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July 1, 2010

The Honorable Dr. Steven Chu, Secretary
Department of Energy
1000 Independence Ave SW
Washington, DC 20585

The Honorable Mr. Tom D'Agostino, Administrator
National Nuclear Security Administration
1000 Independence Ave SW
Washington, DC 20585

Re: A new Environmental Impact Statement (EIS) under the National Environmental Policy Act (NEPA) is needed for the Chemistry and Metallurgy Research Replacement Nuclear Facility (CMRR-NF) at Los Alamos National Laboratory (LANL).

Dear Secretary Chu and Administrator D'Agostino:

The undersigned represents the Los Alamos Study Group (Study Group).¹ The purpose of this letter is to invite your attention to the following important matters regarding the construction and operation of the proposed CMRR-NF, presented first in summary form and subsequently in greater detail.

The Study Group is a nonprofit research and educational organization based in Albuquerque, New Mexico, which focuses on educating the general public, federal and contractor management, members of Congress, and others on a range of interrelated policy issues, including Department of Energy (DOE) missions, programs, and infrastructure. The Study Group and many of its members have been intimately involved in analysis and education regarding LANL plutonium infrastructure and programs since October 1989.²

The Study Group has approximately 2,691 members and supporters within a 50-mile radius of LANL, approximately 2,341 of whom live within a 30-mile radius of LANL. These people, along with other Study Group members, are directly affected by federal choices

¹ For general background please see <http://www.lasg.org> and for specific background regarding the CMRR and closely related issues see http://www.lasg.org/CMRR/open_page.htm.

² Some of the resulting public discussion is archived at http://www.lasg.org/Pit_Prod.htm.

regarding construction and operation of the proposed CMRR-NF. Many of these members would be directly harmed by the environmental impacts of CMRR-NF.

From time to time and as the occasion warrants, the Study Group has been formally joined in its concerns regarding LANL plutonium infrastructure and programs – including many of the same issues we raise here – by hundreds of nonprofit organizations, churches, and businesses.³

The Study Group and its members have commented to the National Nuclear Security Administration (NNSA) and its predecessor DOE Defense Programs (DP) regarding the matters raised here on almost every possible occasion over the last two decades. The Study Group commented on the scope of the CMRR EIS.⁴ Dozens of Study Group members commented on the draft CMRR EIS.

On numerous occasions, the Study Group discussed CMRR issues with NNSA officials in Los Alamos and has travelled dozens of times to Washington, DC to meet with NNSA and other executive branch officials, as well as members of Congress and their staff, regarding some of the issues raised here, as well as closely related matters. To the limit of the Study Group's resources and abilities, and within the limits of information available to them, the Study Group has carefully followed and engaged with the federal government on all CMRR issues. They have diligently pursued and exhausted all the administrative remedies available to them, and many more, over a decade-long period, specifically concerning CMRR.

Brief CMRR Background

The aim of the CMRR Project (initially an element within NNSA Project 03-D-103, now Project 04-D-125) is to complete two new buildings at LANL's Technical Area (TA-) 55, the CMRR-NF and a Radiological Laboratory, Utility, and Office Building (RLUOB).⁵ A general location map is attached as Figure 1. Figure 2 is an aerial view showing the CMRR site. The primary purpose of the CMRR facility is to facilitate the large-scale production of plutonium warhead cores ("pits").⁶

³For example see the endorsers of the "Call for Nuclear Disarmament" at <http://www.lasg.org/campaigns/CallEndorsers.htm>, which includes: "We therefore call upon our elected leaders to: Stop the design and manufacture of *all* nuclear weapons, including plutonium bomb cores ("pits") at Los Alamos and elsewhere [;] ... Halt disposal of nuclear waste at Los Alamos, as thousands of citizens and dozens of environmental organizations have already requested."

⁴ Letter from Greg Mello to Elizabeth Withers, CMRR EIS document manager, August 14, 2002. Not in CMRR EIS.

⁵ NNSA's most recent Project Data Sheet (PDS) for the CMRR Project is in the DOE FY2011 Congressional Budget Request (CBR), Vol. 1, pp. 215-235, available at <http://www.cfo.doe.gov/> under "Products and Services."

⁶ "The 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." House Report 110-185,

CMRR-NF and RLUOB comprise 90% and 10% of the total estimated CMRR construction cost, respectively (i.e. \$3,431.6 million and \$363.4 million, respectively, out of a recently-estimated \$3,795.0 million).⁷ The CMRR project would also decommission, demolish, and dispose of the Chemistry and Metallurgy Research (CMR) building, unless this work is arranged under another line item,⁸ or unless part of the CMR is retained.⁹ CMR disposition is expected to cost in the neighborhood of \$400 million in today's dollars (a very preliminary estimate).¹⁰ Including this rough figure for CMR disposition, the total CMRR cost given in DOE's February 1, 2010 budget submission to Congress becomes \$4,195 million.

RLUOB is physically complete and is being outfitted for use. It is expected to be ready for full occupancy in fiscal year (FY) 2013 and for full beneficial use approximately one year later in 2014, according to NNSA.¹¹ In contrast, all aspects of CMRR-NF are still in preliminary design. Despite congressional concern¹² there is no CMRR-NF performance baseline.¹³

June 11, 2007, p. 105, http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=110_cong_reports&docid=f:hr185.110.pdf.

⁷ NNSA, CMRR PDS for FY2011.

⁸ Ibid.

⁹ NNSA is currently considering retaining CMR Wing 9. Oral statement of members and staff of the Defense Nuclear Facilities Safety Board (DNFSB) to Greg Mello, May 7, 2010. NNSA had a funded project, partially executed when it was terminated at the end of FY2001 in favor of CMRR, to upgrade all but two CMR wings.

¹⁰ Study Group estimate in 2010 dollars, to one significant digit, from DOE FY2011 CMRR PDS, p. 228.

¹¹ Steve Fong, NNSA Los Alamos Site Office (LASO) CMRR Project Manager, and Rick Holmes, LANL CMRR Project Manager, "Chemistry and Metallurgy Research Replacement (CMRR) Project Update, March 3, 2010, LA-UR 10-01115. http://www.lasg.org/CMRR/LA-UR-10-01115_CMRR-Public-Mtg_Mar-2010-Vol-9.pdf. Steve Fong, telephone conversation, 6/1/2010.

¹² "The committee is very concerned that the NNSA follow the DOE 413 order series and project management and guidance. The NNSA is also directed to conduct a true independent cost estimate for the CMRR Nuclear Facility [CMRR-NF], phase III of the CMRR project. The committee is concerned that the phase III project [CMRR-NF] is being divided into multiple sub-projects. Notwithstanding this management approach the committee directs the CMRR baseline to reflect all phases and subprojects for the purposes of the cost and schedule baseline provision and to be accounted for as a single project." FY2011 Defense Authorization Act Senate Report, pg. 274, at http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=111_cong_reports&docid=f:sr201.111.pdf.

¹³ In DOE project management, a "performance baseline" consists of a detailed project scope of work, a completed preliminary design (25-30% of completed design, with a clearly-understood path to all the rest), key performance parameters understood, specified, and agreed to by all relevant parties, a cost estimate (80-90% confidence), a completion schedule (80-90% confidence), and well-organized and approved documentation supporting these. DOE G 413.3-5 "Performance Baseline Guide," 9/12/08, <http://www.er.doe.gov/opa/PDF/g4133-5%20Performance%20Baseline.pdf>.

As shown in Figure 3, NNSA now seeks to divide CMRR-NF into five (5) phases and to begin (proposed concurrent) final design and construction of the initial CMRR-NF phase in mid-FY2011, i.e. on or about 4/1/10,¹⁴ unless Congress directs otherwise or does not provide adequate funding. The first CMRR-NF phase includes temporary utilities, site preparation for laydown yards, site utility relocation, site excavation to 125 ft deep, soil stabilization involving a projected 225,000 yd³ of lean concrete and/or soil grout, warehouse (concurrent design/build), and electrical substation (concurrent design/build). The fifth and final CMRR-NF phase, which includes the proposed concurrent final design and construction of all aspects of the CMRR-NF facility itself other than its foundation and structural components, will not acquire a performance baseline, including a reasonably confident cost estimate, until on or about April 1, 2014¹⁵ – three years after construction is slated to begin.

Summary of Concerns

As shown in Figure 4, the CMRR proposed today is expected to cost ten times as much¹⁶ as was estimated in the November 14, 2003 CMRR EIS.¹⁷ Roughly the same scaling factor applies to the nuclear laboratory component of CMRR, now called CMRR-NF, which in absolute terms is responsible for nearly all the projected cost increases.

Even without adducing further evidence, these huge cost increases strongly suggest that reasonable alternatives exist in lieu of conducting the project as currently proposed. The range of alternatives analyzed in the CMRR EIS was very narrow, in part because the nuclear laboratory component of the project was expected to be relatively inexpensive and soon available. Neither has turned out to be true. The CMRR EIS was based on a matrix of assumptions now known to be false.

Most of this cost increase has occurred in the last three years – much of it in just the last year, betokening a recent rapid expansion in project scale and impacts. Since most of the increased impacts, new impacts, and novel project elements were added recently – some of the most egregious very recently indeed – the full measure of the Study Group's concerns could hardly have been expressed sooner. This dramatic cost increase has been accompanied by a huge increase in resource requirements. In key cases more than ten times as many resources are now required as were originally estimated, as shown in Table 1 (attached).

Today's proposed CMRR-NF, which is on a larger scale entirely than the alternatives analyzed in 2003, has never been the subject of any NEPA analysis. In fact, the presently

¹⁴ John Bretzke, LANL Deputy Associate Director, "Pajarito Construction Activities," June 16, 2010 presentation, slide 7, at http://www.lanl.gov/projects/pcc/presentations/John-Bretzke_Presentation_for_Community_Forum.pdf.

¹⁵ Ibid.

¹⁶ Figure 4 cost estimates are from NNSA's PDSs for the CMRR, found in annual congressional budget requests.

¹⁷ DOE Final CMRR Environmental Impact Statement, EIS-0350, at <http://www.gc.energy.gov/NEPA/finalEIS-0350.htm>.

proposed CMRR-NF involves dramatically greater construction impacts than any of the CMRR alternatives analyzed in 2003. Some of these impacts are shown in Table 1. Today's CMRR-NF also includes several new, unanalyzed project elements, including additional buildings, construction yards, and major traffic modifications, and has entirely new categories of impacts, than were never mentioned in the CMRR-EIS, let alone analyzed there.

Central, pervading elements of the *initial* CMRR-NF phase ("Infrastructure Package Construction") were never analyzed in the CMRR EIS. The February 18, 2004 Record of Decision (ROD)¹⁸ did not choose the CMRR-NF that NNSA now wants to build. Significantly, the presently proposed CMRR-NF was not even among the choices analyzed or available when the ROD was issued.

Moreover, no NEPA analysis of the CMRR nuclear laboratory, now CMRR-NF, was provided in either the April 4, 2008 LANL Site-Wide Environmental Impact Statement (SWEIS)¹⁹ or the October 24, 2008 Complex Transformation Supplemental Programmatic Environmental Impact Statement (CTSPEIS).²⁰ This lack of appropriate NEPA analysis is all the more apparent when CMRR-NF is considered in the context of NNSA's integrated "Pajarito Construction Corridor"²¹ and its "Integrated Nuclear Planning,"²² both of which include a number of connected infrastructure plans, decisions, and projects. These projects are functionally interrelated, geographically proximate, and more or less contemporaneous. See, for example, Figures 5 and 6 (attached), presented by LANL to the Espanola business community and public on June 16, 2010.²³

Without further disclosure of the project alternatives that have been considered – and, upon information and belief, are still being, or are about to be considered – and without any

¹⁸ http://nepa.energy.gov/EIS-0350ROD_021404.pdf.

¹⁹ <http://www.doeal.gov/laso/NEPASWEIS.aspx>.

²⁰ <http://www.complexttransformationspeis.com/>.

²¹ LANL, Bretzke, op. cit.

²² E.g. "NNSA will not make a decision [in the CMRR ROD] on other elements or activities that have been recently undertaken *associated* with the LANL "Integrated Nuclear Planning" (INP) initiative. ...Recognizing the need for the CMRR Project to be *integrated* with other contemplated actions, near and long term, affecting nuclear mission capabilities at LANL, NNSA and UC at LANL developed the INP process. INP is intended to provide an *integrated, coordinated* plan for the *consolidation* of LANL nuclear facility construction, refurbishment and upgrade, and retirement activities." CMRR EIS, op. cit., p. S-7. Emphasis added. The decisions made under INP are "connected actions" under NEPA: "Connected actions, which means that they are closely related and therefore, should be discussed in the same impact statement. Actions are connected if they: (i) Automatically trigger other actions which may require environmental impact statements; (ii) Cannot or will not proceed unless other actions are taken previously or simultaneously; (iii) Are interdependent parts of a larger action and depend on the larger action for their justification. (40 CFR 1508.25)

²³ See <http://www.lanl.gov/construction/>.

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NEPA analysis of the resulting environmental impacts, it is not clear whether NNSA's overall Pajarito Road project is (1) tantamount to a "Modern Pit Facility," for which no EIS was ever completed; or (2) is really a "Pajarito Corridor Construction Project,"²⁴ for which no EIS has even been initiated; or (3) is quite simply a different and new project now called CMRR-NF, for which no applicable EIS was ever produced. In any of these alternative cases an original EIS is needed, beginning with establishment of an appropriate scope of analysis through the required scoping process.²⁵

In addition to the above concerns, there was never any notice or comment process involving the public, agencies, or tribes concerning: (1) the nature of project being designed today; (2) the available alternatives; or (3) the likely impacts of the new project and its alternatives. Six years past the CMRR ROD, the public, agencies, and tribes have not even been notified that the project alternatives analyzed in the CMRR EIS, and the alternative chosen in the CMRR ROD, were far smaller and less impactful projects than the one proposed today, as Table 1 shows. These procedural and informational injuries have harmed all these parties and they have harmed the Study Group.

Remedy

The Council on Environmental Quality (CEQ) states at (40 CFR 1502.9(c)(1):

Agencies: (1) Shall prepare supplements to either draft or final environmental impact statements if: (i) The agency makes substantial changes in the proposed action that are relevant to environmental concerns; or (ii) There are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts.

These requirements are echoed at 10 CFR 1021.314. However, the preparation of a SEIS at this stage is inadequate and inappropriate because there are not *only* "substantial changes to the [CMRR] proposal" and "significant new circumstances or information relevant to environmental concerns" (10 CFR 1021.314) but *also and in addition*, these changes are of such a sweeping nature as to affect the range of "actions, alternatives, and impacts" that are the essence of the scoping process (40 CFR 1508.25) and of the project definition itself. Failure to publicly review the scope of possible actions and alternatives would be tantamount to a post-decision environmental analysis – better paperwork, but without the objective "hard look" needed to freshly evaluate project alternatives without prejudice. As stated at 40 CFR 1500.1:

²⁴ As presented in the LANL June 16, 2010 forum.

²⁵ See especially 40 CFR 1501.7, 1508.22, and 1508.25. DOE's scoping requirements at 10 CFR 1021.311 include the notice of intent requirements of 40 CFR 1508.22, which must include the proposed alternatives to be analyzed. "Scope consists of the range of actions, alternatives, and impacts to be considered in an environmental impact statement..." (40 CFR 1508.25). This range has changed dramatically since the original notice of intent of July 23, 2002 to prepare an EIS for CMRR (<http://www.epa.gov/EPA-IMPACT/2002/July/Day-23/i18552.htm>).

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NEPA's purpose is not to generate paperwork – even excellent paperwork – but to foster excellent action. The NEPA process is intended to help public officials make decisions that are based on understanding of environmental consequences, and take actions that protect, restore, and enhance the environment. (40 CFR 1500.1)

Because the original EIS never analyzed the project being designed and proposed today, together with reasonable alternatives to it, there is no applicable EIS to supplement.

NNSA cannot continue its investigation of its currently-preferred alternative without applicable NEPA analysis. The Council on Environmental Quality's (CEQ's) government-wide NEPA regulations state (at 40 CFR 1506.1):

(a) Until an agency issues a record of decision as provided in §1505.2 (except as provided in paragraph (c) of this section), no action concerning the proposal shall be taken which would: (1) Have an adverse environmental impact; or (2) Limit the choice of reasonable alternatives....

DOE's NEPA regulations state (at 10 CFR 1021.210):

(b) DOE shall complete its NEPA review for each DOE proposal before making a decision on the proposal (e.g., normally in advance of, and for use in reaching, a decision to proceed with detailed design), except as provided in 40 CFR 1506.1 and §§1021.211 and 1021.216 of this part.

DOE further requires (at 10 CFR 1021.211, "Limitations on actions during the NEPA process") that:

While DOE is preparing an EIS that is required under §1021.300(a) of this part, DOE shall take no action concerning the proposal that is the subject of the EIS before issuing an ROD, except as provided at 40 CFR 1506.1.

Pursuant to these laws, we request that you halt any and all CMRR-NF design activities, make no further contractual obligations, and seek no further funding until a CMRR-NF EIS is written and subsequent ROD is filed. These actions must be undertaken and are necessary and appropriate to evaluate and choose viable project alternatives.²⁶

²⁶ The CMRR-NF project has been developed long past DOE's normal NEPA threshold, incurring some \$289 million in appropriations so far (but still only 8.5% of expected total costs), prejudicing NNSA's choice of alternatives. It is precisely to avoid a waste of resources and to avoid prejudicing decisions that "[I]n conventional construction, this step [NEPA analysis] occurs in the Pre-Title I phase of project development." DOE Order 430.1-1, p. 3-4. <https://www.directives.doe.gov/directives/current-directives/430.1-EGuide-1-Chp03/view?searchterm=NEPA>.

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Neither Congress nor the Administration has made any commitment to initiate final design (“Critical Decision 2,” in DOE parlance), or to build (“Critical Decision 3”) CMRR-NF. As noted above, both commitments are expected on about April 1, 2011, barring further delays. Thus, if the needed NEPA (and business case) analyses are begun promptly, NNSA should be able to achieve NEPA compliance without any, or without any significant, project delay.

The present moment is an ideal time to initiate the required NEPA analysis. *Accurate* NEPA analysis could not have begun prior to this year, given the very recent changes and expansions in the ever-evolving, and now quite different than previous, “project.” In contrast, delaying the necessary NEPA analysis would significantly delay the project – *assuming it can properly go forward at all given the recently-expressed concerns of Congress*. The Senate Armed Services Committee has requested a review of CMRR-NF project alternatives²⁷ and as noted above also questions the propriety of initiating final design and construction without an approved project baseline, which will take at least two or three years to complete.²⁸ Consequently, our request, and NEPA’s requirements, need not delay agency action and will help, not harm, agency interests.

²⁷ “The committee continues to believe that replacing the existing Chemical and Metallurgical Research facility [sic] is essential but that the new Chemical and Metallurgical Research Replacement (CMRR) facility has many unresolved issues including the appropriate size of the facility. CMRR will be a category I facility supporting pit operations in building PF-4. Now that the Nuclear Posture Review is completed the NNSA and the Department of Defense (DOD) are in a better position to ensure that the facility is appropriately sized.” FY2011 Defense Authorization Act Senate Report, pg. 274, at http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=111_cong_reports&docid=f:sr201.111.pdf.

²⁸ From a hearing of the Strategic Forces Subcommittee of the Senate Armed Services Committee, April 14, 2010:

SEN. BINGAMAN: Thank you. Let me ask about this CMR replacement project facility. The budget you have given us doesn't have in it any cost estimates. I guess your statement just a few minutes ago related to this. When would we expect to have firm cost estimates and completion dates for that project?

MR. D'AGOSTINO: We expect, I expect in calendar year 2012 time frame. Whether that bridges into fiscal year '12 or '13, I'd have to double check exactly. It's going to take us a good year-and-a-half more of design work to be confident. But the most important thing is my desire, the secretary's desire, is to work, get the department's reputation back on track with respect to large facilities. We do have programs in the department that do well in this, and what we've learned is that in getting the design work largely completed, we're getting it to around the 80 to 90 percent level is what it takes in order to do that. So, we're going to work on that approach here for these two facilities. My expectation is about the 2012 time frame to get that done. If it takes longer though, sir, I'm willing to push back the performance baseline by a year in order to make sure I know what we're asking for. I think in the long run that will be the right thing to do.

LANL (see Figure 3) more recently estimated a completion date of 2014 for this milestone.

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Thank you for your consideration of these matters. We would appreciate a prompt and principled response so that we may avoid pursuing further legal remedies.

Sincerely,



Thomas M. Hnasko

Attachments:

- Figure 1: CMRR-NF location map
- Figure 2: Aerial view of LANL TA-55, showing RLUOB and CMRR-NF site
- Figure 3: CMRR-NF project schedule
- Figure 4: History of CMRR projected costs
- Figure 5: Map of selected "Pajarito Construction Corridor" projects
- Figure 6: List of "Pajarito Construction Corridor" projects
- Table 1: Selected CMRR-NF construction requirements & impacts; new & omitted elements

cc:

President Barack Obama
Vice President Joe Biden
Senator Jeff Bingaman, New Mexico
Senator Tom Udall, New Mexico
Representative Ben Ray Lujan, New Mexico Third Congressional District
Senator Dan Inouye, Chairman, Committee on Appropriations
Senator Thad Cochran, Vice-Chairman, Committee on Appropriations
Senator Byron Dorgan, Chairman, Appropriations Subcommittee on Energy and Water Development
Senator Bob Bennett, Ranking Member, Senate Subcommittee on Energy and Water Development
Senator Carl Levin, Chairman, Committee on Armed Services
Senator John McCain, Ranking Member, Committee on Armed Services
Representative Dave Obey, Chairman, Committee on Appropriations
Representative Jerry Lewis, Ranking Member, Committee on Appropriations
Representative Peter J. Visclosky, Chairman, Subcommittee on Energy and Water Development
Representative Rodney Frelinghuysen, Ranking Member, Subcommittee on Energy and Water Development
Representative Ike Skelton, Chairman, Committee on Armed Services
Representative Howard P. (Buck) McKeon, Ranking Member, Committee on Armed Services
Peter S. Winokur, Chairman, Defense Nuclear Facilities Safety Board
Jonathan Gill, Assistant Director, Government Accountability Office
Jonathan Medalia, Specialist in Nuclear Weapons Policy, Congressional Research Service

Figure 1

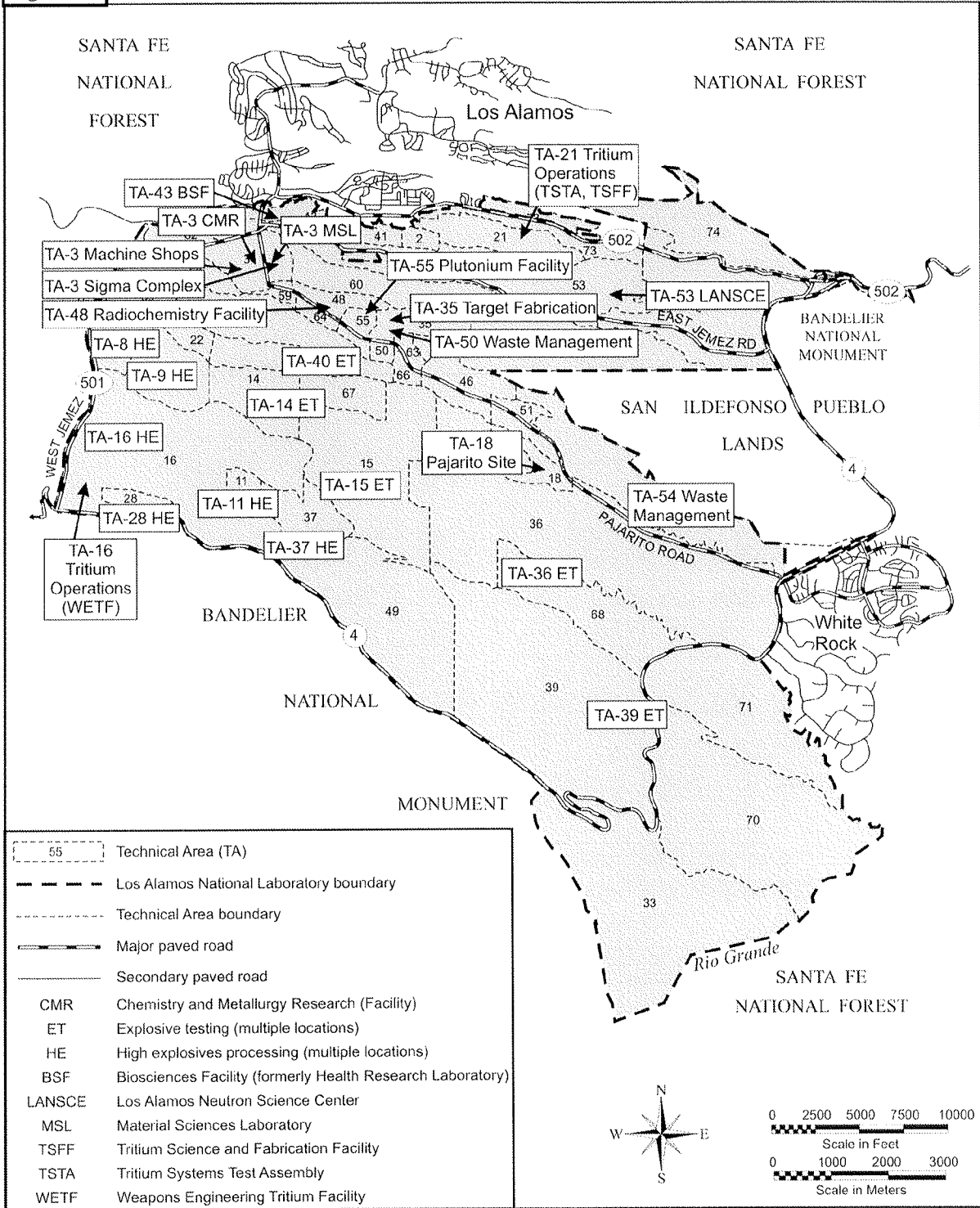


Figure S-4 Locations of Key Facilities

Figure 2

CMRR at Technical Area-55

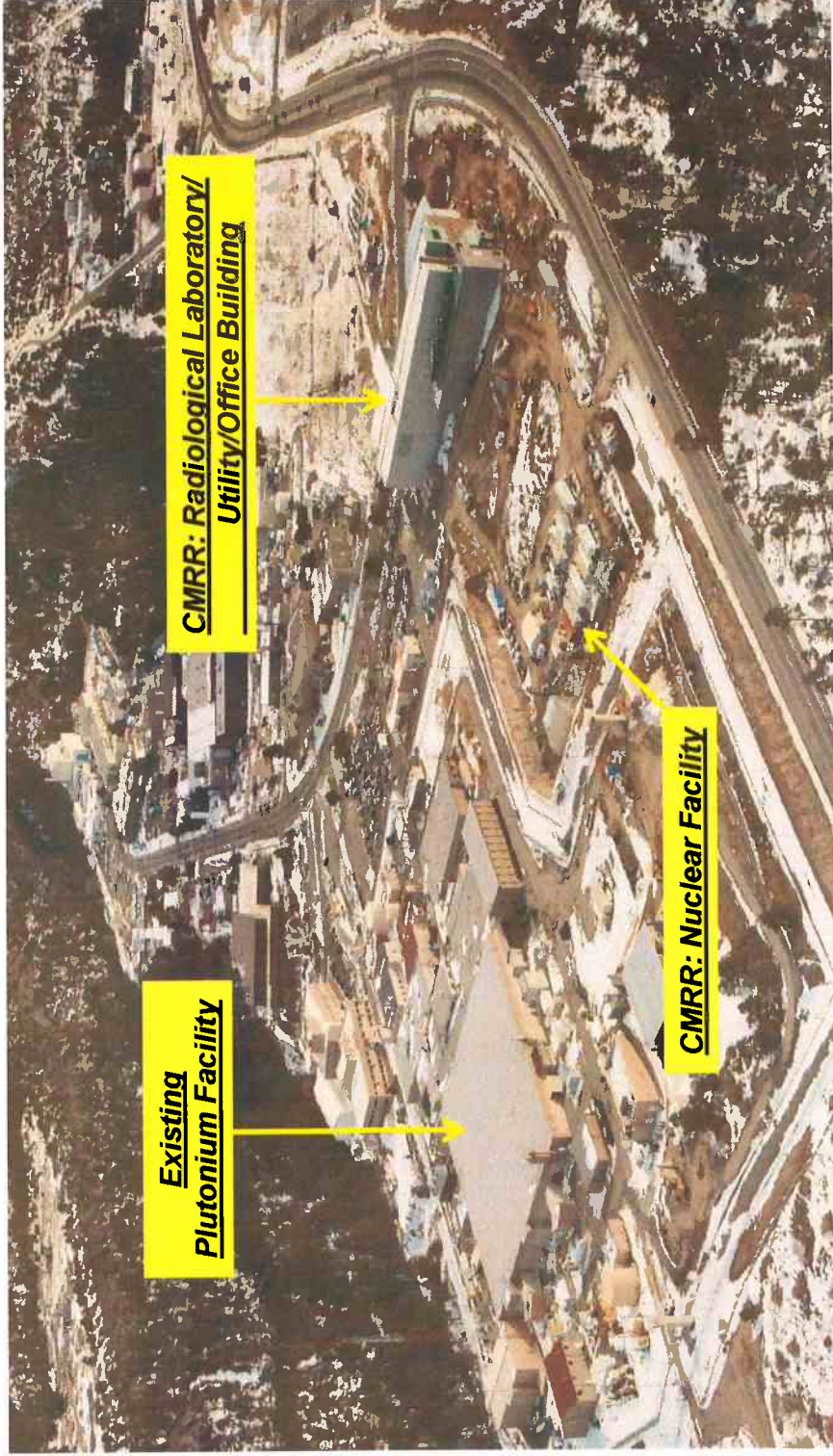
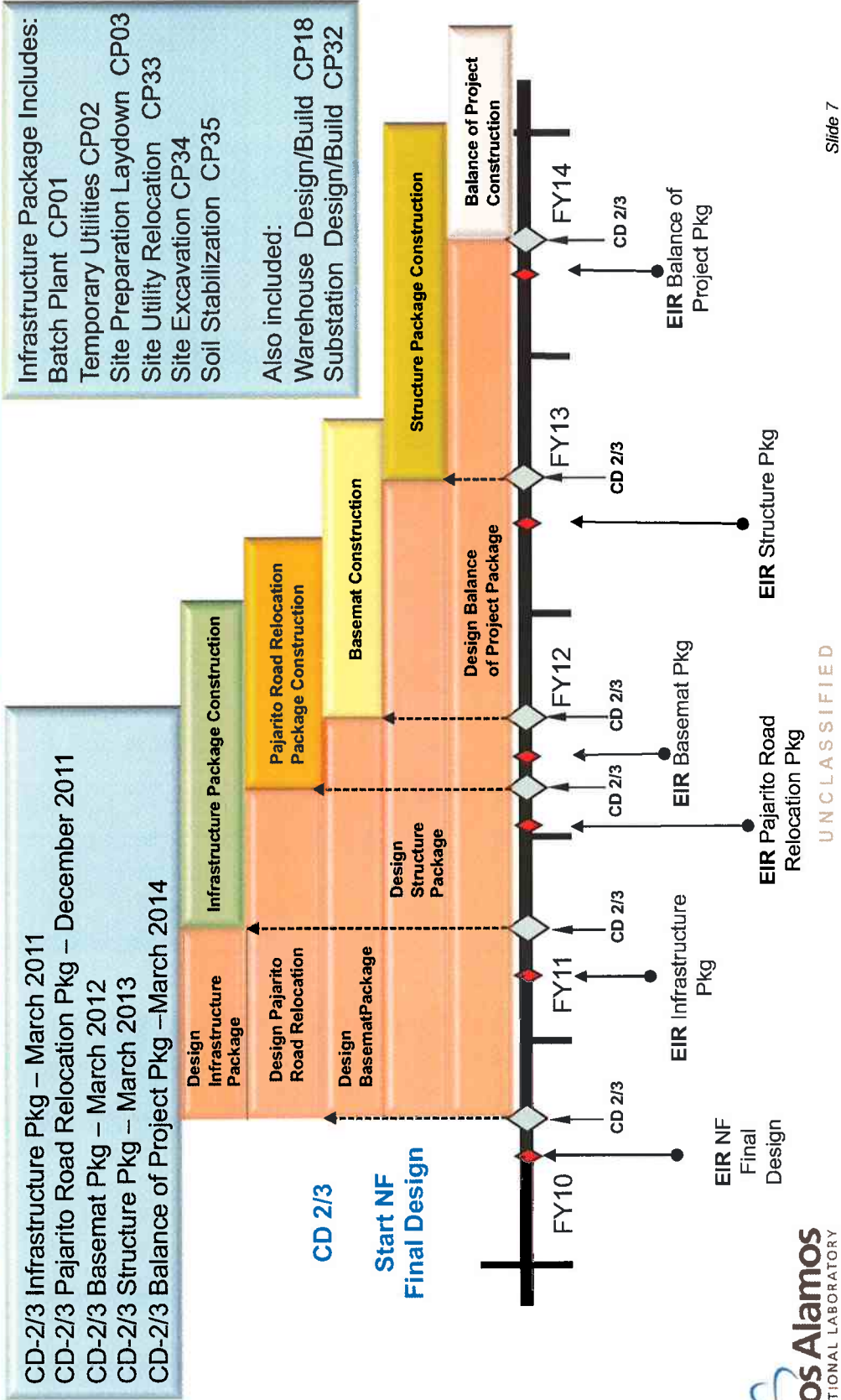


Figure 3

CMRR Nuclear Facility Baselines



CD-2/3 Infrastructure Pkg – March 2011
CD-2/3 Pajarito Road Relocation Pkg – December 2011
CD-2/3 Basemat Pkg – March 2012
CD-2/3 Structure Pkg – March 2013
CD-2/3 Balance of Project Pkg – March 2014

Infrastructure Package Includes:
Batch Plant CP01
Temporary Utilities CP02
Site Preparation Laydown CP03
Site Utility Relocation CP33
Site Excavation CP34
Soil Stabilization CP35

Also included:
Warehouse Design/Build CP18
Substation Design/Build CP32

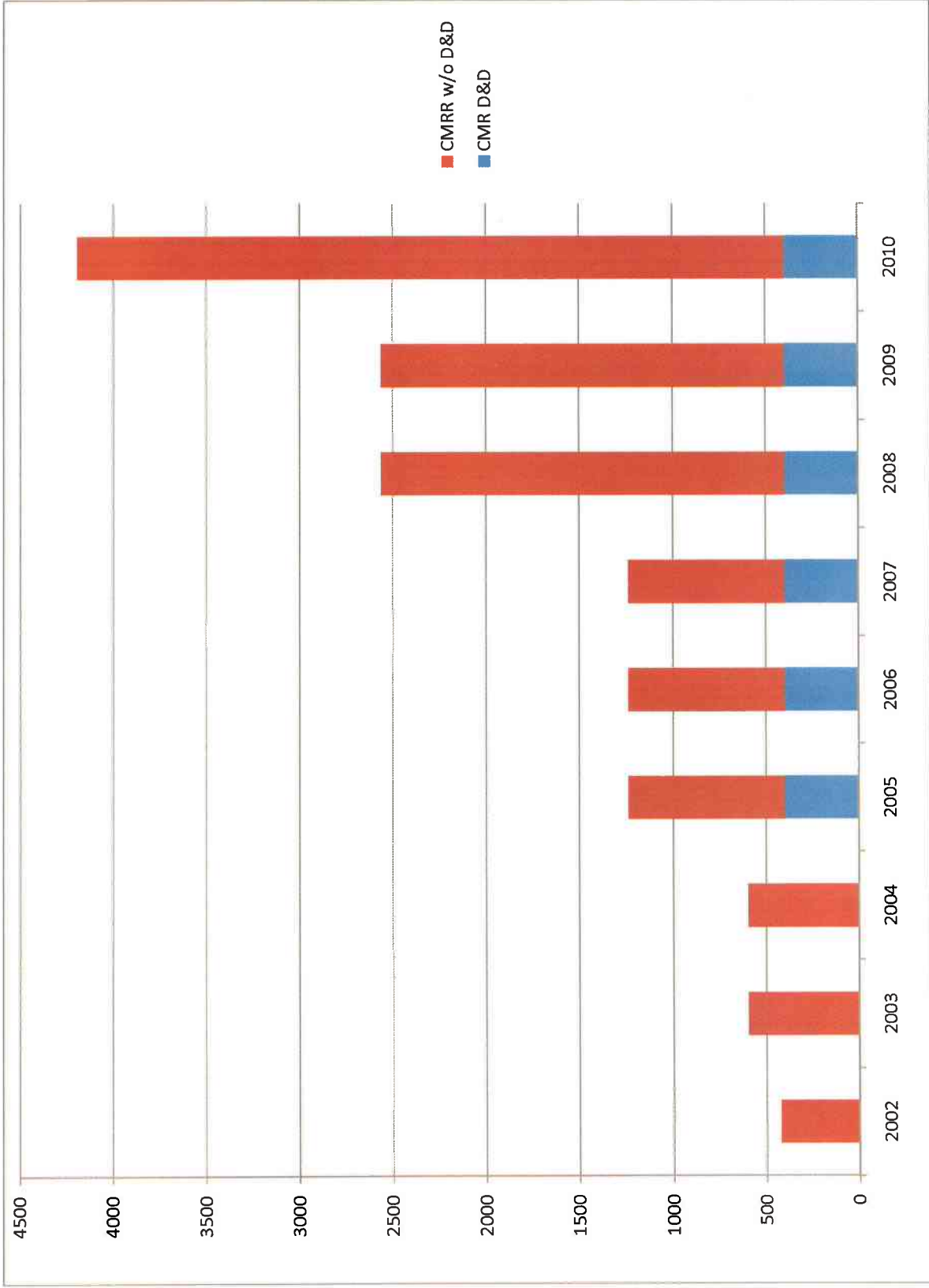


Figure 4: History of NNSA CMRR Cost Projections So Far (\$ million, M) (NNSA)

All costs are Total Project Cost (TPC) except 2002, which is the mid-point in the Total Estimated Cost (TEC) range; CMR D&D at \$400 M; project laboratory space declined over this period, raising the per unit cost of space more than indicated

Figure 5

Construction Project Layout

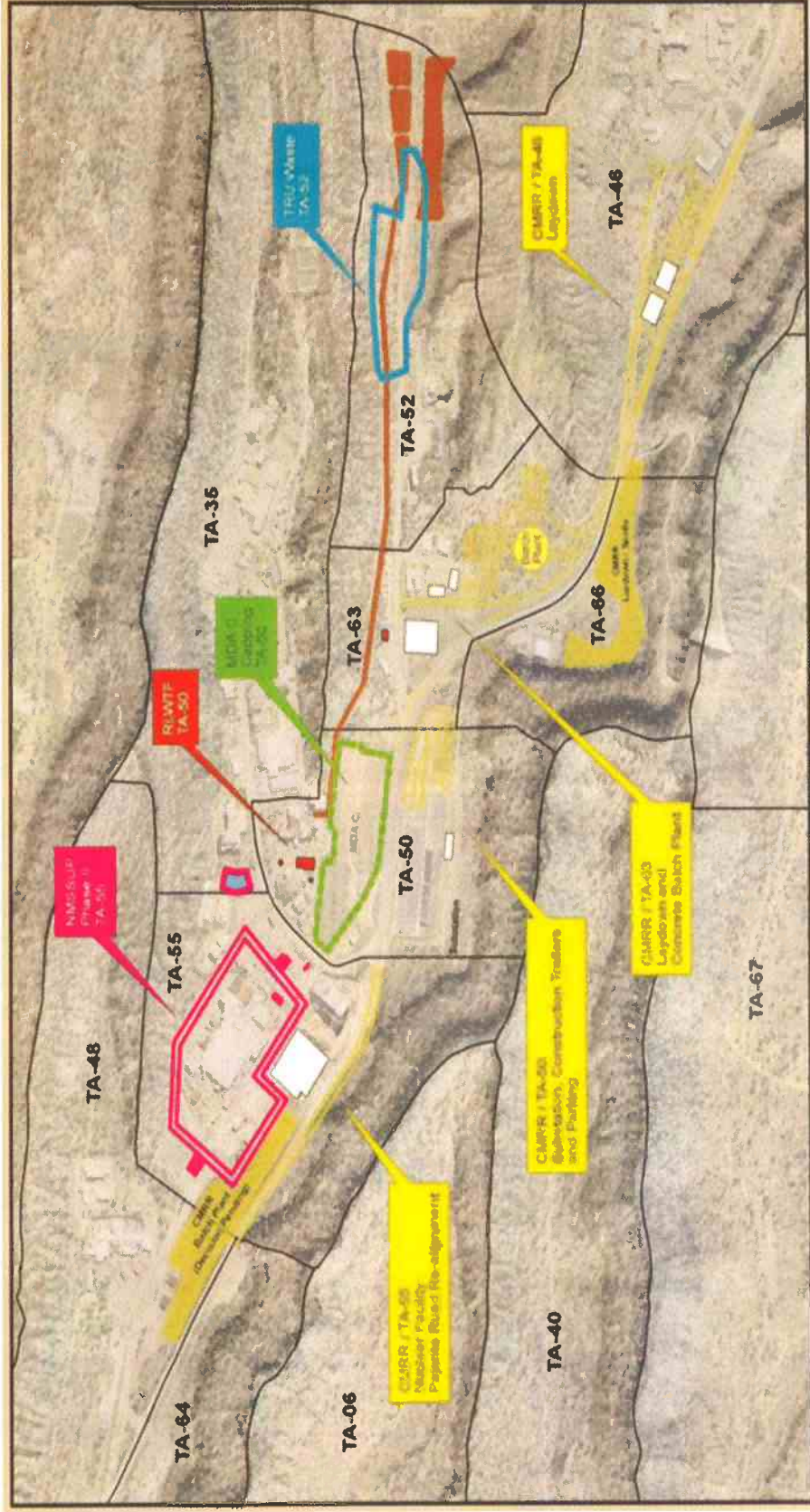


Figure 6

Major Projects-Near Concurrent Activities

- **Chemistry & Metallurgy Research Replacement (CMRR)**
- **Nuclear Materials Safeguards and Security Upgrade Project (NMSSUP) Phase II**
- **TA-55 Revitalization Project (TRP) Phase II & III**
- **Radioactive Liquid Waste Treatment Facility (RLWTF)**
- **TRU Waste Facility (TRU)**
- **Material Disposal Area-C Closure**
- **Material Disposal Area-G Closure**
- **Waste Disposition Project**
- **RLUOB Occupancy**

Table 1: Selected CMRR-NF construction requirements & impacts; new and omitted project elements; operational impacts omitted

Assessed construction requirements	CMRR EIS (two or three buildings)	CMRR-NF only
Land	26.75 acres	Greatly increased acreage
Locations	TA-55 (or TA-6)	TA-55, TA48, TA-63, TA-66, TA-46 and TA-50, TA-54 or TA-36 and possibly more.
Laydown yard(s)	1 site, 2 acres max	Many sites, ~19 acres
Concrete and soil grout	6,255 yards ³	347,000 yards ³ (55 times original for <i>both</i> buildings)
Steel	558 us tons	>15,000 us tons (27 times original for <i>both</i> buildings)
Peak employment	300	844
Temporary worker housing	Minimal impact	Major impact
Construction period	34 months	144 months
Excavation depth	50-75 ft. Max	125 ft.
Un-assessed construction impacts		
CO2 emissions from concrete	Not analyzed	>100,000 metric tons
Other sources	Not analyzed	Significant emissions
Truck traffic and worker transport		
Aggregate deliveries for concrete	Not analyzed	Up to 24,000 dump truck trips (at 55k lbs.)
Traffic impacts	Not analyzed	Significant impacts
Air quality	Not analyzed	Needs analysis
Road wear	Not analyzed	Needs analysis
Other trucking impacts	Not analyzed	Needs analysis
Worker transport to site	Minimal impact	Significantly increased
Aggregate mining	Not analyzed	Significant impacts
Worker Safety	Not analyzed	Significantly impacted by depth, scale, and duration of new project
CMR operations	Assumed out by 2010, safety upgrades dropped.	Extended and maintained in unsafe condition by delay and costs of CMRR-NF.
New project elements		
Craft worker facility		Needs analysis
Electrical substation		At TA-50, needs analysis
Stormwater pond		Needs analysis
Traffic modifications		
Possible bypass road		Route unknown, significant impacts, needs analysis
Closure of Pajarito Road		2 years, affecting 4,600 employees, significant impacts
Truck inspection facility		Location unknown, needs analysis
Warehouse		10,000 square foot, needs analysis
Temporary facilities for displaced "Pajarito Corridor" operations		Needs analysis, significant impacts
Omitted project elements		
CMRR disposition	Not analyzed	Impact very large, needs analysis
Connected actions include elements of the variously named "Pajarito Construction Corridor," "Integrated Nuclear Planning," and "Plutonium Center of Excellence."		

Sources:

1. NNSA, "Final CMRR Environmental Impact Statement," November 2003, DOE/EIS-0350.
2. NNSA public statements.
3. Other NNSA communications.
4. "Cement and Concrete: Environmental Considerations," Environmental Building News, March 1, 1993. <http://www.buildinggreen.com/auth/article.cfm/1993/3/1/Cement-and-Concrete-Environmental-Considerations/>