BUILDING SIZE

CMRR EIS 2003 Data	Sq FT in Text	Ref b (EIS)
3 Bldg Scenario - Cat 2	100,000	pg 2-19
3 Bldg Scenario - Cat 3	100,000	pg 2-19
3 Bldg Scenario AOSF (includes 25000 Util E	200,000	pg 2-19
3 Bldg Scenario - Total	**400,000**	pg 2-19
Tunnels	13,800	
2 Bldg Scenario - Cat 2+3 in one building	**200,000**	pg 2-19
Scenario - AOSF (25000 for Utility Building)	**200,000**	pg 2-19
2 Bldg Scenario - Total	**400,000**	
AOSF minus utility bldg	**175,000**	pg 2-19
Util Bldg	**25,000**	pg 2-19

1200 ft x 11.5 ft

Per Basile:

Assume 90% AOSF goes to RLUOB	180,000
Assume 10% AOSF goes to NF	20,000

Current Estimates- July 2010	Floor Space Design	Gross	Reference
NF		**393,500**	See this workbook's worksheet NF Square Footage; Data Call - Notes Sq Foot Footprint (AR #39a)
Tunnels		**14,100**	See this workbook's worksheet NF Square Footage; Data Call - Notes Sq Foot_Footprint (AR #39a)
RLUOB	**187,127**		Construction Drawing 100925-C54019-G-0001C Rev 1, 10/2/2007; Data Call - Notes Sq Foot_Footprint (AR #39a)
CUB	**20,998**		Construction Drawing 100925-C54019-G-0001C Rev 1, 10/2/2007; Data Call - Notes Sq Foot_Footprint (AR #39a)
Subtotal RLUOB + CUB	208,125	407,600	

Assumptions:
Construction trailers not included.

BUILDING SIZE

	Grand Total SQ FT EIS	Current	Increase (Decrease)	% Change
NF	200,000	393,500	193,500	97%
RLUOB	200,000	187,127		
CUB		20,998		
RLUOB + CUB	200,000	208,125	8,125	4%
Subtotal	**400,000**	**601,625**	**201,625**	
TUNNELS	**13,800**	**14,100**	**300**	**2%**
	413,800	**615,725**	**201,925**	**49%**

LAND USE

CMRR EIS 2003 Data	Acres		
Cat 2 (permanent)	2.50	2.50	2003 CMRR EIS pg 2-19
Cat 3 (permanent)	2.25	2.25	2003 CMRR EIS pg 2-19
Subtotal Cat 2 + Cat 3			
AOSF	4.00	4.00	2003 CMRR EIS pg 2-19
Other	18		2003 CMRR EIS pg 2-21 Table 2-1 note a.
Acres - Parking Lot	5		Permanent
Acres - Laydown	2		Temporary
Acres - Batch Plant	5		Temporary
Acres - Road Alignment	6		Temporary
Acres - Other Construction Elements	18		
Total	**26.75**		
Additional			
Permanent: Buildings (8.75) + Parking lot (5)	13.75		CMRR EIS 2003 page 4-12
Nonpermanent: Laydown (2) + batch (5) + road (6)	13.00		CMRR EIS 2003 page 4-12

Current Estimates- July 2010		
NF (acres)	4.00	See this workbook's worksheet "land area Updates"
RLUOB	4.75	See this workbook's worksheet "land area Updates"
Other Permanent (Parking, Road, Power)	16.15	See this workbook's worksheet "land area Updates"
Sutotal Perm	24.90	
Construction Temp - Trailers, Batch, Laydown,	59.79	See this workbook's worksheet "Land Area Updates"
Total	84.69	

LAND USE

	Grand Total acres EIS	Current
Permant (Bldgs and Parking)	**13.8**	**25**
Temporary - Other Uses	13	53
	0	

WATER USE during Construction

CMRR EIS 2003 Data	Gallons
Cat 2	757300
Cat 3	670500
Subtotal Cat 2 + Cat 3	1,427,800
AOSF (4 in table & text 4.5 in calc result)	1,354,500
Other	963,000
Total	**3,745,300**

EIS Estimates
2003 CMRR EIS Table 2-1, 4-7, & Data Call. Water use is for concrete, compaction, dust control. No personal use estimated

Estimated Gallons Water Used

	Grand Total gallons EIS	Current
Construction period (yrs)	2.25	5.5
RLUOB	1,354,500	1,070,000
Gallons/year	602,000	356,667

Current Estimates- July 2010	acres	Compact Depth	Gallons Water Use for Compaction, Grading, Dust	Concrete Use (Cu yds)	Gallons Water Used for Concrete	**Total**
NF - excavation site	2.4	0	0			
				250,000	63,250,000	63,250,000
NF Area - other	2.6	5	695,500	120,833	30,570,749	31,266,249
RLUOB	2.0	0	0	16,800	concrete not mixed on site	0
RLUOB	3.0	5	802,500		0	802,500
Parking Lot	5	1	267,500	0	0	267,500
Concrete Plant	5	1	267,500		0	267,500
Temp Construction areas (Laydown; etc)	47	na	1,339,500			
Water for site prep, dust control only				0		1,339,500
						0

NF Construction	2,390,800	96,390,749
Gallons per year (of construction)	796,933	17,525,591

Assumptions:		Source:
gallons per acre per ft of compaction	53,500	CMRR EIS 2003 Data Call. Based on TA-18 EIS.Includes compaction, dust control, and grading
Water for site work and dust control in	5,700	2010 Data Call notes/calcs - Water Use in Construction (AR 39j)
Temp Construction Areas gallons/yr		
5700 gall/ac/yr * 5 yrs = Total gallons/acre	28,500	2010 Data Call notes/calcs - Water Use in Construction (AR 39j)
lbs water per yd3 concrete	253	2010 Data Call notes/calcs - Water Use in Construction (AR 39j)
lbs per gallon water	8.33	conversion factor
yd3 to m3 concrete	1.31	conversion factor

WATER USE during Operations

CMRR EIS 2003 Data			Source:
Facility water use MG/Yr	10.4	MG/yr	2003 CMRR EIS Table 2-2 ; Table 4-8

Current Estimates- July 2010			
Total Facility water use MG/Yr	16.15	MG/Yr	Data call notes for the 2010 CMRR SA - Water use during operations
RLUOB (44%)	7.11		
NF (56%)	9.04		

ELECTRICITY During CONSTRUCTION AND CONSTRUCTION PERIOD

CMRR EIS 2003 Data	Months	Working days	MW Hr/Yr	Source:
Cat 2	17	354	88.75	2003 CMRR EIS Table 2-1
Cat 3	17	354	88.75	2003 CMRR EIS Table 2-1
Subtotal Cat 2 + Cat 3	34	708	177.50	
AOSF	26	542	135.00	2003 CMRR EIS Table 2-1
Other	6	125	0.00	
Total	66		312.50	2003 CMRR EIS Table 4-7

Current July 2010 *Current Estimates- July 2010*	Total MWhr (per construction project)	Load Reqd MWH/yr	
NF	272,959	31,018	See this workbook's worksheet "Construction Power Summary"
Total	272,959		

Total Construction Power Peak Demand MW 10.40

ELECTRICITY USE during Operations

CMRR EIS 2003 Data		Source:
Facility use MegaWatt hrs/yr	19,272	2003 CMRR EIS Table 2-2 ; Table 4-8

Current Estimates- July 2010		
Facility use MegaWatt hrs/yr		
RLUOB	58,536	See this workbook's worksheet "Elect Ops Calc"
NF	102,492	See this workbook's worksheet "Elect Ops Calc"
Combined	161,028	See this workbook's worksheet "Elect Ops Calc"
Peak MWwatt	26	See this workbook's worksheet "Elect Ops Calc"

CONCRETE Used in Construction

CMRR EIS 2003 Data	reported m3	converted to yd3	Ref: b, Table 2-1
Cat 2	1,375	1,799	
Cat 3	1,067	1,396	
Subtotal Cat 2 + Cat 3	2,442	3,194	
AOSF	2,340	3,061	
Parking Lot = project total graded area	0	0	
Total	**4,782**	**6,255**	

Concrete (Cu yds)	EIS	Current	Increase (Decrease)	%Change
NF - Regular	3,194	120,833		
NF - Lean		250,000		
RLUOB	3,061	16,800		
Other	0	0		
	6,255	387,633	381,378	6097%

Current Estimates- July 2010	Cu meters	Cu yd	Sources:
NF			
Regular	92,380	120,833	7/6/2010 - Estimates from J. LaRue; and Mtg w/Mike Shields on 8/12/2010 when estimates revised to reflect change in concrete, steel, and manpower;
Lean, low slump fill	191,131	250,000	See this Workbook's "Steel and Concrete Summ" Worksheet
Subtotal	283,511	370,833	
RLUOB	12,844	16,800	7/6/2010 - Estimates from J. LaRue; and "Weekly RFUOB Activity Report 7/20/2008, RLUOB Concrete Installation"
Parking	0	0	
Total	**296,356**	**387,633**	

Assumptions:

yd3 per m3	1.308
m3 per yd3	0.765

SOIL REMOVAL/EXCAVATED MATERIAL/SPOILS

CMRR EIS 2003 Data	reported m3	converted to yd3	
Cat 2			
Cat 3			
Subtotal Cat 2 + Cat 3		117,000	: depth at 63000 sq ft
AOSF		153,000	: depth at 82500 sq ft
Tunnels		25,556	50 @ 13800 sq ft
Trenching		80,667	10 ft @ 6 acres, 43560 sa ft per acre
		376,222	

Spoils (Cu yds)	EIS	Current	Increase (Decrease)	%Change
NF	**117,000**	375,000		
RLUOB	153,000	153,000		
Other	106,222	125,000		
	376,222	653,000	276,778	74%

Current Estimates- July 2010	Convert to m3	Design yd3	
NF	114,679	150,000	150,000 cu yd removed from 50 ft depth = reused on local projects
	172,018	225,000	225,000 cu yd removed from 50 - 125 ft: Hauled to spoils pile
RLUOB		153,000	Ref - NS Email 5/18/2010
Other (added as contingency)	0	125,000	Per M. Shields and r. Holmes, excavated amounts may increase to 500K from the NF excavation; Difference between 350K and 500K added as contingency
Total	**286,697**	653,000	

yd3 per m3	1.31
m3 per yd3	0.76

STEEL

CMRR EIS 2003 Data	reported metric tons	converted to tons	Source:
Cat 2	136	150	2003 CMRR EIS Table 2-1
Cat 3	106	117	
Subtotal Cat 2 + Cat 3	242	267	
AOSF	265	292	
Parking Lot = project total graded area	0	0	
Total	**507**	559	

STEEL (Tons)	EIS	Current	Increase (Decrease)	%Change
NF Struc Steel	267	560	293	
NF Found/Rebar		17,979	17,979	
RLUOB	292	1,010	718	
Other	0		0	
Total - Tons	559	19,549	18,990	
Total - M Tons	507	17,735		

Current Estimates- July 2010		Tons	Source
NF - Structural Steel		560	7/6/2010 - Estimates from J. LaRue; and Mtg w/Mike Shields on 8/12/2010 when estimates revised to reflect change in concrete, steel, and manpower;
NF - Foundation/Reinforce/Other		17,979	See this Workbook's "Steel and Concrete Summ" Worksheet
Subtotal	16,818	18,539	
RLUOB	916	1,010	7/6/2010 - Estimates from J. LaRue; and "Weekly RFUOB Activity Report 7/20/2008, RLUOB Steel Installed"
	0	0	See this workbooks Steel and Concrete Summ Worksheet
Total	**17,735**	19,549	

Assumptions:		Source:
US ton per metric ton	1.102	metric ton = 1000 kg = 2204.6 lb = 1.1023 US ton
Metric Ton per US Ton	0.907	US Ton (short) = 2000 lb

PEAK CONSTRUCTION WORKERS

	MAX Workers
CMRR EIS 2003 Data	
Cat 2	
Cat 3	
Subtotal Cat 2 + Cat 3	
AOSF	
Parking Lot = project total graded area	
Total	300

Current Estimates- July 2010		Source
NF Peak	1,000	Overton and Shields; See this Workbook's "Staffing Chart" worksheet;and Data Call Workforce Notes (AR# 39n)
Avg FTE per year (over duration)	552	
Max		

PEAK WORKERS

Grand Total EIS	Max Current
300	0

WASTE (Nonhazardous) During Construction

CMRR EIS 2003 Data	reported metric tons	US Tons	
Cat 2	130	143	metric ton = 1000 kg = 2204.6 lb = 1.1023 US ton
Cat 3	99	109	
Subtotal Cat 2 + Cat 3	229	252	
AOSF	295	325	
Other	10	11	
Total	534	588	

WASTE (nonhazardous) Grand Total

Current Estimates- July 2010	Metric Tons	US Tons	
NF	No change from 2003 estimates		
RLUOB	185	203	tons through 9/2008
Assumes:	No change in waste generation estimates; Recycling and reuse diversion from landfill will continue on NF		
Waste Water			

NATURAL GAS USE during Operations

CMRR EIS 2003 Data		Source:
Facility use Million cu ft per yr	not available	2003 CMRR EIS Table 2-2 ; Table 4-8

Current Estimates- July 2010	Million Cu ft per yr	
NF	20	Email from Jeff Fauble, 8/31/2010 with reference to Process Flow Diagram M-6110 and M611A
RLUOB	31	Email from Jeff Fauble; 8/31/2010 with reference to 100925-MCAL-11.10
RLUOB Hot Water Load	7.12	Email from Jeff Fauble; 8/31/2010 with reference to 100925-MCAL-11.10
Total	58.12	

(Note no natural gas use during construction is planned)

Source = Email from F. Mehrvarz to S. Marriott, 6/24/2010 re "Load Change Summary for CMRR NF construction"

CMRR - NF
Generally W/O exterior wall thickness
Floor thickness between levels, NOT removed from volume

	Vault					Cat-1					Aux								
	Dim-W/E	Dim-N/S	Height	SqFt	CuFt	Dim-W/E	Dim-N/S	Height	SqFt	CuFt	Dim-W/E	Dim-N/S	Height	SqFt	CuFt	SqFt	CuFt	SqFt	
Basement	53	244	15	12,906	193,583	172	295	15	50,740	761,100	104	295	15	30,680	460,200	94,326	1,414,883		
Mezzanine	53	244	18	12,906	232,299	172	295	18	50,740	913,320	104	295	18	30,680	552,240	94,326	1,697,859		
Lab Level	53	244	17	12,906	219,394	172	295	17	50,740	862,580	104	295	17	30,680	521,560	94,326	1,603,534		
Interstitial Level	53.0	33.5	18.0	1,776	31,959	172	295	18	50,740	913,320	104	295	18	30,680	552,240	83,196	1,497,519		
Penthouse / Roof	53.0	33.5	22.0	1,776	39,061				0	0	104.0	126.8	22.0	13,182	290,004	14,958	329,065	**381,130**	**Subtotal without tunnels**
Tunnel R - See detail				0	0				0	0				2,199	24,189	2,199	24,189		
Tunnel 4 - See detail				8,121	93,411				0	0				0	0	8,121	93,411	**10,320**	subtotal of Tunnels
				50,389	809,706				202,960	3,450,320				138,101	2,400,433	391,450	6,660,459		

Tunnel R Detail NOTE: RLUOB constructed portion NOT considered.	Dim-W/E	Dim-N/S	Height	SqFt	CuFt
W - E Section 1	18.0	16.8	11.0	302	3,317
N - S Section	11.5	85.0	11.0	978	10,753
W - E Section 2	80.0	11.5	11.0	920	10,120
				2,199	24,189

Tunnel 4 Detail	Dim-W/E	Dim-N/S	Height	SqFt	CuFt
W - E Section	170.5	12.0	10.0	2,046	20,460
N - S Section	12.0	215.8	10.0	2,589	25,890
Utility Room	83.0	42.0	13.5	3,486	47,061
				8,121	93,411

NF Square Footage and FootPrint Estimates
Source = 8/12/2010 Updates from N. Sequin per Drawing 100320-C54634-GA-10001-Rev B, 3/3/2010

	Vault	Cat 1	Aux	Fuel Oil	Tunnel
Basement	11,000	56,600	32,500		
Mezzanine	9,100	44,600	20,100		
Lab Level	11,200	56,600	33,400		
Interstitial Level		58,000	34,800		
Penthouse /			14,900		
Roof/Elevator/HVAC		3,900	5,200		
Tunnels					10,100

Tunnels					4,000	14,100	subtotal of Tunnels
totals	31,300	219,700	139,800	2,700		393,500	**Subtotal without tunnels**

Source = Seguin, 8/12/2010, Estimates of NF footprint by reference to
UCNI - Construction Drawing 100320-C54634-G-10001-Rev OC, 9/28/2009
UCNI - Construction Drawing # 100320-C54634-G-10002, REV 0C, 9/28/2009;
UCNI - Construction Drawing #100320-C54634-G-30001, REV 0C, 9/28/2009; and
UCNI - Construction Drawing #100320-C54634-G-30003, REV 0C, 9/28/2009;

NF Footprint 342 feet * 304 feet

RLUOB Footprint -- prepared by N. Seguin, 8/12/2010

Source: Drawing 100925-C54019-A-1150 rev 1 , 9/6/07

Basement, 2nd floor, 4th floor

	feet	inches
	12	11
	10	10
	26	8
	5	0
	34	0
	31	6
	31	6
	21	3
	12	10
	18	11
East West	31	6
subtotal	231	71
	236	5.916667
Total	236	11

Third floor

	feet	inches
	37	6
	5	0
	34	0
	31	6
	31	6
	21	3
	12	10
	18	11
	31	6
subtotal	220	48
East West	220	4
total	224	

North Sout	28	0
	26	8
	19	9
	25	0
	25	0
	25	0
	25	0
	25	0
	25	0
	25	0
	25	0
	34	0
subtotal	307	17

North South

Same as other floors

	307	1.416667
North Sout	308	5

Steel and Concrete Estimates -- Updated Aug 12, 2010

Peak Craft Staffing Level: 800 (for ~4yrs)

Commodities:

	RLOUB	NF	Total
Concrete (CY)	16,800	120,833	137,633
Lean Concrete (CY)		250,000	250,000
	16,800	370,833	387,633

Steel	RLUOB	NF	Total
Structural/Misc. (Tn)	1,010	576	1,586
Foundations/Reinforcing		17968	17,968
Misc		50	50
Totals	1,010	18,594	19,604

Source: Summary provided by J. LaRue, July 6, 2010. Summary based on data in Calculation worksheet (worksheet 2); and data found in CMRR Public Drive Files -- S/Public/Infra Pak/NEPA SA/Estimate Report 6_4_10 REV1

Source/Update August 12 2010 -- Meeting with M. Shields. Concrete (structural) volume revised. Earlier numbers had an error in the spreadsheet the numbers shown above are correct as of Aug 12, 2010

Estimates of Power Requirements for NF Construction for Use in CMRR SA 2010.
SOURCE: "Load Change Summary for CMRR NF Construction , EAW 200888"; excel spreadsheet prepared by Eugene Wagner (EAS), dated June 3, 2010.
Transmitted in email from F. Mehrvarz to S. marriott, 6/24/2010.
(Note -- Notes , updates, calcs made to the original/source spreadsheet (reference above) are shown in RED and Highlighted in Yellow.)

April 6, 2010	Initial
June 3, 2010	Updated
August 30, 2010 -- Mtg with E. Wagner, S. Hartnett, N. Sequin to review/discuss power loads	**Added Columns P thru Y to come up w/ Estimate of MWhr/yr**
August 31 2010 -- Email review/changes by EAW	
EAW - 200888	

Construction Power - NF Site

Estimated Operating Duration and Load Requirements (Based on 8/30 and 8/31 meeting/discussions E. Wagner, S. Hartnett, N. Sequin)

Basis

Load Name						VA Change	Demand Factor		VA					Note	Start Date (month and year)	End Date (month and year)	total # days	avg hrs/day	total Operating Hrs	TOTAL LOAD (MWhr) = VA* hours* 1MW/1,000,000 VA)	MWhr/yr	
					Amps	VA Connected	Guess															1) Start/End dates estimated using engineering judgement and/or NF Construction Mobize Schedule (Data Date 4/1/2010; TDS run Date 6/28/2010) unless otherwise noted. 2) Hours per day estimated based on engineering judgement and 8/30 mtg with E.Wagner; or as otherwise noted.
Construction Crane #1 - 268 Amps	Manitowoc MD_485B-M30-w/ 150 LCC 50				268	222,811	0		0													
Construction Crane #2 - 268 Amps	Manitowoc MD_485B-				268	222,811	0		0													
Construction Crane #1	Liebherr Model 550 HC20				300	249,415	0.8		199,532													
Construction Crane #2	Liebherr Model 550 HC20				300	249,415	0.8		199,532													
Subtotal									399,065						May-13	Sep-16	1219	10	12190	4865		Assumes 10 hours/day crane operation. (Alternative estimate= 12 hr/day, 5 days/week*174 weeks = 10440 hours)
Guard Tower 1						10,000	0.8		8,000													
Guard Tower 2						10,000	0.8		8,000													
Guard Tower 3						10,000	0.8		8,000													
Guard Tower 4						10,000	0.8		8,000													
Subtotal									32,000						Jul-12	Jul-20	2922	24	70128	2244		assumes 24hrs/7 days operation
Batch Plant 1						1,000,000	0.8		800,000					1								
Batch Plant 2						1,500,000	0.8		1,200,000					1								
Subtotal									2,000,000						Jul-12	Nov-16	1584		1360	2720		Based on 300 cu yd/hour concrete production rate and total concrete required (370,833 cu yds) (per concrete data notes AR #39 b) (370,833/300) + 10% for contingency =1360 hours total (for life of the project)
	VA per SqFt			SqFt	Amps	VA	Demand															
	100320-ECAL-00013-																					
Construction Lighting-Basement	1			94,326		94,326	1.25		117,907					3, 4	Feb-14	Feb-20	2191	24	52584	6200		Assumes 24 hours/day as level is constructed. Start date based on start of Concrete Building sheet
Construction Lighting-Mezzanine	1			94,326		94,326	1.25		117,907					3, 4	Aug-15	Feb-20	1645	24	39480	4655		Assumes 24 hours/day as level is constructed. Start date based on start of Structural Steel
Construction Lighting-Lab Level	1			94,326		94,326	1.25		117,907					3, 4	Aug-15	Feb-20	1645	24	39480	4655		
Construction Lighting-Interstitial Level	1			83,196		83,196	1.25		103,994					3, 4	Aug-15	Feb-20	1645	24	39480	4106		
Construction Lighting-Penthouse	1			14,958		14,958	1.25		18,697					3, 4	Aug-15	Feb-20	1645	24	39480	738		
Construction Lighting-Tunnel R	1			2,199		2,199	1.25		2,749					3, 4	Aug-15	Feb-20	1645	24	39480	109		
Construction Lighting-Tunnel 4	1			8,121		8,121	1.25		10,151					3, 4	Aug-15	Feb-20	1645	24	39480	401		
Subtotal									489,312													
								Quantity														
Construction Lighting-Roadway and area						4,320	1.25	6	32,400					3								Lighting required 12 hour/day, 7 day/week
Construction Lighting-Wall mounted exterior walls						70	1.25	22	1,925					3								

Subtotal									34,325						Nov-11	Jul-20	3165	12	37980	1304		
						VA Connected	Demand Factor															
				SqFt		100320-ECAL-00013, Rev A	NEC Table 630.11(A) 70% Duty Cycle															
Construction Welders-Basement				94,326		40,000	0.84		33,600					3								Assumes 10 hr/day welding.
Construction Welders-Mezzanine				94,326		40,000	0.84		33,600					3								
Construction Welders-Lab Level				94,326		40,000	0.84		33,600					3								
Construction Welders-Interstitial Level				83,196		40,000	0.84		33,600					3								
Construction Welders-Penthouse				14,958		40,000	0.84		33,600					3								
Construction Welders-Tunnel R				2,199		40,000	0.84		33,600					3								
Construction Welders-Tunnel 4				8,121		40,000	0.84		33,600					3								
Subtotal									235,200						Feb-14	Feb-16	730	10	7300	1717		
													Design # of Air Changes Per Hour									
											20,000		3									
Ventilation See attached area / volume calculation sheet				SqFt	Amps: 38+38	VA Connected	Demand Factor	Quantity		Cu-Ft	Air Handler	Minutes to	No. of units required to									Assumes 24 hours/day ventilation required as level is constructed. Start dates as described above for Lighting
Basement	2 * 30, HP each unit				76	63,185	1.00	3.54	223,499	1,414,883	20,000	71	3.54	2, 4	Feb-14	Feb-20	2191	24	52584	11752		
Mezzanine	2 * 30, HP each unit				76	63,185	1.00	4.24	268,199	1,697,859	20,000	85	4.24	2, 4	Aug-15	Feb-20	1645	24	39480	10588		
Lab Level	2 * 30, HP each unit				76	63,185	1.00	4.01	253,299	1,603,534	20,000	80	4.01	2, 4	Aug-15	Feb-20	1645	24	39480	10000		
Interstitial Level	2 * 30, HP each unit				76	63,185	1.00	3.74	236,553	1,497,519	20,000	75	3.74	2, 4	Aug-15	Feb-20	1645	24	39480	9339		
Penthouse / Roof	2 * 30, HP each unit				76	63,185	1.00	0.82	51,980	329,065	20,000	16	0.82	2, 4	Aug-15	Feb-20	1645	24	39480	2052		
Tunnel R	2 * 30, HP each unit				76	63,185	1.00	0.06	3,821	24,189	20,000	1	0.06	2, 4	Aug-15	Feb-20	1645	24	39480	151		
Tunnel 4	2 * 30, HP each unit				76	63,185	1.00	0.23	14,755	93,411	20,000	5	0.23	2, 4	Aug-15	Feb-20	1645	24	39480	583		
Subtotal								16.65	1,052,106	6,660,459			16.65									
2 Times																						
Heating See attached area / volume calculation sheet				SqFt	Amps, per heater	VA Connected,	Demand Factor	Quantity														Heating required to keep Temp at min of 50 degrees; therefore, assume heating required when Temp falls below 50 degrees. Based on review of daily normal temps Los Alamos: the estimated number of days when 24 hrs/day heating is required = 181 days/yr; estimated number of days where partial day heating (12 hr/day) is required = 52 days/yr . Therefore: (181*24 hours/day) + (52*12 hrs/day) = 4968 hours of heating per year. 4968 hrs/yr ÷ 365 days/yr = 13.6 hours/day of heating required. Heat is required as level is constructed; start dates for construction is as described above for Lighting. (Weather data source: www.weather.lanl.gove/ftp_data/climate/LANormals.html)
Construction Heating-Basement				94,326	433	359,989	1.00	3.54	1,273,357					2, 4	Feb-14	Feb-20	2191	13.6	29798	37943		
Construction Heating-Mezzanine				94,326	433	359,989	1.00	4.24	1,528,028					2, 4	Aug-15	Feb-20	1645	13.6	22372	34185		
Construction Heating-Lab Level				94,326	433	359,989	1.00	4.01	1,443,138					2, 4	Aug-15	Feb-20	1645	13.6	22372	32286		
Construction Heating-Interstitial Level				83,196	433	359,989	1.00	3.74	1,347,728					2, 4	Aug-15	Feb-20	1645	13.6	22372	30151		
Construction Heating-Penthouse				14,958	433	359,989	1.00	0.82	296,150					2, 4	Aug-15	Feb-20	1645	13.6	22372	6625		
Construction Heating-Tunnel R				2,199	433	359,989	1.00	0.06	21,769					2, 4	Aug-15	Feb-20	1645	13.6	22372	487		
Construction Heating-Tunnel 4				8,121	433	359,989	1.00	0.23	84,067					2, 4	Aug-15	Feb-20	1645	13.6	22372	1881		
Subtotal								16.65	5,994,237													
	100320-ECAL-00013, Rev A			SqFt		VA Connected	Demand Factor															
Construction Misc Pwr-Basement	0.5			94,326		47,163	0.75		35,372					3, 4								
Construction Misc Pwr-Mezzanine	0.5			94,326		47,163	0.75		35,372					3, 4								
Construction Misc Pwr-Lab Level	0.5			94,326		47,163	0.75		35,372					3, 4								
Construction Misc Pwr-Interstitial Level	0.5			83,196		41,598	0.75		31,198					3, 4								
Construction Misc Pwr-Penthouse	0.5			14,958		7,479	0.75		5,609					3, 4								
Construction Misc Pwr-Tunnel R	0.5			2,199		1,100	0.75		825					3, 4								
Construction Misc Pwr-Tunnel 4	0.5			8,121		4,061	0.75		3,045					3, 4								
Subtotal									146,794						Aug-15	Jul-20	1796	10	17960	2636		Power needed per shift worked
Subtotal - NF Building -->									10,383,039													
Construction Power (Demand) - Total -->									10,383,039													Per Discussions w/E. Wagner; Peak Load can be estimated as equal to the Total NF Construction Power deman = 10.4 MW

Notes:

1 Chris Soltis e-mail 04/15/10 3:26 PM
2 Steve Overton / Bruce Bingham ROM work-up
3 100320-ECAL-00013, Rev A
4 SqFt area and CuFt Volume, from attached sheet
5
6

NOTES -- Loads below were not included in original spreadsheet; were provided by E. Wagner on 8/30/2010. (Per " Load Changes Summary for CMRR-NF 100512")																						
Craft Trailers									350,000						**Aug-12**	**Jul-20**	**2891**	**7.1**	**20526**	**7184**		Assumes 10 hours/ day * 260 days/year ÷ 365 days per year = 7.1 hrs/day/yr
Construction Office/Design Trailers									1,400,000						**Dec-10**	**Jul-20**	**3500**	**7.1**	**24850**	**34790**		
Laydown areas									300,000						**Jan-12**	**Jul-20**	**3104**	**7.1**	**22038**	**6612**		
Construction Power Total -->																				**272959**	**31,018.05**	

Estimated Electrical Load required for the CMRR; prepared for use in the CMRR Supplement Analysis, 2010.

Reference/Sources

1 Best Guess Electrical Load Forecast Spreadsheet from Eugene Wagner March 25, 2010. (Shown below)
2 100320-E0CAL-00001 Rev C 11/23/2009 p 24/36
3 Meeting w/E. Wagner, S.. Hartnett, N. Sequin, 8/30/2010 to disscuss Electrical Loads

Estimate/Calcs

RLUOB Assume full power load during normal Working/Operations hours and 60% of full power load during non-working, operations hours. (Reference #3, Mtg with E. Wagner on 8/30/2010)
Full power load = 9081 KVA or 9.0 MW (reference: Design Load highlighted in spreadsheet below)
Non working hours = 60% of 9.0 WM = 5.4 MW — 5.4
Working Hours: Assumed 12 hrs/day * 260 days/yr = 3120 hours/yr. — 3,120.0
Non working Hours: (365 days/yr * 24 hours/day) - 3120 hours/year (of working hours) = 5640 hours per year — 5,640.0
Yearkly Load = (3120 hours/year * 9.0 MW) + (5640 hours/year * 5.4 WM) = 58,536 MW — 58,536.0
RLUOB Operations Load = 58,536 MW per year

NF Assume full pwer load 24/7, e.g. no change in load between operating and non-operating hours. (Based on meeting w/E. Wagner 8/30/2010,
Full power load = 11,693 KVA, or 11.7 MW (reference: #2, 100320-E0CAL-00001 Rev C 11/23/2009 p 24/36)
Yearkly Load = (11.7 * 24 hours/day * 365 days/yr) = 102,492 — 102,492.0
NF Operations Load = 102,492MW per year

Total Load RLUOB + NF
58,536 + 102,492 = 161,028 MW per year — 161,028.00

Estimated Peak Demand
Peak load is 3750 MW per transformer (with fans running), as per Load Forecast spreadsheet below and per 8/302010 meeting with E. Wagner
7 transformers (per meeting with E. Wagner) -- 3 for RLUOB, 4 for NF
Total Peak Load = 7*3750 = 26,250 KVA = 26 MW — 26.25

Best Guess - Load Forecast - CMRR

Best Guess is based on IFC drawings for RLUOB and VERY preliminary estimated for NF

By Eugene A. Wagner, III, P.E. (x 7-5225)
CMRR - Lead Electrical Engineer
November 2, 2009 Initial
March 25, 2010 Revised

	Design load	30% Load growth for 50 year design life	Estimated per year growth = 30% per yr / 50 yr	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
	kVA	kVA	kVA	kVA	kVA	kVA	kVA	kVA	kVA	kVA	kVA	kVA	kVA	kVA	kVA	kVA
RLUOB	NOTE: - The below load information is taken from RLUOB Issued For Construction drawings E-6000, E-6001, E-6005, and E-6012															
SUS-A	2771	832	16.6	2771	2788	2804.3	2820.9	2837.6	2854.2	2870.8	2887.5	2904.1	2920.8	2937.4	2954.0	2970.7
SUS-B	2984	895	17.9	2984	3002	3019.8	3037.7	3055.6	3073.5	3091.4	3109.3	3127.2	3145.1	3163.0	3180.9	3198.8
SUS-C	3326	809	16.2	3326	3342	3358.4	3374.5	3390.7	3406.9	3423.1	3439.3	3455.4	3471.6	3487.8	3504.0	3520.2
RLUOB - Total kVA	9081	2536	50.7	9081.0	9131.7	9182.4	9233.2	9283.9	9334.6	9385.3	9436.0	9486.8	9537.5	9588.2	9638.9	9689.6
RLUOB - Total kVA		11617														

NF	NOTE: - The expected transformer size for the NF power system is 2500 kVA / 3750 kVA (with fans running) Initial design load for each substation is calculated as 3750 kVA - 30% and final 50 year load as 3750 kVA per substation		Estimated per year growth = 3750 kVA - 2500 kVA / 50 Yr.								2016 - GUESS!	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
3750	kVA	kVA	kVA								kVA	kVA	kVA	kVA	kVA	kVA	kVA	kVA	kVA	kVA	kVA	kVA	kVA
SUS-A(NF)	2625	1125	22.5								2625	2648	2670.0	2692.5	2715.0	2737.5	2760.0	2782.5	2805.0	2827.5	2850.0	2872.5	2895.0
SUS-A(NF)	2625	1125	22.5								2625	2648	2670.0	2692.5	2715.0	2737.5	2760.0	2782.5	2805.0	2827.5	2850.0	2872.5	2895.0
SUS-C(NF)	2625	1125	22.5								2625	2648	2670.0	2692.5	2715.0	2737.5	2760.0	2782.5	2805.0	2827.5	2850.0	2872.5	2895.0
SUS-D(NF)	2625	1125	22.5								2625	2648	2670.0	2692.5	2715.0	2737.5	2760.0	2782.5	2805.0	2827.5	2850.0	2872.5	2895.0
NF - Total kVA	10500	4500	90.0								10500.0	10590.0	10680.0	10770.0	10860.0	10950.0	11040.0	11130.0	11220.0	11310.0	11400.0	11490.0	11580.0
NF - Total kVA		15000																					

BUILDING SIZE

CMRR EIS	Sq FT in Text	"Total Building"
3 Bldg Scenario - Cat 2	100,000.00	Text page 2-19
3 Bldg Scenario - Cat 3	100,000.00	Text page 2-19
3 Bldg Scenario AOSF (25000 for Utility Building)	200,000.00	Text page 2-19
3 Bldg Scenario - Total	**400,000.00**	
2 Bldg Scenario - Cat 2+3 in one building	**200,000.00**	Text page 2-20
2 Bldg Scenarion - AOSF (25000 for Utility Building)	**200,000.00**	Text page 2-20
2 Bldg Scenario - Total	**400,000.00**	
AOSF minus utility bldg	**175,000.00**	Text page 2-19
Util Bldg	**25,000.00**	Text page 2-19

	Floorspace Design	Gross	
Current			
NF	274,800	387,700	Per Phase Z FDD Appendix H.
RLUOB	187,127		G-0001C
CUB	20,998		G-0001C
Subtotal RLUOB + CUB	482,925	387,700	

Per Basile:

Assume 90% AOSF goes to RLUOB	180,000
Assume 10% AOSF goes to NF	20,000

BUILDING SIZE

	Grand Total EIS	SQ FT Current
Cat 2	**100,000**	
Cat 3	**100,000**	
AOSF	**200,000**	
NF		387,700
RLUOB		187,127
CUB		20,998
RLUOB + CUB		482,925

Assumptions:
Construction trailers not included.

LAND USE

CMRR EIS	Acres in Table 2-1		
Cat 2 (permanent)	2.5	2.5	Text page 2-19
Cat 3 (permanent)	2.25	2.25	Text page 2-19
Subtotal Cat 2 + Cat 3			
AOSF	4	4	CMRR EIS Page 2-19 states 4.0 acres, Table 2-1 states, Water Calc uses 4.5
Other	18		
Total	**26.75**		

Current	acres
NF (acres - Overton)	5
RLUOB (acres same as AOSF)	4.5
Parking (laydown, batch, etc)	83.1
Total	**92.6**

LAND USE

	Grand Total EIS	acres Current
	26.8	**92.6**

Addressed in CatEX.

Assumptions:		Source:
Permanent: Buildings (8.75) + Parking lot (5)	13.25	CMRR EIS text states 13.75 page 4-12
Nonpermanent: Laydown (2) + batch (5) + road (6)	13	CMRR EIS text 4-12
Original Other:		CMRR EIS Table 2-1 note a.
Acres - Parking Lot	5	Permanent
Acres - Laydown	2	
Acres - Batch Plant	5	
Acres - Road Alignment	6	
Acres - Other Construction Elements	18	
	Current Other:	
Acres - RLUOB	4.5	
Acres - NF	5	
Acres - Parking Lot	5	CMRR EIS Table 2-1 note a.
Acres - TA 50 + TA 55 Laydown	2	CMRR EIS Table 2-1 note a.
Acres - TA 46 + TA 63 Laydown	60.6	PR-ID-07-0072
Acres - Road Alignment	6	CMRR EIS Table 2-1 note a.
Acres - Other Construction Elements	83.1	

WATER

CMRR EIS	acres	fill depth ft	m3 concrete		Compaction	Concrete	Data Call Total	Reported in
Cat 2	2.5	5	1375		668,750	88,490	757,240	757300
Cat 3	2.25	5	1067		601,875	68,668	670,543	670500
Subtotal Cat 2 + Cat 3			2,442	Subtotal	1,270,625	157,158	1,427,783	
AOSF (4 in table & text 4.5 in calc result)	4.5	5	2340		1,203,750	150,593	1,354,343	1,354,500
Other	18	1	0		963,000	0	963,000	963,000
Total	27.25		4,782	Grand Total	**3,437,375**	**307,751**	**3,745,126**	**3,745,300**

WATER

Grand Total	gallons
EIS	Current
3,745,300	8,759,217

No metering available.

Current	acres	fill depth ft	Current RLUOB Construction & Phase Z NF Design Basis m3 concrete (see below)		Estimated Gallons Water Used Compaction	Concrete	Total	
NF (acres - Overton)	5	5	68810		1,337,500	4,428,343	5,765,843	Doesn't include backfill compaction.
RLUOB (acres same as AOSF)	4.5	5	12845		1,203,750	826,624	2,030,374	Doesn't include backfill compaction.
Parking (acres no change for compaction calc)	18	1	0		963,000	0	963,000	
Total	27.5		81654	Grand Total	**3,504,250**	**5,254,967**	**8,759,217**	

Assumptions:		Source:
gallons per acre compacted/5 ft fill depth	267500	CMRR EIS Table 2-1 Reference: LANL 2002 Data Call. Based on TA-18 EIS.
lbs water per yd3 concrete	410	CMRR EIS Table 2-1 Reference: LANL 2002 Data Call. Based on Standard Handbook for Mechanical Engineer, 9th edition, Table 6.9.7.
lbs per gallon water	8.333	CMRR EIS Table 2-1 Reference: LANL 2002 Data Call.
yd3 to m3 concrete	1.308	CMRR EIS Table 2-1 Reference: LANL 2002 Data Call.

Considers only compaction and concrete. Doesn't include dust control or other uses.
Current water use estimate based on same assumptions/calcs in CMRR EIS except for change in acreas and yds concrete.
No NF laydown area compaction. Therefore no change in acres for compaction purpose.
Compaction is 5 ft fill depth prior to building construction. Doesn't include backfill compaction after construction.

ELECTRICITY and CONSTRUCTION PERIOD

CMRR EIS	Months	Working days	kWh	MWh	Reported in CMRR EIS MWh
Cat 2	17	354	88542	88.54	88.75
Cat 3	17	354	88542	88.54	88.75
Subtotal Cat 2 + Cat 3	34	708	177,083	177	177.5
AOSF	26	542	135417	135.42	135
Other	6	125	0	0.00	NA
Total	66		Grand Total	312.50	**312.5**

Current		Yrs		MWh per project
NF (Overton)	66	5.5		1854
RLUOB (2/4/07 to 9/30/08)	31	2.6		871
SFE (Overton)	24	2.0		674
Total	121		Grand Total	**3398**

Electricity

Grand Total	MWh
EIS	Current
312.5	3,398.1

Construction Period

Grand Total	Months
EIS	Current
Cat 2	17
Cat 3	17
AOSF	26
Other	6
NF	66
RLUOB	31
SFE	24

No metering available.

Assumptions:		Source:
Cat 2 + Cat 3 Data call calc assumed 34 total months and divided equally by 2 buildings		
kWh/day average during construction	250	CMRR EIS Table 2-1 Reference: LANL 2002 Data Call. Based on TA-18 EIS.
working days per year	250	CMRR EIS Table 2-1 Reference: LANL 2002 Data Call. Based on TA-18 EIS.
RLUOB	337	Email Montoya to Terp RLUOB: 2 @ 300kVA transformers, 0.9 power factor, 0.3 demand factor, 2080 hrs/yr = ~337 MWh/yr
NF = assume same as RLUOB	337	

CONCRETE

CMRR EIS	reported m3	converted to yd3
Cat 2	1375	1798
Cat 3	1067	1396
Subtotal Cat 2 + Cat 3	2442	3194
AOSF	2340	3061
Parking Lot = project total graded area	0	0
Total	4782	6255

Current	Converted to m3	Design yd3

Concrete

Grand Total	m3
EIS	Current
4,782	81,654

NF	68810	90000
RLUOB	12845	16800
Parking	0	0
Total	81654	106800

Assumptions:		Source:
yd3 per m3	1.31	HP 48 GX calculator conversion
m3 per yd3	0.76	

STEEL

CMRR EIS	reported metric tons	converted to tons
Cat 2	136	150
Cat 3	106	117
Subtotal Cat 2 + Cat 3	242	267
AOSF	265	347
Parking Lot = project total graded area	0	0
Total	507	613

Current	Converted to	Design	Weekly Activity Reports
NF	551	500	
RLUOB	1323	1200	1010
Parking	0	0	
Total	1874	1700	

Assumptions:		Source:
metric ton per US ton	1.10	metric ton = 1000 kg = 2204.6 lb = 1.1023 US ton
US ton per metric ton	0.91	US Ton (short) = 2000 lb

Current Design: Does not include rebar and embeds. Structural steel only. CMRR EIS doesn't clarify.

STEEL

Grand Total EIS	metric tons Current
507	1,874

PEAK CONSTRUCTION WORKERS

CMRR EIS	MAX Workers
Cat 2	
Cat 3	
Subtotal Cat 2 + Cat 3	
AOSF	
Parking Lot = project total graded area	
Total	300

Current	Converted to
NF (Overton)	500
RLUOB (Weekly Activity Report Chart)	325
Max	500

PEAK WORKERS

Grand Total EIS	Max Current
300	500

WASTE (Nonhazardous)

CMRR EIS	reported metric tons
Cat 2	130
Cat 3	99
Subtotal Cat 2 + Cat 3	229
AOSF	295
Parking Lot = project total graded area	10
Total	534

WASTE (nonhazardous)

Grand Total EIS	metric tons Current
534	224
	RLUOB ONLY To Date

Current		Metric Tons	US Tons	
NF				
RLUOB		224	203	tons through 9/2008
SFE				
Parking Lot				
	Max	224		

Land Usage Estimates/Updates for use in the CMRR SA, July 2010.
Source: Original August 16 2010 (hartnett) ; Updated August 31, 2010, Hartnett/Seguin

Land Disturbance (acre)	2003 EIS Estimate	Updated Estimate acres	Acres Revised 8-31-10	Temporary or Perm	Reference	References Revised 8-31-10	Date Updated	Notes -	Sq Ft	Acres	Conversion Factor (sq ft per acre)
TA 50 Parking & Intersection Upgrades– TA 50-9002 area, east of existing trailers	5	13.00	8.60	Perm	PR ID 10P-0036	10-003-CCAL-001 Drainage Calculation	Jun-10				
Pajarito Road Shift– South and West of entrance to TA 55 from Pajarito Rd.	6	6.00	3.40	Perm	PR ID 09P-0046; Cat EX (LASO-10_02)	Road Shift CatEx	Aug-10	0.5 mile long by 56 feet wide = 147,840 sq ft disturbed	147,840	3.39	43,560
TA 63/46 Batch Plant & Laydown	7		0.00	Temporary	PR-ID 07P-0072, 06P-0117 Siting Notification SPPI-07-041; SM#6804	Delete refs shown	Jul-07	Included w/TA 46, 63 Laydown			
TA 46 and 63 Laydown		40.00	40.83	Temporary	PR ID 10P-0067	PR ID 10P-0067 Section 13.01	Apr-10				
TA-55 Gas Line relocate			0.00	Perm				Included w Road Shift and NF/RLUOB Site			
TA 48 Construction office Trailers – TA48-9000		0.40	0.42	Temporary	PR ID 08P-0017	PR ID 08P-0017 Section 13	Apr-08				
Laydown Yard – TA 48/55 Laydown areas & Batch Plant		10.00	15.40	Temporary	PR ID 10P-0106	PR ID 10P-0106 Map	Jul-10				
Move/shift NMSSUP fence			0.00	Perm				included w/TA 48/55 Laydown			
TA 50 13-Wide Construction Office Trailer – TA 50-9002 area, south		1.30	1.30	Temporary	PR ID 08P-0141	PR ID 08P-0141 Section 13.1	Mar-10				
Temp Power upgrades to TA 5		1.84	1.84	Temporary	PR ID 05P-0205	GIS Tool	Oct-05	400ft * 200 ft	80,000	1.84	43,560
TA 50 115/13.2 KV substation		1.50	1.40	Perm	PR-ID 05P-0205 V1	PR-ID 05P-0205 V1 Section 13.1	Mar-10	Covered by CMRR SA			
Original TA-50 South Office Trailers (9000 - 9002)			2.8	Perm		PR-ID 06P-0045 Section 7	3/30/2006				
subtotal	18										
Subtotal Temp		53.5	59.8								
Subtotal Perm		20.5	16.2								
		74.04	75.94								

Other				
Concrete Plant Area				
TA-63		15.00	Temp	GIS Tool
TA-48		5.00	Temp	GIS Tool

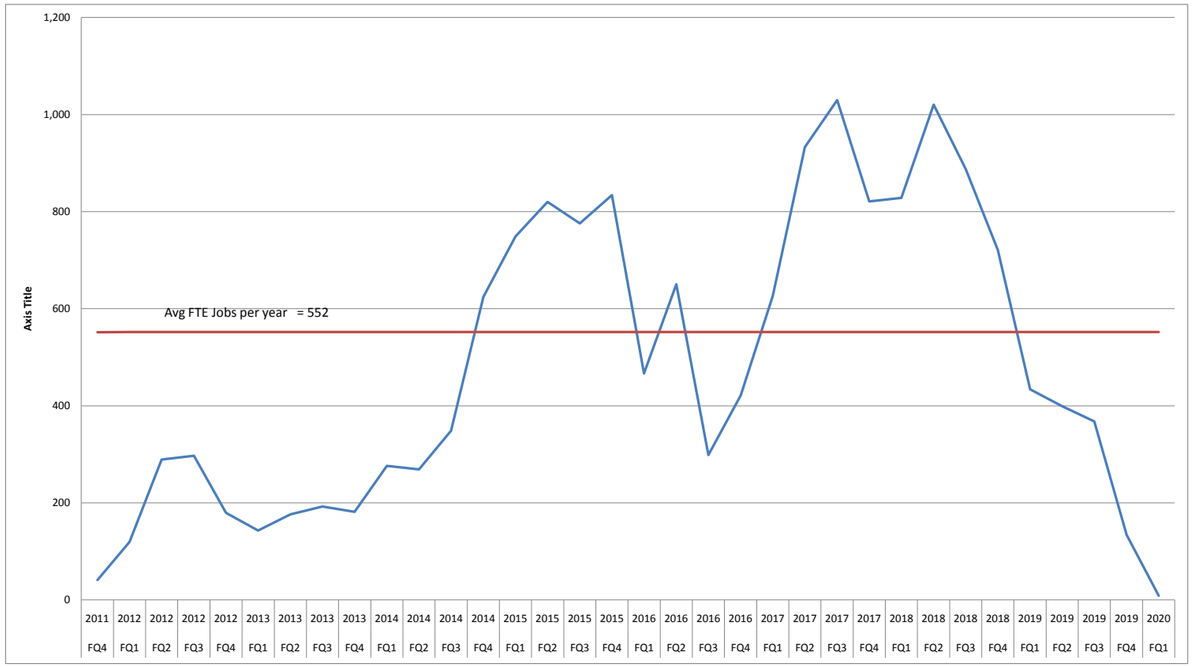
RLUOB Bldg and permanent site	4.00	EIS
NF Bldg and permanent site	4.75	EIS

Source -- NF Construction Project NFC-01, 4/27/2010 . ; Email from Terry D. Sutton (TD) to Steve Overton, re: Manpower Curve, April 27, 2010

	FQ4	FQ1	FQ2	FQ3	FQ4	FQ1	FQ2	FQ3	FQ4	FQ1	FQ2	FQ3	FQ4	FQ1	FQ2	FQ3	FQ4	FQ1	FQ2	FQ3	FQ4	FQ1	FQ2	FQ3	FQ4	FQ1	FQ2	FQ3	FQ4	FQ1	FQ2	FQ3	FQ4	FQ1
FY	2011	2012	2012	2012	2012	2013	2013	2013	2013	2014	2014	2014	2014	2015	2015	2015	2015	2016	2016	2016	2016	2017	2017	2017	2017	2018	2018	2018	2018	2019	2019	2019	2019	2020
Construction/Craft Hours	21,469	62,223	150,401	154,608	93,308	74,332	91,812	99,992	94,325	143,788	139,809	181,354	324,762	389,380	426,352	403,428	433,843	242,690	338,262	155,430	219,220	325,649	485,241	535,435	427,016	430,783	530,728	461,598	374,888	225,694	207,435	191,301	69,833	4,653
Cummualtive Hours	21,469	83,691	234,092	388,700	482,008	556,340	648,142	748,134	842,459	986,247	1,126,056	1,307,410	1,632,172	2,021,551	2,447,903	2,851,331	3,285,174	3,527,864	3,866,126	4,021,556	4,240,775	4,566,424	5,051,665	5,587,100	6,014,116	6,444,899	6,975,627	7,437,225	7,812,113	8,037,807	8,245,243	8,436,544	8,506,376	8,511,030
FTE per Qtr (hrs/520)	41	120	289	297	179	143	177	192	181	277	269	349	625	749	820	776	834	467	651	299	422	626	933	1,030	821	828	1,021	888	721	434	399	368	134	9
cummulative hrs for Craft; Based on Above numbers	8511030																																	

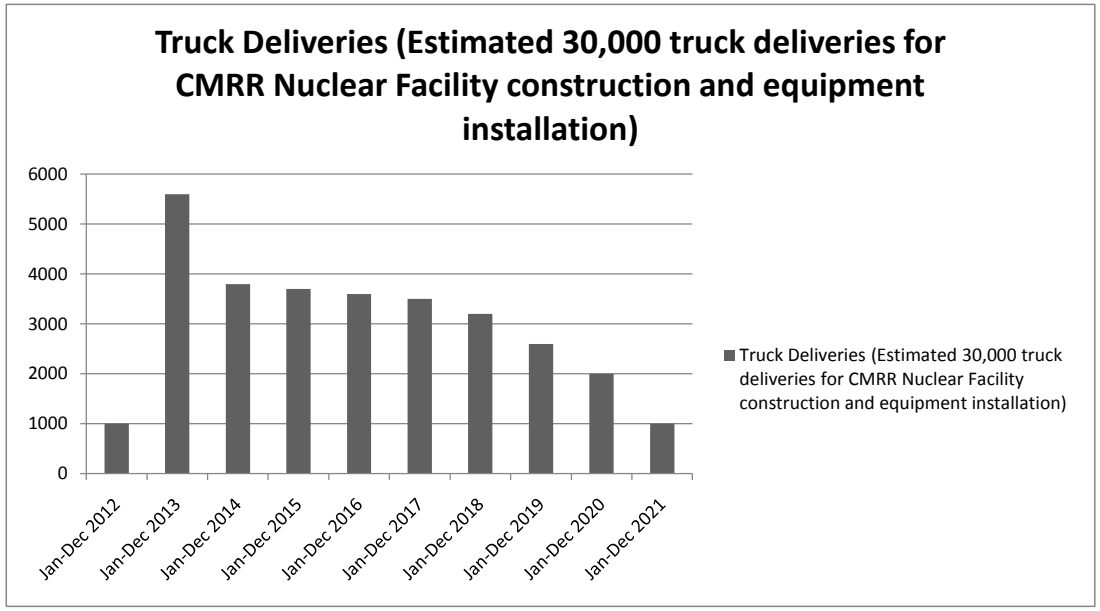
Updated on 8/12/2010 with Input from Mike Shields. Added non-construction personnel

Hours for Craft	8,769,307																																	
Management/Non Construction	610,722																																	
Subtotal	9,380,029																																	
FTE (1 FTE @ = 2000 hrs/yr)	4,690																																	
FTE per year (8.5 yrs)	552																																	
Jobs per year	552	552	552	552	552	552	552	552	552	552	552	552	552	552	552	552	552	552	552	552	552	552	552	552	552	552	552	552	552	552	552	552	552	552



SOURCE: Email from G. Mazuranich to S. Hartnett re: Truck Delivery Graph, July 16, 2010

	Jan-Dec	Jan-Dec	Jan-Dec	Jan-Dec	Jan-Dec	Jan-Dec	Jan-Dec	Jan-Dec	Jan-Dec	Jan-Dec
Year	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Truck Deliveries (Estimated 30,000 truck deliveries for CMRR Nuclear Facility construction and equipment installation)	1000	5600	3800	3700	3600	3500	3200	2600	2000	1000



CMRR Project Specific Truck Trips

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	TOTAL TRIPS
# Trucks per year											
Deliveries for CMRR NF construction and equip install	1000	5600	3800	3700	3600	3500	3200	2600	2000	1000	30000
Avg per day	4	22	15	14	14	13	12	10	8	4	
Subtotal (includes intrasite hauling of spoils)	47	22	15	14	14	13	12	10	8	4	41180
Concrete and Soil Specifics --already included in above totals											
Truck Trips per day to Concrete Plant for soil stabilization feed material Assumes 25% of all trips in 2012 and 75% in 2013.	4	20									6263
Avg per day for Spoils hauling (intra site); Non public road, not inspected, not included in # of Trucks per year shown above. Assumes 100 of trips in 2012	43										11,250
Avg per day to Concrete Plant for Structural Concrete		2	5	5	5	1					8448
Comparisons											
Avg daily vehical trips (additional) - As evaluated/reported in the CMRR EIS	135	135	135	135	135	135	135	135	135	135	351000
Avg daily # of Truck Trips - outbound - for MDA removal options (see notes below)	41	41	41	41	41						53,924
Avg daily # of Inbound shipments for MDA materials (source SWEIS Table I-74)	7	162	10	165	58						104,300
Subtotals for MDA Projects	**48**	**203**	**51**	**207**	**99**						158,224
Increase in Daily Vehicle Trips (SWEIS - Table 5-86, Page 5-231, SWEIS)	7440	7440	7440	7440	7440						37,200
Increase in Daily Vehicle Trips (SWEIS - Table 5-52, Page 5-159, SWEIS)	49800	49800	49800	49800	49800						249,000

CMMR excavation and concrete fill

	cu yd	cu yd/truck	# truck trips	Duration (yrs)	trips per day
spoils (non inspected, intra site)	225,000	20	11,250	1.00	43
Concrete & aggregate for lean	125,000	20	6,250	1.00	24
Concrete & aggregate to concrete plant (assume 70% per cu yd concrete)	84,583	20	4,229	3.50	5
subtotal			10,479		

Weeks per year 52

Working days per week 5

Comparison Notes - MDA Removal Option in SWEIS 2008

	# trucks	Avg #/yr (over 10 yr)	Avg #/day	
Total # of off site shipments for MDA removal options over 10 yrs. Source - SWEIS Table 5-50	107,847	10,785	41	
# of Inbound shipments for MDA materials (SWEIS Table I-74) for Fys	1700 FY12	42000 FY 13	2600 FY 14	43000 FY 1515000 FY 16
Increase in Daily Trips (Table 5-52Page 5-231, SWEIS)	7440	18 % incr		