

Department of Energy FY 2016 Congressional Budget Request



National Nuclear Security Administration

**Federal Salaries and Expenses
Weapons Activities
Defense Nuclear Nonproliferation
Naval Reactors**

Department of Energy

FY 2016 Congressional Budget Request



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FY 2015 Congressional Budget

Volume 1

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

1. Significant Changes and Summary

Significant Changes

This Construction Project Data Sheet (CPDS) is an update to the FY 2012 Reprogramming CPDS for CMRR and does not include a new start for the budget year. In the FY 2013 President's Budget Request, the construction of the CMRR Nuclear Facility (CMRR-NF) was deferred for at least five years and no data sheet was submitted in the past three budget requests.

The CMRR project was originally planned to meet its mission need in three phases. The first phase provided funding to construct the Radiological Laboratory/Utility/Office Building (RLUOB). The second phase provided funding for the RLUOB Equipment Installation (REI) effort which procured and installed the Special Facility Equipment (SFE) needed for the RLUOB. The third phase would have designed and constructed the Nuclear Facility (NF). Construction of the NF has been cancelled.

After CMRR-NF construction was deferred for at least five years, the NNSA developed a three-step plutonium infrastructure strategy. The first two steps in this strategy maintain continuity in analytical chemistry (AC) and materials characterization (MC) capabilities using existing facilities and will eliminate the need to construct the original CMRR-NF. This strategy was endorsed by the results of a directed business case analysis jointly conducted with the Department of Defense Office of Cost Assessment and Program Evaluation (CAPE). The first two steps in this strategy are now two subprojects under the CMRR line item described herein and will be executed using line item funding associated with this project.

This FY 2016 project data sheet describes two new subprojects which correlate to the first two steps of the new plutonium infrastructure strategy and are necessary to provide continuity in AC and MC capabilities and support the cessation of programmatic operations in the existing CMR facility by the end of calendar year 2019. These new subprojects are an alternative approach in lieu of constructing the CMRR Nuclear Facility. In addition, this data sheet updates the Total Project Cost (TPC) for the RLUOB to reflect settlement of claims associated with the project since the last data sheet submittal.

Summary

The most recent DOE Order 413.3B approved Critical Decision (CD) for the CMRR is a revised CD-1, Approve Alternative Selection and Cost Range, that was approved on August 21, 2014 with a cost range of \$2.4 billion - \$2.9 billion and CD-4 in FY 2024. Additional CD-3A requests for long lead procurement will also be pursued during 2015. The FY 2012 President's Budget Request reflected a cost range of \$3.71 billion - \$5.86 billion. CD-1 estimates for cost and schedule are provided in this data sheet for the newly proposed subprojects based on the Independent Cost Review (ICR) developed for the approved revised CD-1; these will continue to be refined during the CD process.

Critical Decision CD-3A, Approve Long Lead Procurement, was approved for the new REI Phase 2 subproject of CMRR, on December 18, 2014 following completion of an Independent Cost Estimate (ICE).

RLUOB Subproject (04-D-125-01): CD-4 approved on June 24, 2010.

RLUOB Equipment Installation (REI) Subproject (04-D-125-02): CD-4 approved on June 20, 2013.

Nuclear Facility (NF) Subproject (04-D-125-03): This subproject is cancelled.

REI Phase 2 (REI2) Subproject (04-D-125-04): Transfers part of AC and MC capabilities from CMR to RLUOB by designing, purchasing and installing additional equipment in RLUOB. The reconciled cost range for this subproject after the DOE Office of Acquisition and Project Management (DOE-APM) conducted an ICR is \$505 million - \$675 million and CD-4 is planned for first quarter (1Q) FY 2020. A CD-3A request for procurement of long lead equipment and site preparations, following a reconciled ICE conducted by DOE-APM, was approved for REI2 on December 18, 2014.

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PF-4 Equipment Installation (PEI) Subproject (04-D-125-05): Transfers remaining AC and MC capabilities from CMR to PF-4. This subproject includes room and infrastructure modifications, removal of contaminated equipment from PF-4, and procurement of new equipment for installation. The reconciled cost range for this subproject after the DOE-APM CD-1 ICR is \$995 million - \$1,365 million and CD-4 is planned for second quarter (2Q) FY 2024.

Prior year project funds and FY 2015 funds will be used to complete a conceptual design activities, long lead equipment procurements, site investigation, and other required documentation. NNSA’s Office of Defense Programs and NNSA’s Office of Acquisition and Project Management will continue to partner with the appropriate organizations within and outside DOE during the process to achieve an approved Performance Baseline. Estimates will be finalized once the project has achieved 90 percent design maturity and baseline approval.

Some Other Project Costs (OPCs) will be funded from the prior year funding that was approved for reprogramming from this line item to RTBF Operations of Facilities (\$17 million). We will utilize these available funds in accordance with direction provided by the appropriate committees. Additional OPCs are addressed in this budget request.

Of the preliminary cost range of \$1,500 million - \$2,050 million for the sum of the REI2 and PEI subprojects, \$17 million of the \$43.3M reprogrammed in FY 2013 and \$35.7 million of the FY 2015 appropriations are included in this range.

A Federal Project Director at the appropriate level will be assigned to each sub-project. Project funds may be used by the Federal Project Directors for contracted support services for the federal project team.

2. Critical Milestone History

(fiscal quarter or date)

	CD-0	Conceptual Design Complete	CD-1	CD-2	Final Design Complete	CD-3	D&D Complete	CD-4
FY 2004	07/16/2002	N/A	1QFY2004		N/A	2QFY2004	N/A	1QFY2011
FY 2005	07/16/2002	N/A	3QFY2004		N/A	3QFY2005	N/A	3QFY2012
FY 2006	07/16/2002	N/A	2QFY2005	4QFY2005	N/A	1QFY2006	N/A	4QFY2010
FY 2007	07/16/2002	N/A	09/30/2005	1QFY2006	N/A	1QFY2006	N/A	1QFY2013
FY 2008	07/16/2002	N/A	09/30/2005	10/21/2005	N/A	1QFY2006	N/A	1QFY2013
FY 2009	07/16/2002	N/A	09/30/2005	TBD	N/A	TBD	N/A	TBD
FY 2010	07/16/2002	N/A	09/30/2005	TBD	N/A	TBD	N/A	TBD
FY 2011	07/16/2002	N/A	05/18/2005	TBD	N/A	TBD	N/A	TBD
FY 2012	07/16/2002	N/A	05/18/2005	4QFY2012	N/A	4QFY2012	N/A	TBD
FY 2012 Rep	07/16/2002	N/A	05/18/2005	TBD	TBD	TBD	N/A	TBD
FY 2016	07/16/2002	4QFY2015	4QFY2014	3QFY2016	2QFY2016	3QFY2016	4QFY2019	4QFY2024

RLUOB Subproject (04-D-125-01)

(fiscal quarter or date)

	CD-0	Conceptual Design Complete	CD-1	CD-2	Final Design Complete	CD-3	D&D Complete	CD-4
FY 2011	07/16/2002	N/A	05/18/2005	10/21/2005	N/A	10/21/2005	N/A	02/28/2010
FY 2012	07/16/2002	N/A	05/18/2005	10/21/2005	N/A	10/21/2005	N/A	06/24/2010
FY 2012 Rep	07/16/2002	N/A	05/18/2005	10/21/2005	N/A	10/21/2005	N/A	06/24/2010
FY 2016	07/16/2002	N/A	05/18/2005	10/21/2005	N/A	10/21/2005	N/A	06/24/2010

RLUOB Equipment Installation (REI) Subproject (04-D-125-02)

(fiscal quarter or date)

	CD-0	Conceptual Design Complete	CD-1	CD-2	Final Design Complete	CD-3	D&D Complete	CD-4
FY 2011	07/16/2002	N/A	05/18/2005	07/17/2009	N/A	07/17/2009	N/A	04/30/2013
FY 2012	07/16/2002	N/A	05/18/2005	07/17/2009	N/A	07/17/2009	N/A	04/30/2013
FY 2012 Rep	07/16/2002	N/A	05/18/2005	07/17/2009	N/A	07/17/2009	N/A	3QFY2013
FY 2016	07/16/2002	N/A	05/18/2005	07/17/2009	N/A	07/17/2009	N/A	06/20/2013

Nuclear Facility (NF) Subproject (04-D-125-03)

(fiscal quarter or date)

	CD-0	Conceptual Design Complete	CD-1	CD-2	Final Design Complete	CD-3	D&D Complete	CD-4
FY 2011	07/16/2002	N/A	05/18/2005	TBD	N/A	TBD	N/A	TBD
FY 2012	07/16/2002	N/A	05/18/2005	4QFY2012	N/A	4QFY2012	N/A	TBD
FY 2012 Rep	07/16/2002	N/A	05/18/2005	TBD	TBD	TBD	N/A	TBD
FY 2016	07/16/2002	N/A	05/18/2005	Cancelled	Cancelled	Cancelled	N/A	Cancelled

REI Phase 2 (REI2) Subproject (04-D-125-04)

(fiscal quarter or date)

	CD-0	Conceptual Design Complete	CD-1	CD-2	Final Design Complete	CD-3	D&D Complete	CD-4
FY 2016	07/16/2002	4QFY2015	8/21/2014	3QFY2016	2QFY2016	3QFY2016	N/A	1QFY2020

FY 2016	CD-3A	CD-3B		
	12/18/2014	2QFY2015		

PF-4 Equipment Installation (PEI) Subproject (04-D-125-05)

(fiscal quarter or date)

	CD-0	Conceptual Design Complete	CD-1	CD-2	Final Design Complete	CD-3	D&D Complete	CD-4
FY 2016	07/16/2002	4QFY2015	4QFY2014	3QFY2016	2QFY2016	3QFY2016	4QFY2019	1QFY2024

	CD-3A	CD-3B		
FY 2016	2QFY2015	1QFY2016		

- CD-0** – Approve Mission Need
- CD-1** – Approve Alternative Selection and Cost Range
- CD-2** – Approve Performance Baseline
- CD-3** – Approve Start of Construction
- CD-4** – Approve Start of Operations or Project Closeout
- D&D Start** – Start of Demolition & Decontamination (D&D) work
- D&D Complete** – Completion of D&D work
- CD-3A** – Long Lead for equipment

3. Project Cost History

(dollars in thousands)

	TEC, Design 03-D-103	TEC, Design/ Construction 04-D-125	TEC, Total	OPC, Except D&D	OPC, D&D	OPC, Total	TPC
FY 2004	N/A	N/A	500,000	100,000	N/A	N/A	600,000
FY 2005	N/A	N/A	500,000	100,000	N/A	N/A	600,000
FY 2006	N/A	N/A	750,000	100,000	N/A	N/A	850,000
FY 2007	N/A	N/A	738,097	100,000	N/A	N/A	838,097
FY 2008	65,939	672,158	738,097	100,000	N/A	N/A	838,097
FY 2009	TBD	TBD	TBD	TBD	N/A	TBD	TBD
FY 2010	65,138	TBD	TBD	TBD	N/A	TBD	TBD
FY 2016	63,646	2,295,936	2,359,582	463,721	54,000	517,721	2,877,303

RLUOB Subproject (04-D-125-01)

(dollars in thousands)

	TEC, Design 03-D-103	TEC, Design/ Construction 04-D-125	TEC, Total	OPC, Except D&D	OPC, D&D	OPC, Total	TPC
FY 2011	N/A	159,130	159,130	4,870	N/A	4,870	164,000
FY 2012	N/A	159,130	159,130	4,870	N/A	4,870	164,000
FY 2012 Rep	N/A	159,130	159,130	4,870	N/A	4,870	164,000
FY 2016	N/A	194,130	194,130	4,870	N/A	4,870	199,000

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RLUOB Equipment Installation (REI) Subproject (04-D-125-02)

(dollars in thousands)

	TEC, Design 03-D-103	TEC, Design/ Construction 04-D-125	TEC, Total	OPC, Except D&D	OPC, D&D	OPC, Total	TPC
FY 2011	N/A	152,900	152,900	46,500	N/A	46,500	199,400
FY 2012	N/A	152,900	152,900	46,500	N/A	46,500	199,400
FY 2012 Rep	N/A	152,900	152,900	46,500	N/A	46,500	199,400
FY 2016	N/A	151,963	151,963	44,797	N/A	44,797	196,760

Nuclear Facility (NF) Subproject (04-D-125-03)

(dollars in thousands)

	TEC, Design 03-D-103	TEC, Design/ Construction 04-D-125	TEC, Total	OPC, Except D&D	OPC, D&D	OPC, Total	TPC
FY 2011	65,138	TBD	TBD	TBD	N/A	TBD	TBD
		3,239,862-	3,305,000-	405,000-	N/A	405,000-	3,710,000-
FY 2012	65,138	5,169,862	5,235,000	625,000		625,000	5,860,000
FY 2012 Rep	65,138	TBD	TBD	TBD	N/A	TBD	TBD
FY 2016	63,646	391,324	454,970	40,274	N/A	40,274	495,244

REI Phase 2 (REI2) Subproject (04-D-125-04)

(dollars in thousands)

	TEC, Design 03-D-103	TEC, Design/ Construction 04-D-125	TEC, Total	OPC, Except D&D	OPC, D&D	OPC, Total	TPC
FY 2016	0	540,000	540,000	130,000	N/A	130,000	675,000

PF-4 Equipment Installation (PEI) Subproject (04-D-125-05)

(dollars in thousands)

	TEC, Design 03-D-103	TEC, Design/ Construction 04-D-125	TEC, Total	OPC, Except D&D	OPC, D&D	OPC, Total	TPC
FY 2016	0	1,071,000	1,071,000	240,000	54,000	294,000	1,365,000

4. Project Scope and Justification

Scope

The CMRR Project as originally proposed relocated and consolidated mission critical analytical chemistry (AC), material characterization (MC), actinide research and development (R&D) capabilities, provided special nuclear material (SNM) storage and large vessel handling capabilities. This data sheet provides information related to two newly proposed subprojects to transition AC and MC capabilities into RLUOB and PF-4 to ensure continuity in plutonium support capabilities and enable the cessation of program operations in CMR by the end of calendar year 2019.

The complete list of CMRR line Item Project Sub-projects since inception is:

- **RLUOB Subproject (04-D-125-01):** Construction of a 203,686, gross square foot (gsf) facility to house laboratory space capable of handling radiological quantities of SNM; a 22,071 gsf utility building sized to provide utility services (including chilled and hot water, potable hot/cold water, compressed air, and process gases) for all CMRR facility elements; office space for CMRR workers located outside of perimeter security protection systems; and space for centralized TA-55 training activities. The RLUOB became fully functional and operational after the completion of the equipment installation effort for this facility in the REI phase.

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- **RLUOB Equipment Installation (REI) Subproject (04-D-125-02):** Equipment installation included gloveboxes, hoods, AC/MC instrumentation, security and communication hardware, and final facility tie-ins and operational readiness/turnover activities. RLUOB equipment fabrication, installation, testing, and acceptance physically completed in FY 2012. Staff occupation of the office spaces has occurred and CD-4 has been approved. The facility exceeded its sustainability goal of LEED Silver by achieving LEED Gold in June 2012.
- **Nuclear Facility (NF) Subproject (04-D-125-03):** This subproject is hereby cancelled with the remaining mission need for CMRR to be met by REI2 and PEI.
- **REI Phase 2 (REI2) Subproject (04-D-125-04):** Maximizes the use of RLUOB laboratories by both reconfiguring some existing laboratory space and equipping empty laboratories with AC and MC capabilities. The RLUOB will operate at the increased radiological limit, 38.6 g of Pu-239 equivalent, which enables additional AC and MC operations to move in. New gloveboxes/hoods and equipment will be installed in RLUOB through this subproject. This project makes progress toward ceasing program operations in CMR in 2019. Specific capabilities in REI2 scope include, but are not limited to:
 - Trace Elements Sample Preparation
 - Mass Spectrometry Sample Preparation
 - X-Ray Fluorescence Sample Preparation and Instruments
 - Radiochemistry Counting Laboratory and Sample Preparation
 - Oxide and Metal Sample Distribution
 - Coulometry
 - AC and MC Capabilities for R&D and Troubleshooting
- **PF-4 Equipment Installation (PEI) Subproject (04-D-125-05):** The PEI subproject involves the following: relocation of existing PF-4 processes to create open consolidated space, reusing existing gloveboxes for new processes, decontamination and decommissioning (D&D) of old gloveboxes/equipment in PF-4 to create open laboratory space; and, installation of new gloveboxes/equipment in the created open space. PEI will support the AC and MC capabilities that require the processing of larger amounts of nuclear material. These capabilities support pit production, pit surveillance, plutonium science and other national security programs. The removal work will be executed as site-prep work within this subproject. Specific capabilities in PEI scope include, but are not limited to:
 - Sample Preparation Surface Science
 - Mechanical Testing
 - Physical Properties
 - Small Sample Fabrication and Preparation

Justification

As defined in the most recent revision of the Mission Need Statement (MNS), the mission of the Chemistry and Metallurgy Research Replacement Project is to ensure continuity in enduring analytical chemistry and materials characterization capabilities for NNSA actinide-based missions in support of stockpile stewardship. The AC and MC capabilities provided by this project support pit production, pit surveillance, plutonium science and other national security programs. During development of the plutonium strategy, the joint DOD-CAPE business case analysis (BCA) indicated that optimizing RLUOB (REI2) and repurposing space in PF-4 (PEI) should be started as soon as possible to maintain continuity in AC and MC capabilities.

The project is being conducted in accordance with the project management requirements in DOE Order 413.3B, Program and Project Management for the Acquisition of Capital Assets.

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

5. Financial Schedule

04-D-125-01-03, Prior Subproject (RLUOB/REI/Nuclear Facility)

(dollars in thousands)

	Appropriations	Obligations	Cost
Design (03-D-103-010)			
FY 2005	NA	NA	1,848
FY 2006	NA	NA	19,147
FY 2007	NA	NA	27,213
FY 2008	NA	NA	15,079
FY 2009	NA	NA	-329
FY 2010	NA	NA	44
FY 2011	NA	NA	0
FY 2012	NA	NA	339
FY 2013	NA	NA	188
FY 2014	NA	NA	44
FY 2015	NA	NA	73
Total, Design (03-D-103-010)	NA	NA	63,646
Design (04-D-125)			
FY 2007	NA	NA	3,109
FY 2008	NA	NA	24,713
FY 2009	NA	NA	47,102
FY 2010	NA	NA	62,252
FY 2011	NA	NA	101,924
FY 2012	NA	NA	132,593
FY 2013	NA	NA	15,158
FY 2014	NA	NA	724
Total Design (04-D-125)	NA	NA	387,575
Construction (04-D-125)			
FY 2006	NA	NA	15,933
FY 2007	NA	NA	29,214
FY 2008	NA	NA	50,236
FY 2009	NA	NA	62,288
FY 2010	NA	NA	40,515
FY 2011	NA	NA	82,942
FY 2012	NA	NA	16,306
FY 2013	NA	NA	-5
FY 2014	NA	NA	-68
Total, Construction (04-D-125)	NA	NA	297,361

	Appropriations	Obligations	Cost
TEC (04-D-125)			
FY 2006	NA	NA	15,933
FY 2007	NA	NA	32,323
FY 2008	NA	NA	74,949
FY 2009	NA	NA	109,390
FY 2010	NA	NA	102,767
FY 2011	NA	NA	184,866
FY 2012	NA	NA	148,899
FY 2013	NA	NA	15,153
FY 2014	NA	NA	656
Total, TEC (04-D-125)	NA	NA	684,936
TEC			
FY 2005	NA	NA	1,848
FY 2006	NA	NA	35,080
FY 2007	NA	NA	59,536
FY 2008	NA	NA	90,028
FY 2009	NA	NA	109,061
FY 2010	NA	NA	102,811
FY 2011	NA	NA	184,866
FY 2012	NA	NA	149,238
FY 2013	NA	NA	15,341
FY 2014	NA	NA	700
FY 2015	NA	NA	73
Total, TEC	NA	NA	748,582
Other Project Cost (OPC)			
OPC except D&D			
FY 2002	NA	NA	1,665
FY 2003	NA	NA	10,853
FY 2004	NA	NA	7,702
FY 2005	NA	NA	4,934
FY 2006	NA	NA	4,265
FY 2007	NA	NA	1,196
FY 2008	NA	NA	2,335
FY 2009	NA	NA	9,075
FY 2010	NA	NA	14,666
FY 2011	NA	NA	19,240
FY 2012	NA	NA	9,142
FY 2013	NA	NA	3,665
FY 2014	NA	NA	-17
Total, OPC except D&D	NA	NA	88,721
Other Project Cost (OPC) D&D			
OPC D&D			
FY 2020	NA	NA	NA
FY 2021	NA	NA	NA
Total, OPC D&D	NA	NA	NA

(dollars in thousands)

	Appropriations	Obligations	Cost
OPC Total			
OPC Total			
FY 2002	NA	NA	1,665
FY 2003	NA	NA	10,853
FY 2004	NA	NA	7,702
FY 2005	NA	NA	4,934
FY 2006	NA	NA	4,265
FY 2007	NA	NA	1,196
FY 2008	NA	NA	2,335
FY 2009	NA	NA	9,075
FY 2010	NA	NA	14,666
FY 2011	NA	NA	19,240
FY 2012	NA	NA	9,142
FY 2013	NA	NA	3,665
FY 2014	NA	NA	-17
Total, OPC Total	NA	NA	88,721
Total Project Cost (TPC)			
FY 2002	NA	NA	1,665
FY 2003	NA	NA	10,853
FY 2004	NA	NA	7,702
FY 2005	NA	NA	6,782
FY 2006	NA	NA	39,345
FY 2007	NA	NA	60,732
FY 2008	NA	NA	92,363
FY 2009	NA	NA	118,136
FY 2010	NA	NA	117,477
FY 2011	NA	NA	204,106
FY 2012	NA	NA	158,380
FY 2013	NA	NA	19,006
FY 2014	NA	NA	683
FY 2015	NA	NA	73
Total, TPC	NA	NA	837,303

04-D-125-04, RLUOB Equipment Installation Phase 2

(dollars in thousands)

	Appropriations	Obligations	Cost
Design (04-D-125)			
FY 2015	NA	NA	46,000
FY 2016	NA	NA	50,000
Total Design (04-D-125)	NA	NA	96,000
Construction (04-D-125)			
FY 2014	NA	NA	1,000
FY 2015	NA	NA	12,000
FY 2016	NA	NA	50,000
FY 2017	NA	NA	135,000
FY 2018	NA	NA	123,000
FY 2019	NA	NA	104,000
FY 2020	NA	NA	19,000
Total, Construction (04-D-125)	NA	NA	444,000
TEC (04-D-125)			
FY 2014	NA	NA	1,000
FY 2015	NA	NA	58,000
FY 2016	NA	NA	100,000
FY 2017	NA	NA	135,000
FY 2018	NA	NA	123,000
FY 2019	NA	NA	104,000
FY 2020	NA	NA	19,000
Total, TEC (04-D-125)	NA	NA	540,000
TEC			
FY 2014	NA	NA	1,000
FY 2015	NA	NA	58,000
FY 2016	NA	NA	100,000
FY 2017	NA	NA	135,000
FY 2018	NA	NA	123,000
FY 2019	NA	NA	104,000
FY 2020	NA	NA	19,000
Total, TEC	NA	NA	540,000
Other Project Cost (OPC)			
OPC except D&D			
FY 2014	NA	NA	4,408
FY 2015	NA	NA	19,592
FY 2016	NA	NA	12,000
FY 2017	NA	NA	10,000
FY 2018	NA	NA	12,000
FY 2019	NA	NA	40,000
FY 2020	NA	NA	37,000
Total, OPC except D&D	NA	NA	135,000

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	Appropriations	Obligations	Cost
Other Project Cost (OPC) D&D			
OPC D&D			
FY 2020	NA	NA	NA
FY 2021	NA	NA	NA
Total, OPC D&D	NA	NA	NA
OPC Total			
OPC Total			
FY 2014	NA	NA	4,408
FY 2015	NA	NA	19,592
FY 2016	NA	NA	12,000
FY 2017	NA	NA	10,000
FY 2018	NA	NA	12,000
FY 2019	NA	NA	40,000
Total, OPC Total	NA	NA	98,000
Total Project Cost (TPC)			
FY 2014	NA	NA	5,408
FY 2015	NA	NA	77,592
FY 2016	NA	NA	112,000
FY 2017	NA	NA	145,000
FY 2018	NA	NA	135,000
FY 2019	NA	NA	144,000
FY 2020	NA	NA	19,000
Total, TPC	NA	NA	638,000

04-D-125-05, PF-4 Equipment Installation

(dollars in thousands)

	Appropriations	Obligations	Cost
Design (04-D-125)			
FY 2015	NA	NA	15,000
FY 2016	NA	NA	18,000
FY 2017	NA	NA	10,000
FY 2018	NA	NA	25,000
FY 2019	NA	NA	57,000
Total Design (04-D-125)	NA	NA	125,000
Construction (04-D-125)			
FY 2014	NA	NA	1,000
FY 2015	NA	NA	12,000
FY 2016	NA	NA	28,000
FY 2017	NA	NA	22,000
FY 2018	NA	NA	13,000
FY 2019	NA	NA	5,000
FY 2020	NA	NA	144,000
FY 2021	NA	NA	210,000
FY 2022	NA	NA	253,000
FY 2023	NA	NA	244,000
FY 2024	NA	NA	14,000
Total, Construction (04-D-125)	NA	NA	946,000
TEC (04-D-125)			
FY 2014	NA	NA	1,000
FY 2015	NA	NA	27,000
FY 2016	NA	NA	46,000
FY 2017	NA	NA	32,000
FY 2018	NA	NA	38,000
FY 2019	NA	NA	62,000
FY 2020	NA	NA	144,000
FY 2021	NA	NA	210,000
FY 2022	NA	NA	253,000
FY 2023	NA	NA	244,000
FY 2024	NA	NA	14,000
Total, TEC (04-D-125)	NA	NA	1,071,000
TEC			
FY 2014	NA	NA	1,000
FY 2015	NA	NA	27,000
FY 2016	NA	NA	46,000
FY 2017	NA	NA	32,000
FY 2018	NA	NA	38,000
FY 2019	NA	NA	62,000
FY 2020	NA	NA	144,000
FY 2021	NA	NA	210,000
FY 2022	NA	NA	253,000
FY 2023	NA	NA	244,000
FY 2024	NA	NA	14,000
Total, TEC	NA	NA	1,071,000

**Weapons Activities/RTBF Construction/
04-D-125, CMR Building Replacement
Project, LANL**

FY 2016 Congressional Budget

(dollars in thousands)

	Appropriations	Obligations	Cost
Other Project Cost (OPC)			
OPC except D&D			
FY 2014	NA	NA	3,896
FY 2015	NA	NA	5,104
FY 2016	NA	NA	1,000
FY 2017	NA	NA	5,000
FY 2018	NA	NA	8,000
FY 2019	NA	NA	10,000
FY 2020	NA	NA	10,000
FY 2021	NA	NA	55,000
FY 2022	NA	NA	41,000
FY 2023	NA	NA	40,000
FY 2024	NA	NA	61,000
Total, OPC except D&D	NA	NA	240,000
Other Project Cost (OPC) D&D			
OPC D&D			
FY 2020	NA	NA	30,000
FY 2021	NA	NA	24,000
Total, OPC D&D	NA	NA	54,000
OPC Total			
OPC Total			
FY 2014	NA	NA	3,896
FY 2015	NA	NA	5,104
FY 2016	NA	NA	1,000
FY 2017	NA	NA	5,000
FY 2018	NA	NA	8,000
FY 2019	NA	NA	10,000
FY 2020	NA	NA	40,000
FY 2021	NA	NA	79,000
FY 2022	NA	NA	41,000
FY 2023	NA	NA	40,000
FY 2024	NA	NA	61,000
Total, OPC Total	NA	NA	294,000
Total Project Cost (TPC)			
FY 2014	NA	NA	4,896
FY 2015	NA	NA	32,104
FY 2016	NA	NA	47,000
FY 2017	NA	NA	37,000
FY 2018	NA	NA	46,000
FY 2019	NA	NA	72,000
FY 2020	NA	NA	184,000
FY 2021	NA	NA	289,000
FY 2022	NA	NA	294,000
FY 2023	NA	NA	284,000
FY 2024	NA	NA	75,000
Total, TPC	NA	NA	1,365,000

**Weapons Activities/RTBF Construction/
04-D-125, CMR Building Replacement
Project, LANL**

FY 2016 Congressional Budget

Total Project

(dollars in thousands)

	Appropriations	Obligations	Cost
Design (03-D-103-010)			
FY 2004	9,500	0	0
FY 2005	13,567	23,067	1,848
FY 2006	27,910	27,910	19,147
FY 2007	12,669	14,161	27,213
FY 2008	0	0	15,079
FY 2009	0	0	-329
FY 2010	0	0	44
FY 2011	0	0	0
FY 2012	0	-1,492	339
FY 2013			188
FY 2014			44
FY 2015			73
Total, Design (03-D-103-010)	63,646	63,646	63,646
Design (04-D-125)			
FY 2007	NA	NA	3,109
FY 2008	NA	NA	24,713
FY 2009	NA	NA	47,102
FY 2010	NA	NA	62,252
FY 2011	NA	NA	101,924
FY 2012	NA	NA	132,593
FY 2013	NA	NA	15,158
FY 2014	NA	NA	724
FY 2015	NA	NA	61,000
FY 2016	NA	NA	68,000
FY 2017	NA	NA	10,000
FY 2018	NA	NA	25,000
FY 2019	NA	NA	57,000
Total Design (04-D-125)	NA	NA	608,575
Construction (04-D-125)			
FY 2006	NA	NA	15,933
FY 2007	NA	NA	29,214
FY 2008	NA	NA	50,236
FY 2009	NA	NA	62,288
FY 2010	NA	NA	40,515
FY 2011	NA	NA	82,942
FY 2012	NA	NA	16,306
FY 2013	NA	NA	-5
FY 2014	NA	NA	1,932
FY 2015	NA	NA	24,000
FY 2016	NA	NA	78,000

**Weapons Activities/RTBF Construction/
04-D-125, CMR Building Replacement
Project, LANL**

FY 2016 Congressional Budget

(dollars in thousands)

	Appropriations	Obligations	Cost
FY 2017	NA	NA	157,000
FY 2018	NA	NA	136,000
FY 2019	NA	NA	109,000
FY 2020	NA	NA	163,000
FY 2021	NA	NA	210,000
FY 2022	NA	NA	253,000
FY 2023	NA	NA	244,000
FY 2024	NA	NA	14,000
Total, Construction (04-D-125)	NA	NA	1,687,361
TEC (04-D-125)			
FY 2004	9,941	0	0
FY 2005	39,684	49,625	0
FY 2006	54,450	54,450	15,933
FY 2007	53,422	53,422	32,323
FY 2008	74,141	74,141	74,949
FY 2009	97,194	97,194	109,390
FY 2010	97,000	97,000	102,767
FY 2011 ^a	205,699	214,550	184,866
FY 2012	NA	-8,851	148,899
FY 2013	NA	NA	15,153
FY 2014	NA	NA	2,656
FY 2015	NA	NA	85,000
FY 2016	NA	NA	146,000
FY 2017	NA	NA	167,000
FY 2018	NA	NA	161,000
FY 2019	NA	NA	166,000
FY 2020	NA	NA	163,000
FY 2021	NA	NA	210,000
FY 2022	NA	NA	253,000
FY 2023	NA	NA	244,000
FY 2024	NA	NA	14,000
Total, TEC (04-D-125)	NA	NA	2,295,936

^a FY 2011 Appropriation was 214,550 and was reduced by 8,851 for a Prior Year Balance Rescission in FY 2014.

(dollars in thousands)

	Appropriations	Obligations	Cost
TEC			
FY 2004	19,441	0	0
FY 2005	53,251	72,692	1,848
FY 2006	82,360	82,360	35,080
FY 2007	66,091	67,583	59,536
FY 2008	74,141	74,141	90,028
FY 2009	97,194	97,194	109,061
FY 2010	97,000	97,000	102,811
FY 2011	205,699	214,550	184,866
FY 2012	NA	-10,343	149,238
FY 2013	NA	NA	15,341
FY 2014	NA	NA	2,700
FY 2015	NA	NA	85,073
FY 2016	NA	NA	146,000
FY 2017	NA	NA	167,000
FY 2018	NA	NA	161,000
FY 2019	NA	NA	166,000
FY 2020	NA	NA	163,000
FY 2021	NA	NA	210,000
FY 2022	NA	NA	253,000
FY 2023	NA	NA	244,000
FY 2024	NA	NA	14,000
Total, TEC	NA	NA	2,359,582

Other Project Cost (OPC)

OPC except D&D

FY 2002	NA	NA	1,665
FY 2003	NA	NA	10,853
FY 2004	NA	NA	7,702
FY 2005	NA	NA	4,934
FY 2006	NA	NA	4,265
FY 2007	NA	NA	1,196
FY 2008	NA	NA	2,335
FY 2009	NA	NA	9,075
FY 2010	NA	NA	14,666
FY 2011	NA	NA	19,240
FY 2012	NA	NA	9,142
FY 2013	NA	NA	3,665
FY 2014	NA	NA	8,287
FY 2015	NA	NA	24,696
FY 2016	NA	NA	13,000
FY 2017	NA	NA	15,000

(dollars in thousands)

	Appropriations	Obligations	Cost
FY 2018	NA	NA	20,000
FY 2019	NA	NA	50,000
FY 2020	NA	NA	47,000
FY 2021	NA	NA	55,000
FY 2022	NA	NA	41,000
FY 2023	NA	NA	40,000
FY 2024	NA	NA	61,000
Total, OPC except D&D	NA	NA	463,721
Other Project Cost (OPC) D&D			
OPC D&D			
FY 2020	NA	NA	30,000
FY 2021	NA	NA	24,000
Total, OPC D&D	NA	NA	54,000
OPC Total			
OPC Total			
FY 2002	1,665	1,665	1,665
FY 2003	12,177	12,177	10,853
FY 2004	7,214	7,214	7,702
FY 2005	7,164	7,164	4,934
FY 2006	1,209	1,209	4,265
FY 2007	4,187	4,187	1,196
FY 2008	0	0	2,335
FY 2009	9,000	9,000	9,075
FY 2010	14,403	14,403	14,666
FY 2011	30,668	30,668	19,240
FY 2012	17,000	0	9,142
FY 2013	0	0	3,665
FY 2014	NA	17,000	8,287
FY 2015	NA	NA	24,696
FY 2016	NA	NA	13,000
FY 2017	NA	NA	15,000
FY 2018	NA	NA	20,000
FY 2019	NA	NA	50,000
FY 2020	NA	NA	77,000
FY 2021	NA	NA	79,000
FY 2022	NA	NA	41,000
FY 2023	NA	NA	40,000
FY 2024	NA	NA	61,000
Total, OPC Total	NA	NA	517,721

(dollars in thousands)

	Appropriations	Obligations	Cost
Total Project Cost (TPC)			
FY 2002	1,665	1,665	1,665
FY 2003	12,177	12,177	10,853
FY 2004	26,655	7,214	7,702
FY 2005	60,415	79,856	6,782
FY 2006	83,569	83,569	39,345
FY 2007	70,278	71,770	60,732
FY 2008	74,141	74,141	92,363
FY 2009	106,194	106,194	118,136
FY 2010	111,403	111,403	117,477
FY 2011	236,367	245,218	204,106
FY 2012 ^{ab}	164,919	67,876	158,380
FY 2013	0	-7,000	19,006
FY 2014	0	93,212	10,987
FY 2015	35,700	36,188	109,769
FY 2016	155,610	155,610	159,000
FY 2017	159,615	159,615	182,000
FY 2018	180,900	180,900	181,000
FY 2019	216,095	216,095	216,000
FY 2020	239,600	239,600	240,000
FY 2021	289,000	289,000	289,000
FY 2022	294,000	294,000	294,000
FY 2023	284,000	284,000	284,000
FY 2024	75,000	75,000	75,000
Total, TPC	2,877,303	2,877,303	2,877,303

^a Includes \$17,000 for OPCs from the \$43,300 reprogrammed from 04-D-125 to RTBF Ops of Facilities.

^b Original appropriation was \$200,000. This was reduced by \$43,300 associated with the Plutonium Strategy reprogramming and further reduced \$7,000 associated with the FY 2014 prior year balance rescission.

6. Details of Project Cost Estimate

04-D-125-01, RLUOB

(dollars in thousands)

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design			
Design	0	0	0
Contingency	0	0	0
Total, Design	0	0	0
Construction			
Site Work	0	0	0
Long-lead Equipment	0	0	0
Construction	0	0	0
Contingency	0	0	0
Total, Construction	194,130	0	0
Total, TEC	194,130	0	0
Contingency, TEC	0	0	0
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Planning	0	0	0
Conceptual Design	0	0	0
Contingency	0	0	0
Total, OPC except D&D	4,870	0	0
D&D			
D&D	0	0	0
Contingency	0	0	0
Total, D&D	0	0	0
Total, OPC	4,870	0	0
Contingency, OPC	0	0	0
Total, TPC	199,000	0	0
Total, Contingency	0	0	0

(dollars in thousands)

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design			
Design	0	0	0
Contingency	0	0	0
Total, Design	13,498	0	0
Construction			
Site Work	0	0	0
Long-lead Equipment Construction	0	0	0
Contingency	0	0	0
Total, Construction	138,465	0	0
Total, TEC	151,963	0	0
Contingency, TEC	0	0	0
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Planning	0	0	0
Conceptual Design	0	0	0
Contingency	0	0	0
Total, OPC except D&D	0	0	0
D&D			
D&D	0	0	0
Contingency	0	0	0
Total, D&D	0	0	0
Total, OPC	44,797	0	0
Contingency, OPC	0	0	0
Total, TPC	196,760	0	0
Total, Contingency	0	0	0

04-D-125-03, Nuclear Facility

(dollars in thousands)

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design			
Design	N/A	TBD	N/A
Contingency	N/A	TBD	N/A
Total, Design	N/A	TBD	N/A
Construction			
Site Work	N/A	TBD	N/A
Long-lead Equipment	N/A	TBD	N/A
Construction	N/A	TBD	N/A
Contingency	N/A	TBD	N/A
Total, Construction	N/A	TBD	N/A
Total, TEC	N/A	TBD	N/A
Contingency, TEC	N/A	TBD	N/A
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Planning	N/A	TBD	N/A
Conceptual Design	N/A	TBD	N/A
Contingency	N/A	TBD	N/A
Total, OPC except D&D	N/A	TBD	N/A
D&D			
D&D	N/A	TBD	N/A
Contingency	N/A	TBD	N/A
Total, D&D	N/A	TBD	N/A
Total, OPC	N/A	TBD	N/A
Contingency, OPC	N/A	TBD	N/A
Total, TPC	3,710,000-		
	N/A	5,860,000	N/A
Total, Contingency	N/A	TBD	N/A

04-D-125-04, RLUOB Equipment Installation Phase 2

(dollars in thousands)

Current Total Estimate	Previous Total Estimate	Original Validated Baseline
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Total Estimated Cost (TEC)

Design

Design		N/A	N/A
Contingency		N/A	N/A
Total, Design	96,000	N/A	N/A

Construction

Site Work		N/A	N/A
Long-lead Equipment		N/A	N/A
Construction		N/A	N/A
Contingency		N/A	N/A
Total, Construction	444,000	N/A	N/A

Total, TEC	540,000	N/A	N/A
Contingency, TEC		N/A	N/A

Other Project Cost (OPC)

OPC except D&D

Conceptual Planning		N/A	N/A
Conceptual Design		N/A	N/A
Contingency		N/A	N/A
Total, OPC except D&D	135,000	N/A	N/A

D&D

D&D	0	N/A	N/A
Contingency	0	N/A	N/A
Total, D&D	0	N/A	N/A

Total, OPC	135,000	N/A	N/A
Contingency, OPC		N/A	N/A

Total, TPC	675,000	N/A	N/A
Total, Contingency		N/A	N/A

04-D-125-05, PF-4 Equipment Installation

(dollars in thousands)

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design			
Design		N/A	N/A
Contingency		N/A	N/A
Total, Design	125,000	N/A	N/A
Construction			
Site Work		N/A	N/A
Long-lead Equipment Construction		N/A	N/A
Contingency		N/A	N/A
Total, Construction	946,000	N/A	N/A
Total, TEC	1,071,000	N/A	N/A
Contingency, TEC		N/A	N/A
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Planning		N/A	N/A
Conceptual Design		N/A	N/A
Contingency		N/A	N/A
Total, OPC except D&D	240,000	N/A	N/A
D&D			
D&D		N/A	N/A
Contingency		N/A	N/A
Total, D&D	54,000	N/A	N/A
Total, OPC	294,000	N/A	N/A
Contingency, OPC		N/A	N/A
Total, TPC	1,365,000	N/A	N/A
Total, Contingency		N/A	N/A

Total Project

(dollars in thousands)

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design			
Design		TBD	N/A
Contingency		TBD	N/A
Total, Design	672,221	TBD	N/A
Construction			
Site Work		TBD	N/A
Long-lead Equipment		TBD	N/A
Construction		TBD	N/A
Contingency		TBD	N/A
Total, Construction	1,687,361	TBD	N/A
Total, TEC	2,359,582	TBD	N/A
Contingency, TEC		TBD	N/A
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Planning		TBD	N/A
Conceptual Design		TBD	N/A
Contingency		TBD	N/A
Total, OPC except D&D	463,721	TBD	N/A
D&D			
D&D		N/A	N/A
Contingency		N/A	N/A
Total, D&D	54,000	N/A	N/A
Total, OPC	517,721	TBD	N/A
Contingency, OPC		TBD	N/A
Total, TPC	2,877,303	3,710,000 –	N/A
		5,860,000	
Total, Contingency		N/A	N/A

7. Schedule of Appropriation Requests

(dollars in thousands)

Request		Prior Years	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	Outyears	Total
FY 2009	TEC	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
	OPC	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
	TPC	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
FY 2010	TEC	670,331	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
	OPC	86,814	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
	TPC	757,145	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
FY 2011	TEC	1,556,330	300,000	0	0	0	0	0	1,532,769	3,389,099
	OPC	100,851	4,550	0	0	0	0	0	300,500	405,901
	TPC	1,657,181	304,550	0	0	0	0	0	1,833,269	3,795,000
FY 2012	TEC	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
	OPC	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
	TPC	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
FY 2016	TEC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	OPC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	TPC	947,783	35,700	155,610	159,615	180,900	216,095	239,600	942,000	2,877,303

8. Related Operations and Maintenance Funding Requirements

Start of Operation or Beneficial Occupancy (fiscal quarter or date)	4QFY 2020
Expected Useful Life (number of years)	50
Expected Future Start of D&D of this capital asset (fiscal quarter)	4QFY 2070

(Related Funding requirements)

(dollars in thousands)

	Annual Costs		Life Cycle Costs	
	Current Total Estimate	Previous Total Estimate	Current Total Estimate	Previous Total Estimate
Operations	0	30,473	0	1,523,625
Utilities	0	33,583	0	1,679,126
<u>Maintenance & Repair</u>	<u>0</u>	<u>60,945</u>	<u>0</u>	<u>3,397,250^a</u>
Total	0	125,000	0	6,600,001

9. D&D Information

For RLUOB and REI, the new area being constructed by these subprojects replaces existing facilities; however, the costs of D&D of the facilities that are being replaced are not included in the costs of this construction project.

For REI2 and PEI, there is no new area being constructed in these subprojects.

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 million - \$350 million (un-escalated FY 2004 dollars) with an associated schedule estimate range of 4-5 years. This information was presented as part

^a Includes 350,000 listed under "Recapitalization" in the FY 2012 Reprogramming data sheet.

of CMRR CD-1 per Secretarial direction issued at CD-0. The deferral of CMRR-NF construction will not impact decisions to cease operations in CMR; NNSA is committed to ceasing programmatic operations in CMR by December 2019.

During the 3rd Quarter of FY 2005, the D&D of the existing CMR facility received CD-0 as a separate project in conjunction with CMRR CD-1 approval. Current Future Years Nuclear Security Program (FYNSP) funding profiles do not include the funding for the D&D of the CMR Facility. CMR Facility D&D is not part of the CMRR project scope. Some removal of contaminated equipment in PF-4 will occur using project funds; these totals are reflected in the D&D totals.

The CMR D&D commitment is reflected in this PDS for completeness. However, as planning for this D&D activity matures, NNSA may elect to enable this effort as a separate project or execute it as an element of a wider project or program for a portfolio of nuclear security enterprise disposition activities.

Square footage associated with construction of the RLUOB and the Central Utility Building will be offset by LANL “banked excess” 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 RLUOB) at LANL and planned excess facility reductions, LANL is projecting it will have banked adequate square footage before CMR is demolished.

	Square Feet
New area being constructed by this project at Los Alamos National Laboratory.....	225,757
Area of D&D in this project at Los Alamos National Laboratory	0
Area at Los Alamos National Laboratory to be transferred, sold, and/or D&D outside the project including area previously “banked”	225,757
Area of D&D in this project at other sites	0
Area at other sites to be transferred, sold, and/or D&D outside the project including area previously “banked”	0
Total area eliminated	0

Site location, building name or numbers, and square footages of existing facilities to be replaced:

Los Alamos National Laboratory; Bldg 03-29; CMR Facility 550,000 sqft

10. Acquisition Approach

The CMRR Acquisition Strategy is based on procurement strategies specific for each major component of the CMRR project in order to mitigate overall technical and schedule risk. The RLUOB was implemented via LANL-issued design-build subcontract based on performance specifications developed during CMRR Conceptual Design. The REI subproject was implemented via LANL-issued final design-bid build construction contracts. The REI2 subproject will be executed via LANL-issued final design-bid-build construction contracts. The PEI subproject will be executed via LANL-issued final design, and the construction will be self-performed in the PF-4. Selected non-nuclear will be executed via the US Army Corps of Engineers. The performance baseline will be established upon completion of 90% design maturity to allow development of credible cost estimates in accordance with DOE Order 413.3B and NNSA policy.