of an exclusion for DARHT is questionable at best.

Use of the exclusion is suspect for several other reasons. First, the DARHT project was subjected in 1982, 1984 and 1987 to three Action Description Memoranda, which DOE itself designated as the appropriate process to follow when the action "*fails* the test of clearly insignificant" (emphasis supplied). **Webb Decl., ¶ 7.** In all three situations, DOE responded to the 1982 ADM and its revisions with a determination not to proceed with further NEPA documentation. Given the clarifying function of the ADMs and the language of the findings in the resulting Memos-to-File, it appears DOE was relying on the exclusion in generating all three ADMs, even though the 1987 Memo-to-File copies the exclusion language most closely. Essentially, an agency activity that began with a questionable status as to its significance (thereby precipitating an ADM) repeatedly ended up with determinations that the activity would not have a significant effect on the human environment, and

so qualified within a categorical exclusion. 40 C.F.R. § 1508.4. However, DOE offered no reason or explanation supporting these findings in any of its Memos-to-File. See 40 C.F.R. § 1508.4 (categorical exclusion findings should be based in procedures adopted by agency in implementation of CEQ regulations); Jones v. Gordon, 792 F.2d 821, 828 (9th Cir. 1986) (agency must provide "reasoned explanation of its decision"). This lack of explanation drastically weakens, if not eliminates, any authority behind the conclusions reached by DOE in the Memos-to-File. See Save the Yaak Comm., 840 F.2d at 717 (agency's decision to forego EIS considered unreasonable if agency does not supply a "convincing statement of reasons" why potential effects are insignificant).

Second, the exclusion assumes a past assessment of the action's environmental effects. The last NEPA document was a site-wide EIS completed in 1981, before DARHT was in its initial stages. The ensuing ADMs related to DARHT were memoranda which were internally generated and maintained.

Third, the exclusion requires that this past assessment be "currently valid." Final Guidelines, Section D, 45 Fed. Reg. 20700 (1980). The site-wide EIS, began in 1979 and completed in 1981, hardly qualifies as a currently valid assessment consistent with the purposes of NEPA.

DOE began to revise 10 C.F.R. pt. 1021 in November, 1990, with the final rules in place by April, 1992. 57 Fed. Reg. 15122 (1992). Yet in 1993, three years after the exclusion had been revoked, DOE again determined that no further NEPA documentation would be needed for the DARHT project after conducting a review of

internal agency documents. DOE legitimized this exemption by placing it under the umbrella of the 1987 Action Description Memorandum, suggesting that the exclusion which was operative in 1987 would have the same result in 1993, notwithstanding the fact that the justification for the exclusion was now invalid.

A court need not defer to agency decisions which have not considered relevant factors and lack a rational basis. Southern Utah, 811 F.Supp. at 642; Friends of the Earth v. Hintz, 800 F.2d 822, 831 (9th Cir. 1986). The above facts indicate that at a trial on the merits, DOE's use of the categorical exclusion to exempt the DARHT facility from the NEPA process is sufficiently likely to be found arbitrary and capricious and outside the scope of the requirements set forth in CEQ NEPA regulations.

Public disclosure

Agency procedures implementing NEPA must involve the public in complying with CEQ regulations. 40 C.F.R. § 1507.3(b); 40 C.F.R. § 1506.6(a) (agencies shall make diligent efforts to involve the public in preparing and implementing their NEPA procedures). Evidence contained in the record strongly suggests that DOE eliminated the public from any knowledge of its internal determinations about DARHT or its exclusions.

First, the determinations from the Memos-to-File discussed above were never disclosed to the public. See 40 C.F.R. § 1501.4(e)(1) (agency shall make FONSI available to public). Also, DOE failed to follow its own procedures which allowed for additional review in the event that public comment raised a "substantial question regarding [a] categorization" affecting NEPA assessment. Final Guidelines, 45 Fed.

Reg. 20696, Section A(3)(b)(3). Public comment cannot be elicited without public disclosure. DOE has since acknowledged the critical element of public involvement in carrying out the NEPA mandate. **57 Fed. Reg. 15122 (rule's purpose is to enhance public review opportunities and "ensure that [DOE's] NEPA procedures are more accessible to the public").**

Second, the documents related to the DARHT facility which have been submitted by the defendants contain some material disseminated to the public, but do not rise to the level of NEPA-related information about the DARHT project. This material can be summarily categorized as either public relations materials or notices of appropriations for the facility. See **Docs., Tab 51;** see **Discussion** infra **part I.** As defendants do not present these DARHT documents as any kind of administrative record or functional equivalent, I need not address the material's unsuitability as a "hard look" at environmental consequences.

Timing of assessment

Another aspect of this case influencing the likelihood of success is the question of when an EIS is to be done. Environmental assessment and resulting information must be available before agency action is taken. **40 C.F.R. § 1500.1(b).** NEPA recognizes the limiting effect continued activity has on the selection of available alternatives. Under NEPA regulations, it is illegal for an agency to continue an activity while an EIS is being prepared unless such action "will not prejudice the ultimate decision on the program." **40 C.F.R. § 1506.1(c);** see also **10 C.F.R. § 1021.211.** NEPA works on a preventative level. Its provisions ensure as thorough an assessment

as possible, with input coming from both outside agencies and public, so that an agency can make an informed decision at the outset. Marsh v. Oregon Natural Resources Council, 490 U.S. 360, 371 (1989) (purpose of NEPA is to prevent damages to the environment by focusing attention on proposed agency action so that "agency will not act on incomplete information, only to regret its decision after it is too late to correct") (cit. omitted).

The decision by DOE to begin an EIS at this point does little to ameliorate the fact that it was not done before the DARHT project began. See Weinberger v. Romero-Barcelo, 456 U.S. 305, 317 n.12 (the cessation of violations does not bar issuance of an injunction) (cit. omitted); see also Public Service, 825 F.Supp. at 1503-04 (agency's statements that it will perform the required NEPA analysis not sufficient to invoke voluntary cessation exception to mootness doctrine). Indeed, some of the damage NEPA seeks to prevent may already be done. Bias toward one alternative or another may already exist as construction was allowed to start and progress without public input. Public Service, 825 F.Supp. at 1505 (NEPA process enables agency to review reasonable alternatives before its actions proceed so far that its decisions regarding the program become "cast in stone").

Based on the above discussion concerning DOE's questionable use of a questionable categorical exemption; the violations of the public disclosure mandate of NEPA; and the untimely performance of an EIS coupled with the refusal to temporarily suspend construction on DARHT, I find there is a probability that plaintiffs

would succeed on the case's merits in showing that defendants violated NEPA substantively and procedurally.

B. Irreparable Harm or Injury

Plaintiffs have proved a substantial likelihood of success on the merits, but they must also show irreparable harm in allowing defendants to continue DARHT construction before an EIS is done. Town of Huntington, 884 F.2d at 653 (threat of injury must be proved, not assumed). However, plaintiffs need only establish a sufficient likelihood of harm. See Public Service, 825 F.Supp. at 1505. Proof that significant effects on the human environment will in fact occur is not essential. Sierra Club v. U.S. Forest Service, 843 F.2d 1190 (9th Cir. 1988) (cit. omitted); Protect Key West, 795 F.Supp. at 1563 (harms sought to be prevented are those plaintiff *may* suffer) (emphasis supplied); Public Service, 825 F.Supp. at 1505 (plaintiff must show a sufficient likelihood that irreparable injury may occur).

Defining the Harm or Injury

Case law has recognized the unique characteristics of environmental harm. NEPA is a purely procedural statute in that it sets forth procedures decision makers must follow, but it is substantive as well in that it demands that "a decisionmaker [sic] consider all significant environmental impacts before choosing a course of action." Sierra Club v. Marsh, 872 F.2d at 502. NEPA's procedural requirements support its substantive mandate. Town of Orangetown v. Gorsuch, 718 F.2d 29, 34-35 (2nd Cir. 1983) (NEPA provides a "procedural framework within which substantive judgments must be made"); Public Service, 825 F.Supp. at 1494 (court must ensure

agency compliance with the substantive purposes of NEPA as well as the procedural duties). NEPA can require that the agency take a "hard look" at environmental consequences, but cannot dictate the result or influence the substantive decision the agency makes, even though some of the environmental consequences may turn out to be adverse. Sierra Club v. Marsh, 872 F.2d at 502. NEPA's purely procedural nature also limits the court's role in reviewing agency decisions. Id. A court can only require that NEPA's procedures are carried out before major federal actions are taken or allowed to proceed further. Public Service Co., 825 F.Supp. at 1505; see also Town of Orangetown, 718 F.2d at 35 (once agency has made a decision subject to NEPA's procedural requirements, court's role is simply to insure that agency has considered environmental consequences).

Violations under NEPA are not purely procedural violations. The harm ensuing from a NEPA violation is intrinsic to the statute's discrete objective. The harm at stake is a harm to the environment, but the harm consists of "the added risk to the environment" that occurs when governmental decision makers make up their minds without having before them an analysis of the likely effects of their decision upon the environment. Sierra Club v. Marsh, 872 F.2d at 500 (citing Commonwealth of Mass. v. Watt, 716 F.2d 946 (1st Cir. 1983). When a decision to which NEPA obligations attach is made without the informed environmental consideration that NEPA requires, the very harm that NEPA intends to prevent has been suffered. Id. The special nature of environmental harms does not allow room to back-track once the actual harm occurs. Amoco, 480 U..S. at 545 ("environmental injury, by its nature, can seldom

be adequately remedied by money damages and is often permanent or at least of long duration, i.e., irreparable") (cit. omitted).

Assessing the Harm

The main thrust of defendants' argument rests on the alleged failure of plaintiffs to specify any environmental harm except for "vague" construction-related impacts. Defendants point out that they have taken measures to mitigate and monitor any potential impacts to DARHT's construction-related activity.

Plaintiffs cite disruptive effects of construction activity as only one of several causes for concern. They allege that DARHT poses potentially more serious but less obvious environmental impacts such as radioactive and toxic air emissions; radioactive and toxic soil contamination; radioactive waste generation through the use of plutonium, and impacts on Native American archaeological sites.

The question here is whether plaintiffs can show that irreparable harm is sufficiently likely if DOE is allowed to continue construction without first completing an EIS, despite any pre-EIS environmental considerations DOE may have taken.

The environmental analyses contained in the DOE's Action Description Memoranda described potential soil and water erosion hazards and noted that facility sites were not located in a floodplain or wetland. The ADMs also noted that no rare or endangered species known to exist on Laboratory lands would be impaired. **Docs., Tabs 6, 8, 10; Webb Decl., ¶¶ 8-11.** Archaeological impacts were discussed, identifying mitigation measures for the various sites at risk. The ADMs also stated that operation of the facility would comply with "all regulations applicable to DOE

projects." Id. Toxic waterborne and airborne emissions would be within applicable environmental standards. Id.

Mitigation Measures

Defendants ask this court to consider various mitigation measures they have completed in assessing the feasibility of further construction activities. **Defts.' Opp. at 21.** A few of these measures dealt with sewage and drainage for the construction site. **State permit for septic tank and wastewater holding tank, 1990, Docs., Tab 32; permit from EPA, 1994, for Stormwater Pollution Prevention Plan, pursuant to Clean Water Act, Docs., Tab 39.** Some measures were taken to abate the usual annoyances which usually accompany construction, such as soil and vegetation disturbance, noise generation and air emissions of dust and diesel fuel. **Griego Decl., ¶¶ 17, 18.** A few mitigation measures addressed the more insidious effects of the project. A Toxic Substances Control Act survey was completed internally by DOE's Environmental Protection Group in 1992. **Docs., Tab 36.** A soil sampling to determine residual contamination was completed over six years ago, in March 1988. **Reconnaissance Sampling Plan, Docs., Tabs 30-31.** DOE conducted archeological surveys of Native American sites, most notably Nakemuu, which could possibly be affected by construction activity and DARHT operations. Discussion of mitigation measures focused on effects from shrapnel debris and construction. No attention was given to impact of seismic activity on the sites. **Action Description Memoranda, Docs., Tabs 6, 8, 10; Letter to Hazel O'Leary, Pltfs.' Brief, Ex. 7 at 9.**

While mitigation measures can be taken into account to justify an agency decision not to prepare an EIS, Park Cty. Resource Council, 817 F.2d at 621, they do not replace the agency's obligation to take the requisite "hard look" at environmental consequences. The scope of DOE's mitigation measures do not rise to this level.

Other environmental concerns

The EPA granted construction approval for DARHT in 1988 pursuant to the National Emission Standards for Hazardous Air Pollutants ("NESHAP"). However, in 1992, the EPA found DARHT to be in non-compliance with NESHAP for air emission standards. Letter from EPA, Air, Pesticides & Toxics Div., Pltfs.' Reply, Ex. 4, 5.

Defendants also point out the similarity of the DARHT project to the PHERMEX facility now in operation. While DARHT may present substantially the same type of environmental effects as the single-axis unit PHERMEX, the cumulative effects of an additional dual-axis machine were not encompassed within the 1979 site-wide EIS, regardless of how closely DOE has followed the effects of PHERMEX over the years. Defts.' Opp. at 22 n.6. See Public Service, 825 F.Supp. at 1505 (when assessing environmental effects of shipment and storage of fuel at national engineering laboratory, DOE should have calculated risks of nuclear exposure for cumulative effect of repeated exposures, not simply from one shipment).

Plaintiffs cite other areas for concern which DOE appears not to have adequately examined. Estimates of airborne concentrations of toxic metals such as beryllium, lead and uranium were made using 1982 testing site data. 1984 ADM, Docs., Tab 8. DOE's sampling approach for soil contamination leaves questions as to

its integrity and reliability. Pltfs.' Reply, Ex. 3. Other consequences associated with the possible use and disposal of plutonium, such as contingency procedures in the event of breach of containment vessels, have not been specifically addressed in any of the Action Description Memoranda or mitigation measures performed by DOE. Pltfs.' Mem. Brief in Supp. of Prel. Inj. at 4.

Defendants argue that plaintiffs' allegations are "vague and unsubstantiated predictions of future harms." Defts.' Opp. at 18, 20. While plaintiffs have clearly demonstrated that a risk of environmental harm is sufficiently likely, requiring a showing of actual harm may not be possible. NEPA's objective is to prevent environmental harm before it occurs, recognizing that this type of harm is often not obvious or immediate. An agency's shortcomings in environmental inquiries should not turn out to be a detriment to plaintiffs expected to do better making the same inquiries. Sierra Club v. Hodel, 848 F.2d at 1097 (irreparable injury found to exist where impossible to assess because of incomplete studies). NEPA requires federal agencies, not plaintiff consumer groups, to take the requisite "hard look" at environmental consequences. An agency would have little incentive to make comprehensive environmental assessments when it can cast that burden onto a plaintiff trying to build a case for a NEPA violation. Shifting the congressional mandate of environmental analysis from federal agency to plaintiff perverts the statute's objective.

Effect on alternatives

Defendants claim that any harm plaintiffs may suffer is not irreparable because the DARHT facility will not become fully operational until 1997. However, harm involving a NEPA violation does not necessarily hinge on when it will occur. Sierra Club v. Marsh, 872 F.2d at 500 ("plaintiff seeking an injunction cannot be stopped at the threshold by pointing to additional steps between the governmental decision and environmental harm"). Moreover, defendants' argument ignores the distinctive characteristic of harm as interpreted under the NEPA mandate. NEPA endeavors to prevent the *risk* of harm to the environment when an agency makes decisions without having done an adequate environmental assessment. Id. The problems associated with starting an EIS *in medias res* are further compounded as DOE continues construction of the DARHT facility. Work progresses, and the risk of harm increases, as certain alternatives become less workable. Public Service, 825 F.Supp. at 1505 (the more effort and resources that are put into a project, the less likely an agency is to abandon the project or to change it . . . regardless of what the NEPA review reveals"). Once a project is completed, the same environmental considerations that may have earlier halted or caused a modification in the action, no longer outweigh the commitment of time, energy and financial resources expended. See Sierra Club v. Marsh, 872 F.2d at 500 ("[i]t is far easier to influence an initial choice than to change a mind already made up").

Defendants give their assurance that they will remain open to all reasonable alternatives, including the "no action" alternative, in which DARHT would not be operated and DOE would continue to use PHERMEX. Defts.' Opp. at 23 & Ex. 1. It

is difficult to believe that an agency would choose or even seriously consider this option for an activity once it is 100% completed. Sierra Club v. Marsh, 872 F. 2d at 500 ("Once large bureaucracies are committed to a course of action, it is difficult to change that course - even if new, or more thorough, NEPA statements are prepared . . . "). It is equally difficult to imagine DOE opting for the "containment" alternative, requiring three years to accomplish, in which the DARHT facility would be modified to contain airborne emissions, when defendants now react squeamishly to a delay of less than a year in which to complete an EIS. Only a few months ago, in finding that no "cost-effective, program-effective alternatives" existed, defendants themselves did not consider a "no-action" alternative to be acceptable. Summary Descr. of DARHT Operations for Possible Env. Assessment, Pltfs.' Mem. Brief, Ex. 1 at 7. I also note that DOE came to the decision to perform an EIS only after extensive negotiation and much struggle on the part of the plaintiffs consumer groups. This fact challenges DOE's averred commitment to keep an open mind to all the reasonable alternatives, 59 Fed. Reg. 60134, despite the outlay of money and resources the project may eventually incur. Tr. of Proceedings at 65.

DOE's promise to consider non-operation of DARHT as an alternative seems overly optimistic. Sierra Club v. Marsh, 872 F.2d at 500. (setting aside an agency action does not necessarily undo the harm, as the agency may have already become committed to a previously chosen course of action). DOE's refusal to halt construction pending completion of the EIS contributes to this skepticism.

NEPA requires an agency to make decisions which are "fully informed and well-considered." Vermont Yankee Nuclear Power Corp. v. Nat'l Re. Defense Council, Inc., **435 U.S. 519, 558 (1978),** cited in Sierra Club v. U.S. forest Service, **843 F.2d 1990, 1192 (9th Cir. 1988).** Plaintiffs have shown that the insufficiently detailed discussion of DARHT's environmental impacts leaves remaining deficiencies in DOE's analyses and increases the risk of environmental harm. This risk is the very harm NEPA tries to avert, and establishes that irreparable harm is sufficiently likely.

C. Balance of Hardships

Defendants assert that any harm plaintiffs may suffer does not outweigh the harm an injunction would cause in terms of national security and financial cost.

Harm to national security

DOE emphasizes the role of DARHT in the "stockpile stewardship program," in the development of alternative capabilities for ensuring that existing nuclear weapons remain safe, secure and reliable. Id. Although there is no national defense exception to NEPA compliance, it is a factor the court may weigh when considering equitable relief. State of Wisconsin v. Weinberger, **745 F.2d 412, 425 (7th Cir. 1984).**

I find that the delay associated with completing an EIS will not endanger national security to a degree that would prevent the dispensing of injunctive relief. The cases relied on by defendants to discourage judicial appraisals of situations where national security is concerned are not helpful to an analysis of the present situation. These cases involved imminent danger to national security, NEPA violations that were minor and more formalistic, or the administration of military affairs. Comm. for Nuclear

Responsibility, Inc. v. Seaborg, 463 F.2d 796 (D.C. Cir. 1971) (delay in detonation of nuclear device posed risk of mechanical or technical failure); Concerned about Trident v. Rumsfeld, 555 F.2d 817 (D.C. Cir. 1977) (where Navy had completed several EAs and an EIS, but failed to adequately assess one of the chosen sites as alternative); Chappel v. Wallace, 462 U.S. 296 (1983) (enlisted personnel seeking damages from superior officer for constitutional violation).

Ample evidence points to the fact that the existing nuclear stockpile is, at this time, safe and reliable. See, Hearings on the House Subcomm. for Energy and Water Development Appropriations, 103rd Cong., 2nd Sess. 736 (1994) (statement of Dr. Harold Smith, Ass't to the Sec'y of Defense for Atomic Energy). Suspending DARHT construction will have no effect on the PHERMEX system which is an operating hydrotest facility currently supplying diagnostic information for the stockpile stewardship program. Although completing an EIS will delay moving the program into full operation, DOE has not presented the court with enough evidence amounting to a reason to fear that the delay has threatened or will threaten national security by endangering plans for the Comprehensive Test Ban Treaty. There is also no reason to believe that a delay resulting from a NEPA review will result in a loss of intellectual resources, as defendants allege. As plaintiffs point out, scientists considering retirement in the interim during which DOE is completing the EIS can either opt to delay retirement or work after retirement as consultants.

Because compliance with NEPA is an obligation an agency is assumed to be aware of, delay associated with preparing an EIS cannot be considered an unforeseen

setback. Protect Key West, 795 F.Supp. at 1563 (delays for environmental assessment "should [be] built into the project schedule originally"). In fact, in October 1994, DOE figured in a six-month delay in construction for NEPA review purposes to take place from November 1994 to May 1995. Pltfs.' Mem. Brief, Ex. 11. Other delays have been part of DARHT history, for example, the four-year delay between the first two stages (the radiographic support lab and the groundbreaking for the hydrotest firing site). See Tr. of Proceedings at 45. DOE is in the best position to expedite the completion of the EIS, having done some preliminary environmental analyses.

Effect of delay on economic harm

Considerable cost is involved whether construction proceeds but an alternative other than full operation is selected, or is suspended until DOE finished the EIS. Approximately $19 million would be spent over the next year if construction continues while the EIS is being done.

Defendants claim an approximate $12 million cost in a year's delay which includes elements of design, management, construction and restarting costs. Burns Decl., ¶ 9; Programmatic Cost Impact Due to Project Delay for EIS, Pltfs.' Reply, Ex. 22 & Defts.' Ex. A. This figure, however, may be inflated for several reasons. See Weida Aff., Pltfs.' Reply, Ex. 23. First, defendants' estimates reflect some costs which are were committed as a project expense, unrelated to the delay itself, for example, machine upgrades and maintenance. Id., ¶ 6(f). Second, some items should not have been included at all. The projected $1.5 million cost of an EIS preparation

for DARHT is a legal obligation of the agency and cannot be assessed as a cost of delay. Id., ¶ 6(e). DOE included an escalated cost of the DARHT second axis, when Congress has not yet authorized or funded this item. Id., ¶ 6(h). Also, defendants' estimate does not include any offsets intrinsic to a delay, and at the same time, incorporates a generous 15% contingency fee. Id., ¶ 6(d)(g).

The fact that construction of the housing facility is almost one-quarter complete and the procurement stage well on its way to being half done, is not enough of a reason in itself to support a denial of an injunction. See Foundation on Economic Trends v. Weinberger, 610 F.Supp. 829, 943 (D.C.D.C. 1985) (courts have enjoined ongoing projects to preserve full opportunity to choose among alternatives); Richland Park Homeowners Ass'n, Inc., 671 F.2d 935, 942 (project which has proceeded to advanced stage of completion may be enjoined if NEPA violations are blatant and public interest not irreparably harmed).

I find that the balance of harms favors the plaintiffs. A comparatively short delay for the purpose of ensuring that environmental consequences have been properly assessed does not create a state of urgency constituting a threat to national security. The exigency in getting a dual-axis machine in place does justify a shortcut around the NEPA mandate, particularly when DARHT operations are not scheduled to begin until the year 2000. Any economic harm is not such that it outweighs the environmental harm which is likely to ensue without adequate NEPA-based evaluation. My findings do not in any way diminish the importance of the DARHT project, but rather underscore the critical nature of the NEPA objective.

D. Public Interest

Consideration of public interest weighs against the defendants. DOE's pledge to enlist public participation during forthcoming EIS preparations is especially meaningful considering the lack of public disclosure associated with the DARHT proposal. Public interest "of the highest order" is served by "having government officials act in accordance with the law." Public Service, 825 F.Supp. at 1509. In this situation, failure of officials to carry out the NEPA directive could have repercussions damaging to the health and safety of the public. Therefore, issuance of an injunction would not be adverse to the public interest.

IV. Attorney's Fees

Plaintiffs request a reimbursement for costs, expenses, expert witness fees, and attorney's fees pursuant to the Equal Access to Justice Act, 28 U.S.C. § 2412(d)(1)(A). I defer decision on this matter to the time when the merits of the case are tried.

CONCLUSION

I find that this court has equitable jurisdiction based on a showing of irreparable injury by plaintiffs as well as a lack of adequate legal remedy. Plaintiffs would likely succeed at trial in their claim that DOE's actions concerning the DARHT facility violated the National Environmental Policy Act, 42 U.S.C. § 4321 - § 4361. Plaintiffs' risk of environmental harms flowing from such violation outweighs any harm to defendants in terms of a project delay pending DOE's completion of an EIS. Lastly, a

consideration of the public interest supports my finding that the imposition of an injunction favoring plaintiffs is appropriate.

Fed.R.Civ.P. 65(c) requires a giving of security by the plaintiffs, in an amount the district court may deem proper. See also State of Kansas ex. rel. Stephan, v. Adams, **705 F.2d 1267, 1269 (10th Cir. 1983).** Posting a substantial bond on non-profit environmental groups might chill the private mechanisms of enforcement NEPA has traditionally encouraged. See Natural Resource Defense Council v. Morton, **337 F.Supp. 167, 169 (D.C.D.C. 1971);** Wilderness Soc'y v. Tyrrel, **701 F.Supp. 1473, 1492 (E.D. Cal. 1988),** rev'd on other grounds, **918 F.2d 813 (9th Cir. 1990).** I therefore require that the plaintiffs post a nominal bond for security in the amount of $100.00.

A Decree of Injunction will be issued contemporaneously with this Memorandum Opinion and Order.

IT IS SO ORDERED.

SENIOR UNITED STATES DISTRICT JUDGE