

Data request for CMRR SEIS: CMRR NF Deep Option - DRAFT

	Data Requested	Build the New Larger Facility, excavating undesirable geologic layer
1.0	<b>Construction Project Details</b>	
1.1	Period of construction	9 years
1.2	Building footprint	342' × 304'
1.3	Building Size	407,600 gross ft <sup>2</sup> (344,100 net ft <sup>2</sup> )
1.4	Elevation / building height above grade (west side)	NW corner: 18ft; Centerline west: 7 ft; Centerline north: 16 ft; NE corner: 53 ft; Centerline east: 42 ft; centerline S: 17 ft. Total building height is 116 ft, excluding elevator cupola roofs. Stated elevations exclude cupola roofs. Roof height of cupolas is TBD.
1.5	Building depth below grade (west side)	75 ft to bottom of basemat (7,227 ft above msl)
1.6	Elevation of RLUOB (for comparison w/ NF)	7,447 ft to top of atrium; base elevation is 7,269 ft; total building height is 178 ft
1.7	Excavation Depth	110' to 140', nominal depth 130'
1.8	Tunnels (2)	No change since EIS. 1,200' long, 50' depth, 10 & 12 ft wide
1.9	Concrete batch plants (3)	3 electric-powered (1 in TA55/48 [150 yd <sup>3</sup> /hr capacity] and 2 in TA-63 [300 yd <sup>3</sup> /hr capacity each])
1.10	Shift operations	10 hrs/day, 4 days a week; some second shift work
2.0	<b>Land Use and Visual Resources</b>	
2.1	<p>Number of acres that will be impacted in any way by the proposed construction by TA (TA-5, TA-36, TA-46, TA-48, TA-51, TA-52, TA-54, TA-55, TA-63, TA-72). Please indicate if land will be permanently disturbed or temporarily during the construction and then restored to its original status). All are temporary unless indicated otherwise.</p> <ul style="list-style-type: none"> <li>- Building sites (permanent – TA-55)</li> <li>- Lay-down areas</li> <li>- Batch plants</li> <li>- Parking (permanent – TA-50, other temporary)</li> <li>- Spoils areas</li> <li>- Access roads</li> <li>- Road realignment (permanent – TA-55)</li> <li>- Substation (permanent – TA-50)</li> </ul>	<p><b>Permanent Changes:</b>  <u>Completed</u>                      RLUOB plot – 4 acres                      CMRR NF building plot – 4.75 acres                      Parking Lots (permanent) - 13 acres in TA-50  <b>Total ≈21.75 acres (4 + 4.75+13)</b></p> <p><u>Additional CMRR-NF Project related</u>                      Substation – 1.4 acres in TA-50                      Storm water detention pond – 0.5 acres in TA-50                      Storm water detention pond – 1 acre in TA-64                      Storm water detention pond –1 acre in TA-63                      Pajarito Rd realignment – 2 acres of undeveloped land + 1.4 acres of developed land in TA-55  <b>Total ≈ 7.3 acres (1.4+0.5+1+1+2+1.4)</b></p>

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2.1 continued		<p><b>Temporary Changes</b>  <i>Long-term Temporary Changes:</i>                      Parking lot (temporary) – 13-15 acres in TA-72                      Spoils storage areas – need up to 30 acres for excavation to a nominal 130 ft depth. Area will come from one or a combination of the following:</p> <ul style="list-style-type: none"> <li>– TA-5/52: 19.1 acres along Puye Road (22.6 minus 3.5 acres for the road)</li> <li>– TA-36: 39.1 acres (14.4 acres along Pajarito Road; 24.7 acres on mesa top)</li> <li>– TA-51: 9.1 acres</li> <li>– TA-54: 18.6 acres</li> </ul> <p><i>Short-term Temporary Changes:</i>  <u>Laydown areas</u> –</p> <ul style="list-style-type: none"> <li>– 40 acres in TA-63/46 (includes construction trailers, short access and haul roads, temporary parking, warehouse, and concrete batch plant)</li> <li>– 20 acres in TA-48/55 (includes bus parking, construction trailers, short access and haul roads, construction lay-down areas, concrete batch plant, and areas to support the concrete plants)</li> </ul> <p><u>Concrete batch plants</u> –</p> <ul style="list-style-type: none"> <li>– 15 acres in TA-63 (included in 40 acre area discussed above)</li> <li>– 5 acres in TA-48/55 (included in the 20 acres discussed above)</li> </ul> <p><u>Temporary electric power upgrade along access roads</u> – 9.1 acres; 2 acres of undeveloped land may be disturbed ☑ (from TA-5 ETA substation thru TA-52 to TA-63)</p> <p><u>Construction trailers</u> – 1.3 acres in TA-50 that will become part of permanent parking lots (included in Permanent Changes)</p> <p><u>Guard posts</u>                      (3) hardened (1) mobile – included in TA-55 developed area near the PIDADS; remain during construction</p> <p><b>Total</b> ≈ 114 acres (15+30+40+20+9.1)</p>

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2.2	Current status of the land that will be impacted by TA (e.g., developed, disturbed, undisturbed)	TA-5: Disturbed/Developed TA-36: Undisturbed TA-46: Undisturbed/Disturbed TA-48: Disturbed/Developed TA-51: Disturbed (power line) TA-52: Disturbed/Developed TA-54: Disturbed/Developed TA-55: Disturbed/Developed TA-63: Disturbed/Developed/Undisturbed TA-72: Undisturbed
<b>3.0</b>	<b>Site Infrastructure</b>	
3.1	Projected construction requirements for: <ul style="list-style-type: none"> <li>- Electricity (MWhrs/yr)</li> <li>- Peak Load (MW)</li> <li>- Water (gal/yr)</li> <li>- Natural Gas (yd<sup>3</sup>)</li> </ul>	31,000 MWhrs/yr for 9 years 12 MW 4.6 million gal/yr for 9 years None
3.2	Description of any new facilities that will be required to support site infrastructure (e.g. new substations).	Temporary power provided from substation in TA-5. Permanent power to be provided via a new substation to be built in TA-50 or through an independent feed to TA-55 from the TA-3 Power Plant
<b>4.0</b>	<b>Air Quality and Noise</b>	
4.1	Provide data on construction equipment and concrete batch plant operations as requested by SAIC on 11/4/10.	Construction equipment usage provided in separate response; batch plants are electric-powered.
4.2	Provide estimate of radiological emissions by isotope, if any, that may result during construction and the location of any potential releases.	No radiological emissions are expected during construction.
4.3	Provide results of any noise studies that may have been done related to the planned construction.	None have been conducted
4.4	Will any blasting be required to support construction?	No
<b>5.0</b>	<b>Geology and Soils</b>	
5.1	Provide data on the amount of aggregate, sand, fill, etc. that will be needed to support construction.	(All units are tons) Cement: 69,000 (69,400) Fly Ash: 37,000 (37,400) Coarse Agg 2: 237,000 (237,600) Coarse Agg 3: 76,000 (76,200) Fine Agg 1: 320,000 (316,800) Fill – 153,000 yd <sup>3</sup> (est. volume of soil from excavation that would be used in preparing (e.g., leveling) construction support areas)

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5.2	<p>Is there a plan for where aggregate and other soils needed to support the construction project will come from?</p> <p>What proportion, if any, may come from the existing borrow pit at LANL (TA-61)?</p>	<p>Material sourcing will be the responsibility of the subcontractor; subcontracts have not been issued (see 13.1). Sourcing from the TA-61 borrow pit is not anticipated at this time.</p>
5.3	Size of excavation	<p>The dimensions of the excavation will be approximately 38 ft beyond the building footprint on all sides (to accommodate equipment, etc.), to a depth of 75 ft. From 75 ft to 130 ft, the dimensions will be the exact size of the foundation (low slump concrete fill). Amount remaining to be excavated: nominal 100 ft.</p>
5.4	Amount of material to be excavated.	<p>Building –  <u>Total excavation</u> (including work completed as of December 2010)            Depth (nominal 130 ft)</p> <p><u>Remaining excavation</u>            Depth (nominal 100 ft)</p> <p style="padding-left: 40px;">Top 28 ft (based on shallow option): = 236,000 yd<sup>3</sup>            Next 17 ft × [342 + (2 × 35)]' × [304 + (2 × 35)]' =            17 × 412 × 374 = 2.6 M ft<sup>3</sup> = 97,000 yd<sup>3</sup>            Next 55 ft × 342' × 304' = 5.7 M ft<sup>3</sup> = 212,000 yd<sup>3</sup>  <b>Total (bank or in-place volume) = 545,000 yd<sup>3</sup></b></p> <p><u>Tunnels</u> – excavated volume is included in the estimate above  <b>CMRR-NF to RLUOB:</b> 4000 gross sq ft; 3300 net sq ft</p> <p><b>CMRR-NF to PF-4:</b> 10,100 gross sq ft; 8600 net sq ft            the tunnel has two legs</p> <p>Both tunnels are 50 ft deep (at their foundations)</p>
5.5	Excavation method	<p>What method (i.e., what mix of equipment) will be used for excavation?  <u>TBD by subcontractor.</u></p>
5.6	Backfilling	<p>Are the pilings to be removed prior to placing the lean grout?            No. There are pilings, but they will not be removed.</p>
<b>6.0</b>	<b>Surface and Groundwater Quality</b>	
6.1	Surface water – are there any plans for storm water runoff and erosion that have been developed for the construction project?	<p>Storm water flow and erosion during construction activities will be managed and minimized through use of Stormwater Pollution Prevention Plans implemented for each of the proposed activities.</p>

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6.2	Groundwater	No onsite discharges are planned and spill prevention, countermeasures, and control procedures will be employed to minimize potential on site releases that could affect groundwater.
<b>7.0</b>	<b>Ecological Resources</b>	
7.1	Provide information on loss of habitat by TA for areas affected by the construction project including lay-down and spoils areas.	<p><u>TA-5/TA-52</u>: None (PR-ID 10P-0192) Biological Assessment currently in consultation with USFWS.</p> <p><u>TA-36</u>: (PR-ID 10P-0140): Biological Assessment currently in consultation with USFWS. Cultural resource issues: the sites will be marked by LANL SMEs for avoidance from all ground-disturbing activities and use. LANL Cultural resources SME to be present during all clearing, grubbing, and grading activities in the affected areas.</p> <p><u>TA-46</u>: Yes (PR-ID 10P-0067) Per SME comments: These actions are covered under the "Amended Biological Assessment (Cons. # 2-22-03-1-0302): The Potential Change in Project Effects of the Chemistry and Metallurgy Research Facility Replacement Project on Federally Listed Threatened and Endangered Species, Los Alamos National Laboratory, Los Alamos, New Mexico"</p> <p><u>TA-48/TA-55</u>: Yes. Per SME comments: These actions are covered under the "Amended Biological Assessment (Cons. # 2-22-03-1-0302): The Potential Change in Project Effects of the Chemistry and Metallurgy Research Facility Replacement Project on Federally Listed Threatened and Endangered Species, Los Alamos National Laboratory, Los Alamos, New Mexico"</p>

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7.1 (cont.)		<p><u>TA-50</u>: Yes.</p> <p><i>Office Trailers</i> – (PR-ID 08P-0141 V1) Per SME comments (office trailers): These actions are covered under the "Amended Biological Assessment (Cons. # 2-22-03-1-0302): The Potential Change in Project Effects of the Chemistry and Metallurgy Research Facility Replacement Project on Federally Listed Threatened and Endangered Species, Los Alamos National Laboratory, Los Alamos, New Mexico";</p> <p><i>Parking Lot</i> – (PR-ID 10P-0036) Per SME comments, these actions are covered under the CMRR BA</p> <p><i>Electrical Substation</i> – (PR-ID 05P-0205 V1) These actions are covered under the "Amended Biological Assessment (Cons. # 2-22-03-1-0302): The Potential Change in Project Effects of the Chemistry and Metallurgy Research Facility Replacement Project on Federally Listed Threatened and Endangered Species, Los Alamos National Laboratory, Los Alamos, New Mexico"</p> <p><u>TA-51</u>: Same as for TA-36.</p> <p><u>TA-54</u>: Same as for TA-36.</p> <p><u>TA-63</u>: Yes. These actions are covered under the "Amended Biological Assessment (Cons. # 2-22-03-1-0302): The Potential Change in Project Effects of the Chemistry and Metallurgy Research Facility Replacement Project on Federally Listed Threatened and Endangered Species, Los Alamos National Laboratory, Los Alamos, New Mexico".</p> <p><u>TA-72</u>: (PR-ID 10P 139 V1) This area to be re-surveyed for bio and cultural concerns. Included in Biological Assessment currently in consultation with USFWS.</p>

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7.2	Identify if any areas that will be affected are potential Mexican spotted owl habitat	<p><u>TA-5/TA-52</u>: Yes (PR-ID 10P-0192) Included in Biological Assessment currently in consultation with USFWS.</p> <p><u>TA-36</u>: No (PR-ID 10P-0140) Included in Biological Assessment currently in consultation with USFWS.</p> <p><u>TA-46</u>: Yes These actions are covered under the "Amended Biological Assessment (Cons. # 2-22-03-I-0302): The Potential Change in Project Effects of the Chemistry and Metallurgy Research Facility Replacement Project on Federally Listed Threatened and Endangered Species, Los Alamos National Laboratory, Los Alamos, New Mexico".</p> <p><u>TA-48/TA-55</u>: Yes. Per SME comments: These actions are covered under the "Amended Biological Assessment (Cons. # 2-22-03-I-0302): The Potential Change in Project Effects of the Chemistry and Metallurgy Research Facility Replacement Project on Federally Listed Threatened and Endangered Species, Los Alamos National Laboratory, Los Alamos, New Mexico"</p> <p>TA-50: Yes.</p> <p><i>Office Trailers</i> - Per SME comments: These actions are covered under the "Amended Biological Assessment (Cons. # 2-22-03-I-0302): The Potential Change in Project Effects of the Chemistry and Metallurgy Research Facility Replacement Project on Federally Listed Threatened and Endangered Species, Los Alamos National Laboratory, Los Alamos, New Mexico".</p> <p><i>Parking Lot</i> - These actions are covered under the CMRR BA and this work must follow applicable requirements stated in that document.</p> <p><i>Electrical Substation</i> - These actions are covered under the "Amended Biological Assessment (Cons. # 2-22-03-I-0302): The Potential Change in Project Effects of the Chemistry and Metallurgy Research Facility Replacement Project on Federally Listed Threatened and Endangered Species, Los Alamos National Laboratory, Los Alamos, New Mexico".</p>

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7.2 (cont.)		<p><u>TA-51:</u> (PR-ID 10P-0140) Same as above</p> <p><u>TA-54:</u> (PR-ID 10P-0140) Same as above</p> <p><u>TA-63:</u> Yes. These actions are covered under the "Amended Biological Assessment (Cons. # 2-22-03-I-0302): The Potential Change in Project Effects of the Chemistry and Metallurgy Research Facility Replacement Project on Federally Listed Threatened and Endangered Species, Los Alamos National Laboratory, Los Alamos, New Mexico"</p> <p><u>TA-72:</u> No This area to be re-surveyed for bio and cultural concerns. Included in Biological Assessment currently in consultation with USFWS. (PR-ID 10P-0139 V1)</p>
7.3	Provide any correspondence between the LASO and/or LANL and the FWS regarding this project.	<p>Letter, R. Erickson, LASO to J. Nicholopoulos, USFWS, consultation request, April 4, 2003.</p> <p>Letter, J. Nicholopoulos, USFWS to R. Erickson, LASO, Cons.#2-22-03-F-0302, April 15, 2003.</p> <p>Letter, S. MacMullin, USFWS to E. Withers, LASO, Cons.#2-22-03-I-0302, March 9, 2005.</p> <p>Letter, B. Hanson, USFWS to E. Withers, LASO, Cons.#2-22-03-I-0302, February 7, 2006.</p> <p>Letter, W. Murphy, USFWS to V. Loucks, LASO, Cons.#22420-2007-I-0126, September 26, 2007.</p> <p>Letter, W. Murphy, USFWS to V. Loucks, LASO, Cons. # 22420-09-I-0066, August 6, 2009.</p>
<b>8.0</b>	<b>Cultural Resources</b>	
8.1	Indicate if any cultural resources by TA that could or will be impacted by the construction project including laydown and spoils areas.	<p><u>TA-5:</u> None</p> <p><u>TA-36:</u> PR-ID (10P-0140) Cultural resource issues: the sites will be marked by LANL SMEs for avoidance from all ground-disturbing activities and use. LANL Cultural resources SME to be present during all clearing, grubbing, and grading activities in the affected areas.</p> <p><u>TA-46:</u> Avoid fenced archaeological sites</p> <p><u>TA: 48/55:</u> One prehistoric site eligible for the National Register of Historic Places located west of the TA-55/48 boundary would be</p>

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		<p>avoided.</p> <p><u>TA-50:</u>  <i>Parking Lot</i> - Construction of TA-50 parking lot would result in the loss of several historic features related to pre-Manhattan era homesteads. Data recovery would mitigate loss of these resources. Will the larger parking lot 13 acres versus 5 acres in the original EIS result in greater potential losses? No.</p> <p><i>Office Trailers</i>- None;</p> <p><i>Electrical Substation</i> –None.</p> <p><u>TA-51:</u> (PR-ID 10P-0140) Same as above  <u>TA-54:</u> (PR-ID 10P-0140) Same as above  <u>TA-63:</u> Avoid fenced archaeological sites.  <u>TA-72:</u> (PR-ID 10P-0139 V1) Yes. The northern third of the trail into Mortandad Canyon will be impacted/destroyed by the construction of the project. Project personnel must work with ENV-ES Cultural Resources personnel to maintain continued trail access.</p>
8.2	Provide any correspondence with the SHPO regarding this project.	<p>Correspondence between LASO and SHPO</p> <p>Letter, VD Loucks, LASO to K. Slick, State Historic Preservation Officer, April 18, 2006, acknowledged on May 15, 2006</p> <p>Letter, DL Winchell, Jr., LASO to K. Slick, State Historic Preservation Officer, March 21, 2008, concurrence on April 29, 2008</p> <p>Letter, DL Winchell, Jr., LASO to JV Biella, Interim State Historic Preservation Officer, December 23, 2009, concurrence on February 8, 2010</p>
<b>9.0</b>	<b>Socioeconomics</b>	
9.1	<p>Provide an estimate of the number of construction workers that will be needed to support the project by year of construction, if available.</p> <p>At a minimum, need the average number of workers over the duration of the project and the peak number.</p>	<p>–Avg. number of workers = 420                      Peak = 790</p>
9.2	Provide any information that may be available related to where the construction workers will be commuting to LANL from.	No data available
<b>10.0</b>	<b>Potential Release Sites</b>	
10.1	Provide information on any PRS by TA that may be	PRS-55-011(d)

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	encountered during construction and any plans for what steps will be taken in the event a PRS is encountered.	PRS-48-001: This PRS is near the laydown area, but the construction work will not affect the PRS Others covered in PR-ID 10P-0140 exist in one or more laydown/parking areas, but were not specified by SME reviewers in the PR-ID review. PRSs will be avoided when possible. If not possible, the CMRR Project will consult with the Environmental Programs representative to determine the path forward.
<b>11.0</b>	<b>Waste Management &amp; Pollution Prevention</b>	
11.1	Provide estimates of the waste that will be generated during construction and the disposition plans for such waste.	2611 tons nonhazardous. <sup>1</sup> Disposition location – Permitted/licensed industrial solid waste facility; TBD by subcontractor.
11.2	Pollution prevention	Project will employ recycling practices for construction-generated wastes.
<b>12.0</b>	<b>Resource Use</b>	
12.1	Concrete	Structural - 150,000 yd <sup>3</sup> Low slump concrete fill - 250,000 yd <sup>3</sup>
12.2	Cement	See above under geologic resources.
12.3	Steel	Structural – 560 tons Foundation and reinforcing steel – 18,000 tons Will the lean fill be reinforced? No

<sup>1</sup> This figure was arrived at by using actual RLUOB waste generation figures and adjusting for square footage.

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12.4	Add other major building materials that may be needed.	Building Volume	MCF	6.66
		Formwork	SF	1,442,648
		Decking (metal)	SF	0
		Rebar	TON	17,979
		Embeds	LB	1,058,508
		Concrete	CY	120,833
		Misc Conc (mud mat, etc.)	CY	246,759
		Misc. Steel	TON	560
		Small Pipe (2" and under)	LF	97,093
		Large Pipe (2-1/2" and greater)	LF	56,554
		Total Pipe	LF	153,647
		No. of Large Pipe Hangers	EA	4,547
		#Valves	EA	2,706
		HVAC Duct	LB	1,507,342
		HVAC Hangers / Supports	LB	950,295
		Cable Tray and wireway	LF	23,248
		Conduit - Total	LF	1,055,314
		Conduit - Small metallic - 2" & under	LF	915,133
		Conduit - Large metallic - 2 1/2" & over	LF	61,610
		Conduit - Non-Metallic	LF	78,571
		Cable - Instrumentation	LF	247,900
		Cable - Power & Control	LF	1,084,053
		Cable - Lighting & Communications	LF	600,718
		Cable - plant security, optical, fire detect, thermocouple	LF	352,778
		Wire/Cable - Total	LF	2,285,449
		Grounding	LF	54,032
		Terminations	EA	55,754
<b>13.0</b>	<b>Transportation</b>			
13.1	Provide estimate of distance materials will need to travel to the site for shipments of aggregate, cement, steel, and any other large volumes of materials to support construction.	No data currently available; distances expected to be less than 500 miles <input checked="" type="checkbox"/>		

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13.2	Provide estimate of onsite transportation requirements related to construction effort. Trips from TA to TA for various materials, fill, aggregate (if some or all comes from the existing borrow pit), construction materials staged in laydown areas, etc.	Craft will be bused between the TA-72 craft parking lot and the construction site daily at beginning and end of shift. Estimated 15 buses each way. Route will be east on East Jemez Road, west on NM State Rd 4 to Pajarito Rd, and northwest on Pajarito Rd. to job site at TA-55 (10.5 miles).
13.3	Are there any plans for busing in construction workers or requiring carpools for these workers?	Yes; craft parking is proposed in TA-72; personnel would be bused to and from the worksite.
13.4	Provide plans for any temporary closures or modifications to LANL roadways.	None; current proposal would not required closure of Pajarito Road as previously envisioned
	Plan for use of existing LANL truck inspection station during the project. Please provide information on location of truck inspection station, capacity, hours of operation, etc. How long does it take for a truck on average to get through the inspection station? How many trucks can be accommodated in the inspection station at one time?	Existing truck inspection station is located at the intersection of NM State Road 4 and East Jemez Road. Capacity is 15-20 18-wheel transport vehicles/day Hours: 0700-1700 M-F Average time to process a truck: 5-10 minutes; one truck at a time