

STUDY 1 - ALTERNATIVE STORAGE SYSTEMS FOR DUAL PURPOSE CANISTERS

COST DETAILS

ALTERNATIVE 17 - C-BGV, PILOT, LOW SEISMIC

LIFE CYCLE COST SUMMARIES



Pilot Storage Facility (5,000 MTU)

Project: C-BGV Pilot (5,000 MTU)

PILOT Project - C-BGV 60/40 Vertical/Horizontal - Low Seismic

Separate CHB

Annual Escalation Factor 1.90% Discount Rate 3.40%

Life Cycle Costs (40 Year Life) Design & Construction Operations & Maintenance (40 Year Life) Cask Handling	Capital <i>\$784,444,352</i>	Operations \$532,376,272 \$38,508,689	Transport	Decommissioning	Escalation	Total Costs \$784,444,352 \$532,376,272 \$38,508,689
Transportation Equipment	\$0					\$0
Transport Operations		\$0	\$0			\$0
Repackaging	\$0	\$0				\$0
Transport to Repository	\$0		\$0			\$0
D&D				\$186,798,657		\$186,798,657
Escalation					\$844,967,618	\$844,967,618
Total Costs (40 year Life)						\$2,387,095,588
Present Value						\$1,177,733,055
Life Cycle Costs (80 Year Life)	Capital	Operations	Transport	Decommissioning	Escalation	Total Costs
Design & Construction	\$784,444,352	-				\$784,444,352
Operations & Maintenance (80 Year Life)	, ,	\$973,159,561				\$973,159,561
Cask Handling		\$38,508,689				\$38,508,689
Transportation Equipment	\$0					\$0
Transport Operations		\$0	\$0			\$0
Repackaging	\$0	\$0				\$0
Transport to Repository	\$0		\$0			\$0
D&D				\$186,798,657		\$186,798,657
Escalation					\$2,674,703,851	\$2,674,703,851
Total Costs (80 Year Life)						\$4,657,615,109



STUDY 1 - ALTERNATIVE STORAGE SYSTEMS FOR DUAL PURPOSE CANISTERS

COST DETAILS

ALTERNATIVE 17 - C-BGV, PILOT, LOW SEISMIC

CAPITAL COST SUMMARY

\$750,000



Interim Storage Facility

Pilot Storage Facility (5,000 MTU)

Project: C-BGV Pilot (5,000 MTU)
PILOT Project - C-BGV 60/40 Vertical/Horizontal - Low Seismic Separate
CHB

Level 3 Cost Summary - First of A kind module

Level 1	Level 2	Level 3	Description	- Facility and the constant of Particular		Level 3 Total
C-BGV 01	C DCV 04 04			ge Facility and transportation Project	¢460.742.626	
	C-BGV 01.01		Pilot	ISF Facility	\$469,712,636	
		C-BGV 01.01	.01	Storage BGV LE s		\$0
		C-BGV 01.01		Cask Handling (Transfer) Facility		\$135,175,719
		C-BGV 01.01		Horizontal Dry Storage Modules		\$0
		C-BGV 01.01		Vertical Dry Storage Module		\$173,397,756
		C-BGV 01.01		Storage Cask Fabrication Facility		\$2,000,000
		C-BGV 01.01		Cask Maintenance Facility		\$0
		C-BGV 01.01		Concrete Batch Plant		\$1,850,000
		C-BGV 01.01		Visitor Center/ Auditorium		\$0
		C-BGV 01.01		Administration Building		\$3,140,000
		C-BGV 01.01		Security		\$24,148,975
		C-BGV 01.01		Rail Spur/ Receiving Yard		\$58,752,800
		C-BGV 01.01		Utilities		\$18,682,150
		C-BGV 01.01	.13	Roads		\$18,212,737
		C-BGV 01.01	.14	Parking		\$735,000
		C-BGV 01.01	.15	Site Work		\$23,417,500
		C-BGV 01.01	.16	Warehouse		\$10,200,000
		C-BGV 01.01	.17	Maintenance Facility		\$0
		C-BGV 01.01	.18	Waste management Facility		\$0
		C-BGV 01.01	.01.xx	(Add Further Breakdown as needed)		\$0
	C-BGV 01.02		Expa	nded Interim Storage Facility	\$0	
		C-BGV 01.02	.01	Expanded Storage BGV LE s and Dry Cask Stora	ige Systems	\$0
		C-BGV 01.02	.02	Expanded Cask Handling Facility (if required)		\$0
		C-BGV 01.02	.03	Horizontal Dry Storage Modules		\$0
		C-BGV 01.02	.04	Vertical Dry Storage Casks		\$0
		C-BGV 01.02	.05	Storage Cask Fabrication Facility (Expanded)		\$0
		C-BGV 01.02	.06	Cask Maintenance Facility (Expanded)		\$0
		C-BGV 01.02	.07	Concrete Batch Plant (Expanded if needed)		\$0
		C-BGV 01.02	.08	Visitor Center/ Auditorium (expanded if neede	ed)	\$0
		C-BGV 01.02	.09	Administration Building (Expanded if needed)		\$0
		C-BGV 01.02	.10	Security (Expanded)		\$0
		C-BGV 01.02	.11	Rail Spur/ Receiving Yard (Expanded)		\$0
		C-BGV 01.02	.12	Utilities Expanded as needed)		\$0
		C-BGV 01.02	.13	Roads (Expanded)		\$0
		C-BGV 01.02	.14	Parking (Expanded as needed)		\$0
		C-BGV 01.02	.15	Site Work (Expanded)		\$0
		C-BGV 01.02	.16	Warehouse (Expanded if Needed)		\$0
		C-BGV 01.02	.17	Maintenance Facility (Expanded if needed)		\$0
		C-BGV 01.02	.18	Waste management Facility (Expanded if need	ed)	\$0
		C-BGV 01.02	.19	Hot Cell / Laboratories		\$0
		C-BGV 01.02	.20	Pool Packaging Facility		\$0
		C-BGV 01.02		Standardized Storage System		\$0
		C-BGV 01.02	.22	Standardized Disposal Canister		\$0
		C-BGV 01.02	.23	Canister Repackaging Facility (For Repository		\$0
	C-BGV 01.03			sportation Equipment	\$0	
		C-BGV 01.03		Transportation Casks		\$0
		C-BGV 01.03		Rail Equipment		\$0
		C-BGV 01.03		Rail Maintenance Facility		\$0 \$0
		C-BGV 01.03	.04	Transportation Systems Services		\$0
	C-BGV 01.04	0.001/01/01		Construction Capitalized Costs	\$66,025,000	₫ ₹ 600 005
		C-BGV 01.04		Land or Land Leases		\$7,680,000
		C-BGV 01.04		Site permits		\$200,000
		C-BGV 01.04		Site Licensing		\$6,240,000
		C-BGV 01.04		Plant Permits		\$750,000

Planning and Alternative Studies

C-BGV 01.04.06

Project Total

\$784,444,352



	C-BGV 01.04.07	Research and Development	\$0
	C-BGV 01.04.08	Design	\$23,955,000
	C-BGV 01.04.09	Other Pre-construction Costs	\$17,200,000
	C-BGV 01.04.10	Pre-construction contingencies	\$10,000,000
	C-BGV 01.04.xx	(Add Further Breakdown as needed)	\$0
C-BGV 01.05		Indirect Capitalized Costs \$63,180,000	, -
	C-BGV 01.05.01	Project Management	\$2,700,000
	C-BGV 01.05.02	Construction Management	\$3,600,000
	C-BGV 01.05.03	Field indirect services	\$11,880,000
	C-BGV 01.05.04	Design Services in support of Construction	\$5,400,000
	C-BGV 01.05.05	QA/QC	\$12,600,000
	C-BGV 01.05.06	Commissioning and Startup	\$1,200,000
	C-BGV 01.05.07	Home office Engineering support to Construction	\$7,200,000
	C-BGV 01.05.08	Document Control	\$2,700,000
	C-BGV 01.05.09	Project Controls	\$3,600,000
	C-BGV 01.05.10	Construction Testing	\$2,700,000
	C-BGV 01.05.11	Inspections	\$3,600,000
	C-BGV 01.05.12	Startup and Testing	\$3,000,000
	C-BGV 01.05.12	Commissioning	\$3,000,000
C-BGV 01.06	C DGV 01.03.13	Site Selection \$0	75,000,000
C-DGV 01.00	C-BGV 01.06.01	Site Selection 30	\$0
	C-BGV 01.06.02	Public Information Process	\$0
C-BGV 01.07	C-DG V 01.00.02	Decontamination and Deconstruction \$0	50
C-BGV 01.07	C-BGV 01.07.01	Decommissioning	\$0
	C-BGV 01.07.01	Decontamination	\$0 \$0
	C-BGV 01.07.02 C-BGV 01.07.03	Deconstruction	\$0 \$0
	C-BGV 01.07.03	Deconstruction	\$0 \$0
	C-BGV 01.07.04 C-BGV 01.07.05		\$0 \$0
C-BGV 01.08	C-BGV 01.07.03	Project Financial Costs \$80,254,963	Ş 0
C-BGV 01.06	C-BGV 01.08.01	Contractor Fees	¢47 012 411
	C-BGV 01.08.01	Escalation Costs	\$47,913,411
	C-BGV 01.08.02 C-BGV 01.08.03		\$32,341,552
	C-BGV 01.08.04	Interest Payments	\$0 \$0
	C-BGV 01.08.04 C-BGV 01.08.05	Indirect costs to support shipments to repository	\$0 \$0
	C-BGV 01.08.03	(Add Further Breakdown as needed)	\$0 \$0
	C-DGV 01.06.XX	(Add I dittlef bleakdowli as fleeded)	30
C-BGV 01.09		Project Contingencies \$105,271,753	
C-DGV 01.03	C-BGV 01.09.01	Management Reserve - Contractor Held	\$33,958,630
	C-BGV 01.09.01	Contingency - DOE held	\$71,313,123
	C-BGV 01.09.02	Contingency - DOE neid	\$/1,313,123
C-BGV 01.10			
C-DO A 01'10	C-BGV 01.10.01	Other Direct Costs \$0	
	C-BGV 01.10.01	DOE Project Operations	\$0
	C-BGV 01.10.02 C-BGV 01.10.03	DOE TROJECT OPERATIONS DOE TM&E	\$0 \$0
	C-BGV 01.10.03	Host site Operational Costs Miscellaneous	\$0 \$0
	C-BGV 01.10.04 C-BGV 01.10.05	Miscellaneous ODC	\$0 \$0
	C-BGV 01.10.03	Miscellatieous ODC	Ş 0
C-BGV 01.11		Operational Costs 0	
C-DGV 01.11	C-BGV 01.11.01	Operational Costs Operations Costs	\$0
	C-BGV 01.11.01	Transportation Costs	\$0 \$0
	C-BGV 01.11.02	Escalation (Operations/Transportation)	\$0
	C-DG V 01.11.03	Escalation (Operations) transportation)	ŞÜ
		(All Direct & indirect Costs, MR,	
		TEC Escalation)	\$713,131,229
		TPC (TEC plus Contingency, ODCs)	\$784,444,352
		All Capitol, Operation, Transportation,	
		ICC Escalation	\$78 <i>1 111</i> 1 352

LCC

Escalation



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COST DETAILS

ALTERNATIVE 17 - C-BGV, PILOT, LOW SEISMIC

LIFE CYCLE COST - 40 YEAR OPERATING LIFE

\$ 2,774,046,269



Interim Storage Facility

Pilot Storage Facility (5,000 MTU)

Project: C-BGV Pilot (5,000 MTU)

PILOT Project - C-BGV 60/40 Vertical/Horizontal - Low Seismic

Separate CHI

· ·									/	Ann	ual Escalation			Dis	count Rate
40 Yea	r Op	erating life									1.90%				3.40%
VEAD		D / C		0014	_	Sant Transiller		D.0.D			Facilities				C as latin
YEAR		Design/Const	<u>,</u>	O&M		ask Handling	۸.	D&D		_	Escalation		nual Expense		Cumulative
1	\$	10,000,000	\$	-	\$	-	\$	-		\$	190,000	\$	10,190,000	\$	10,190,000
2	\$ ¢	10,000,000	\$ ¢	-	\$ \$	-	\$ ¢	-		\$ \$	383,610	\$	10,383,610	\$	20,573,610
3	\$	20,000,000	\$ ¢	-	\$ ¢	-	\$ ¢	-		>	1,161,797	\$	21,161,797	\$	41,735,407
4 _	\$ ¢	20,000,000	<u>ې</u>	-	ک	-	\$ د	-		<u>ې</u>	1,563,871	\$	21,563,871	\$	63,299,279
5	<u>۲</u>	20,000,000	<u>ې</u>	-	ک	-	\$ د	-		<u>ې</u>	1,973,585	\$	21,973,585	\$	85,272,863
6	<u>۲</u>	20,000,000	<u>ې</u>	-	ک	-	\$ د	-		<u>ې</u>	2,391,083	\$	22,391,083	\$	107,663,946
,	\$	27,888,399	<u>ې</u>	-	۶ ک	-	<u>ې</u>	-		۶ ک	3,927,403	\$	31,815,802	\$	139,479,748
8	\$ ¢	200,000,000	ې د	7E 072 410	ې د	-	ې د	-		ې خ	32,500,273	\$ ¢	232,500,273	\$ ¢	371,980,021
9	\$	200,000,000	\$	25,073,418	ر ک	-	ې خ	-		ې خ	41,546,053	\$	266,619,471	\$	638,599,492
10 11	\$	577,119,234	\$ ¢	24,539,498	ر ک	12 926 220	ې خ	-		ې خ	124,601,166 8,706,478	\$	726,259,898	\$	1,364,859,390
12	\$		ې د	25,012,938 25,012,938	\$ \$	12,836,230 12,836,230	\$ ¢	-		ې د	9,591,036	\$ \$	46,555,646 47,440,204	\$ ¢	1,411,415,036
13	ې د	-	ې د				\$ ¢	-		ې د	10,492,400			ې د	1,458,855,240
	ې د	-	ې د	25,012,938	\$ ¢	12,836,230	\$ ¢	-		ې د	•	\$ ¢	48,341,568	ې د	1,507,196,808
14 15	ې د	-	ې د	11,019,582	\$ \$	-	ې د	-		ې د	3,322,219	\$ ¢	14,341,801	ې د	1,521,538,609
16	ې د	-	ې د	11,019,582	۶ \$	-	ې د	-		ې د	3,594,713	\$ ¢	14,614,296	\$ ¢	1,536,152,905
17	ې د	-	ې د	11,019,582		-	ې د	-		ې د	3,872,385	\$ ¢	14,891,967	ې د	1,551,044,872
	ې د	-	ې د	11,019,582	\$ ¢	-	ې د	-		ې د	4,155,332	\$ ¢	15,174,915	\$ ¢	1,566,219,787
18	ې د	-	ې د	11,019,582	\$ ¢	-	ې خ	-		ې خ	4,443,656	\$	15,463,238	ې خ	1,581,683,025
19	ې د	-	ې د	11,019,582	\$ ¢	-	ې خ	-		ې خ	4,737,457	\$	15,757,040	\$ ¢	1,597,440,064
20	>	-	\$ ¢	11,019,582	\$	-	\$ ¢	-		>	5,036,841	\$	16,056,423	\$ ¢	1,613,496,487
21	۶ ک	-	<u>ې</u>	11,019,582	\$	-	<u>ې</u>	-		۶ ک	5,341,913	\$	16,361,495	<u>ک</u>	1,629,857,983
22	\$ ¢	-	\$ ¢	11,019,582	\$	-	\$ ¢	-		>	5,652,782	\$	16,672,364	\$ \$	1,646,530,347
23	\$ ¢	-	\$ ¢	11,019,582	\$	-	\$ ¢	-		\$ \$	5,969,556	\$	16,989,139	\$ ¢	1,663,519,485
24	\$ \$	-	\$ \$	11,019,582	\$	-	\$	-		\$ \$	6,292,350	\$	17,311,932	\$	1,680,831,417
25	\$ \$	-	\$	11,019,582	\$	-	\$	-		>	6,621,277	\$	17,640,859	\$	1,698,472,276
26	\$ \$	-	\$	11,019,582	\$	-	\$	-		>	6,956,453	\$	17,976,035	\$	1,716,448,312
27	\$ \$	-	\$	11,019,582	\$	-	\$	-		>	7,297,998	\$	18,317,580	\$ \$	1,734,765,892
28	\$ \$	-	\$	11,019,582	\$ \$	-	\$	-		>	7,646,032	\$	18,665,614	\$	1,753,431,506
29	\$ \$	-	\$ \$	11,019,582	\$ \$	-	\$	-		\$ \$	8,000,678	\$	19,020,261	\$	1,772,451,767
30	\$ \$	-	\$ \$	11,019,582	\$ \$	-	\$	-		\$ \$	8,362,063	\$	19,381,646	\$	1,791,833,412
31	\$ \$	-	\$	11,019,582	\$ \$	-	\$	-		>	8,730,315	\$	19,749,897	\$	1,811,583,309
32	\$ \$	-	\$ \$	11,019,582	\$ \$	-	\$	-		\$ \$	9,105,563	\$	20,125,145	\$	1,831,708,454
33	\$ \$	-	\$	11,019,582	\$ \$	-	\$ \$	-		\$ \$	9,487,941	\$	20,507,523	\$ \$	1,852,215,977
34	\$ \$	-	\$ \$	11,019,582	\$ \$	-	\$	-		\$ \$	9,877,583	\$ \$	20,897,166	\$	1,873,113,142
35	\$ ¢	-	\$ ¢	11,019,582	\$	-	\$ ¢	-		>	10,274,630	\$	21,294,212	\$ \$	1,894,407,354
36	>	-	\$ ¢	11,019,582	\$ ¢	-	\$ ¢	-		>	10,679,220	\$ ¢	21,698,802	\$ ¢	1,916,106,156
37	۶ ک	-	<u>ې</u>	11,019,582	۶ ک	-	<u>ې</u>	-		۶ ک	11,091,497	\$	22,111,079	<u>ک</u>	1,938,217,235
38	۶ ک	-	<u>ې</u>	11,019,582	۶ ک	-	<u>ې</u>	-		۶ ک	11,511,607	\$ ¢	22,531,190	<u>ک</u>	1,960,748,425
39	\$ ¢	-	\$ ¢	11,019,582	\$	-	\$ ¢	-		>	11,939,700	\$	22,959,282	\$ \$	1,983,707,707
40	۶ ک	-	<u>ې</u>	11,019,582	۶ ک	-	<u>ې</u>	-		۶ ک	12,375,926	\$ ¢	23,395,509	<u>ک</u>	2,007,103,215
41	ې د	-	ې د	11,019,582	ر ک	-	ې خ	-		ې خ	12,820,441	\$	23,840,023	ې خ	2,030,943,238
42	\$ ¢	-	\$ ¢	11,019,582	\$	-	\$ ¢	-		>	13,273,401	\$ ¢	24,292,984	\$ \$	2,055,236,222
43	۶ ک	-	<u>ې</u>	11,019,582	۶ ک	-	>	-		۶ ک	13,734,968	\$	24,754,550	<u>ک</u>	2,079,990,772
44	۶ ک	-	<u>ې</u>	11,019,582	۶ ک	-	>	-		۶ ک	14,205,305	\$ ¢	25,224,887	<u>ک</u>	2,105,215,659
45 46	۶ ک	-	<u>ې</u>	11,019,582	۶ ک	-	>	-		۶ ک	14,684,577	\$	25,704,160	<u>ک</u>	2,130,919,819
46	۶ ک	-	ې د	11,019,582	۲ ک	-	ې خ	-		۶ ک	15,172,956	\$ ¢	26,192,539	ې خ	2,157,112,357
47	۶ ک	-	<u>ې</u>	11,019,582	۶ ک	-	>	-		۶ ک	15,670,615	\$	26,690,197	<u>ک</u>	2,183,802,554
48	ې د	-	ې د	11,019,582	ر ک	-	ې خ	-		ې خ	16,177,728	\$ ¢	27,197,311	ې خ	2,210,999,865
49 50	۶ ک	-	<u>ې</u>	11,019,582	۶ ک	-	>	-		۶ ک	16,694,477	\$	27,714,060	\$ }	2,238,713,924
50	ې د	-	ې د	11,019,582	ر ک	-	ې خ	42 500 000		ې خ	17,221,044	\$ ¢	28,240,627	ې خ	2,266,954,551
51 52	۶ ک	-	<u>ې</u>	-	۶ ک	-	>	42,500,000		۶ ک	68,487,052	\$ ¢	110,987,052	<u>ک</u>	2,377,941,603
52 52	ک د	-	ب	-	<u>٠</u>	-	>	26,000,000		ې د	43,188,022	\$ ¢	69,188,022	>	2,447,129,625
53	\$ ¢	-	\$ ¢	-	\$	-	\$ ¢	39,432,886		>	67,494,835	\$	106,927,721	\$	2,554,057,346
54 55	ې	-	ب	-	<u>٠</u>	-	>	39,432,886		ې د	69,526,462	\$ ¢	108,959,348	ب	2,663,016,693
55 50	۶ ک	-	ې د	-	۲ ک	-	ې خ	39,432,886		۶ ک	71,596,690	ې د	111,029,575	ې خ	2,774,046,269
56	۲ ک	-	ب	-	٠ ۲	-	٠ \$	-		ې د	-	ې د	-	٠ ج	2,774,046,269
57 50	\$ ¢	-	\$ ¢	-	\$ ¢	-	\$ ¢	-		ې د	-	\$ ¢	-	ب	2,774,046,269
58 50	ب	-	<u>۲</u>	-	۲ ۲	-	>	-		ې ۲	-	>	-	>	2,774,046,269
59 60	<u>۲</u>	-	<u>></u>	-	<u>۲</u>	-	\$ ^	-		>	-	<u>></u>	-	<u>></u>	2,774,046,269
60	\$	-	\$	-	\$	-	\$	-		\$	-	\$	-	>	2,774,046,269
		Total		Total				Total			Total				Total
		Design/Const		O&M				D&D			Escalation				Life Cycle
	,	Design/Const		UQIVI	_			טאַט		_	ESCAIACION				Life Cycle

\$ 1,105,007,633 \$ 532,376,272 \$ 38,508,689 \$ 186,798,657 \$ 911,355,018



STUDY 1 - ALTERNATIVE STORAGE SYSTEMS FOR DUAL PURPOSE CANISTERS

COST DETAILS

ALTERNATIVE 17 - C-BGV, PILOT, LOW SEISMIC

LIFE CYCLE COST - 80 YEAR OPERATING LIFE



Pilot Storage Facility (5,000 MTU)

Project: C-BGV Pilot (5,000 MTU)

PILOT Project - C-BGV 60/40 Vertical/Horizontal - Low Seismic

Separate CHB

80 Year Operating Life

80 Yea	r Op	erating Life											
										Ann	ual Escalation		Discount Rate
											1.90%		3.40%
YEAR		Design/Const		O&M	C	ask Handling		D&D			Escalation	Annual Expense	Cumulative
1	\$	10,000,000	\$	- JOHN	\$	ask Hallullig	\$	DQD	_	\$	190,000	\$10,190,000	\$10,190,000
2	\$	10,000,000	\$	_	ς ,	_	\$		_	\$	383,610	\$10,383,610	\$20,573,610
3	\$	20,000,000	ς ς	_	¢	_	¢		_	\$	1,161,797	\$21,161,797	\$41,735,407
4	\$	20,000,000	¢		Ċ	_	ċ			\$	1,563,871	\$21,563,871	\$63,299,279
5	ب ذ	20,000,000	¢		Ċ	_	ċ			¢	1,973,585	\$21,973,585	\$85,272,863
6	\$ \$	20,000,000	ې د	-	ې د	-	ې خ		-	ې خ		\$22,391,083	\$107,663,946
7	·		ې د	-	ې د	-	ې خ		-	ې خ	2,391,083		
-	\$ ¢	27,888,399	ې د	-	ې د	-	۶ د		-	۶ ۲	3,927,403	\$31,815,802	\$139,479,748
8	ې د	200,000,000	ې د	25 072 440	ې د	-	۶ د		-	۶ ۲	32,500,273	\$232,500,273	\$371,980,021
9	>	200,000,000	\$	25,073,418	\$ ¢	-	۶ د		-	۶ د	41,546,053	\$266,619,471	\$638,599,492
10	\$	577,119,234	\$	24,539,498	\$ \$	-	\$ \$		-	\$	124,601,166	\$726,259,898	\$1,364,859,390
11	<u>,</u>		\$	25,012,938	\$ \$	12,836,230	\$		-	\$ \$	8,706,478	\$46,555,646	\$1,411,415,036
12	\$	-	\$	25,012,938	\$	12,836,230	\$		-	\$	9,591,036	\$47,440,204	\$1,458,855,240
13	\$	-	\$	25,012,938	\$	12,836,230	\$		-	\$	10,492,400	\$48,341,568	\$1,507,196,808
14	\$ •	-	\$	11,019,582	\$	-	\$		-	\$	3,322,219	\$14,341,801	\$1,521,538,609
15	\$,	-	\$	11,019,582	\$	-	\$		-	\$	3,594,713	\$14,614,296	\$1,536,152,905
16	\$	-	\$	11,019,582	\$	-	\$		-	\$	3,872,385	\$14,891,967	\$1,551,044,872
17	\$	-	\$	11,019,582	\$	-	\$		-	\$	4,155,332	\$15,174,915	\$1,566,219,787
18	\$	-	\$	11,019,582	\$	-	\$		-	\$	4,443,656	\$15,463,238	\$1,581,683,025
19	\$	-	\$	11,019,582	\$	-	\$		-	\$	4,737,457	\$15,757,040	\$1,597,440,064
20	\$	-	\$	11,019,582	\$	-	\$		-	\$	5,036,841	\$16,056,423	\$1,613,496,487
21	\$	-	\$	11,019,582	\$	-	\$		-	\$	5,341,913	\$16,361,495	\$1,629,857,983
22	\$	-	\$	11,019,582	\$	-	\$		-	\$	5,652,782	\$16,672,364	\$1,646,530,347
23	\$	-	\$	11,019,582	\$	-	\$		-	\$	5,969,556	\$16,989,139	\$1,663,519,485
24	\$	-	\$	11,019,582	\$	-	\$		-	\$	6,292,350	\$17,311,932	\$1,680,831,417
25	\$	-	\$	11,019,582	\$	-	\$		-	\$	6,621,277	\$17,640,859	\$1,698,472,276
26	\$	-	\$	11,019,582	\$	-	\$		-	\$	6,956,453	\$17,976,035	\$1,716,448,312
27	\$	-	\$	11,019,582	\$	-	\$		-	\$	7,297,998	\$18,317,580	\$1,734,765,892
28	\$	-	\$	11,019,582	\$	-	\$		-	\$	7,646,032	\$18,665,614	\$1,753,431,506
29	\$	-	\$	11,019,582	\$	-	\$		-	\$	8,000,678	\$19,020,261	\$1,772,451,767
30	\$	-	\$	11,019,582	\$	-	\$		-	\$	8,362,063	\$19,381,646	\$1,791,833,412
31	\$	-	\$	11,019,582	\$	-	\$		-	\$	8,730,315	\$19,749,897	\$1,811,583,309
32	\$	-	\$	11,019,582	\$	-	\$		-	\$	9,105,563	\$20,125,145	\$1,831,708,454
33	\$	-	\$	11,019,582	\$	-	\$		_	\$	9,487,941	\$20,507,523	\$1,852,215,977
34	\$	-	\$	11,019,582	\$	-	\$		-	\$	9,877,583	\$20,897,166	\$1,873,113,142
35	\$	-	\$	11,019,582	\$	-	\$		_	\$	10,274,630	\$21,294,212	\$1,894,407,354
36	\$	-	\$	11,019,582	\$	-	\$		_	\$	10,679,220	\$21,698,802	\$1,916,106,156
37	\$	-	\$	11,019,582	\$	-	\$		_	\$	11,091,497	\$22,111,079	\$1,938,217,235
38	\$	-	\$	11,019,582	\$	-	\$		_	\$	11,511,607	\$22,531,190	\$1,960,748,425
39	Ś	_	\$	11,019,582	Ś	_	; \$		_	\$	11,939,700	\$22,959,282	\$1,983,707,707
40	\$	_	\$	11,019,582	\$	_	\$		_	\$	12,375,926	\$23,395,509	\$2,007,103,215
41	\$	_	\$	11,019,582	\$	_	\$		_	\$	12,820,441	\$23,840,023	\$2,030,943,238
42	\$	_	\$	11,019,582	\$	_	\$		_	\$	13,273,401	\$24,292,984	\$2,055,236,222
43	\$	_	\$	11,019,582	\$	_	\$		_	\$	13,734,968	\$24,754,550	\$2,079,990,772
44	\$	_	\$	11,019,582	\$	_	\$		_	\$	14,205,305	\$25,224,887	\$2,105,215,659
45	ς ,	_	ς ς	11,019,582	ς ,	_	ς ς		_	ς ς	14,684,577	\$25,704,160	\$2,130,919,819
46	¢	_	¢	11,019,582	¢	_	¢		_	¢	15,172,956	\$26,192,539	\$2,157,112,357
47	ب ذ		¢	11,019,582	Ċ	_	¢			¢	15,670,615	\$26,690,197	\$2,183,802,554
48	ر ک	_	ب خ	11,019,582	ر خ	_	ب خ		-	ب خ	16,177,728	\$20,090,197	\$2,210,999,865
49	ې د	-	ې د		ې د	-	ې خ		-	ې خ		\$27,714,060	\$2,238,713,924
	ې د	-	ې خ	11,019,582	ې د	-	ې د		-	ې خ	16,694,477		
50 E1	ې ۲	-	ې ۲	11,019,582	٠ ج	-	ې خ		-	ې خ	17,221,044 17,757,616	\$28,240,627	\$2,266,954,551
51 52	ې د	-	۲ ک	11,019,582	٠ ۲	-	ب		-	ې ک	17,757,616	\$28,777,199	\$2,295,731,750
52 52	ې خ	-	>	11,019,582	ب	-	۶ ک		-	۶ ۲	18,304,383	\$29,323,965	\$2,325,055,715
53	<u>۲</u>	-	\$ ^	11,019,582	\$ ^	-	<u>></u>		-	<u>></u>	18,861,538	\$29,881,121	\$2,354,936,836
54	\$ ^	-	\$ _	11,019,582	\$	-	\$ ^		-	\$ ^	19,429,280	\$30,448,862	\$2,385,385,697
55	\$ _	-	\$ 1	11,019,582	\$ •	-	\$ *		-	\$ ^	20,007,808	\$31,027,390	\$2,416,413,088
56	Ş ,	-	\$	11,019,582	\$	-	\$ _		-	\$	20,597,329	\$31,616,911	\$2,448,029,999
57	Ş ,	-	Ş 1	11,019,582	\$	-	\$ _		-	\$	21,198,050	\$32,217,632	\$2,480,247,631
58	Ş ,	-	\$	11,019,582	\$	-	\$ _		-	\$	21,810,185	\$32,829,767	\$2,513,077,398
59	\$	-	\$	11,019,582	\$	-	\$		-	\$	22,433,950	\$33,453,533	\$2,546,530,930

\$1,105,007,633

\$973,159,561

\$38,508,689

\$186,798,657

\$2,741,091,250

\$5,044,565,789



60	\$ -	\$	11,019,582	\$	-	\$ -	\$ 23,069,568	\$34,089,150	\$2,580,620,080
61	\$ -	\$	11,019,582	\$	-	\$ -	\$ 23,717,261	\$34,736,844	\$2,615,356,924
62	\$ -	\$	11,019,582	\$	-	\$ -	\$ 24,377,261	\$35,396,844	\$2,650,753,767
63	\$ -	\$	11,019,582	\$	-	\$ -	\$ 25,049,801	\$36,069,384	\$2,686,823,151
64	\$ -	\$	11,019,582	\$	-	\$ -	\$ 25,735,120	\$36,754,702	\$2,723,577,853
65	\$0	\$	11,019,582	\$	-	\$ -	\$ 26,433,459	\$37,453,041	\$2,761,030,894
66	\$0	\$	11,019,582	\$	-	\$ -	\$ 27,145,067	\$38,164,649	\$2,799,195,543
67	\$0	\$	11,019,582	\$	-	\$ -	\$ 27,870,195	\$38,889,777	\$2,838,085,321
68	\$0) \$	11,019,582	\$	-	\$ -	\$ 28,609,101	\$39,628,683	\$2,877,714,004
69	\$0	\$	11,019,582	\$	-	\$ -	\$ 29,362,046	\$40,381,628	\$2,918,095,632
70	\$0	\$	11,019,582	\$	-	\$ -	\$ 30,129,297	\$41,148,879	\$2,959,244,511
71	\$0	\$	11,019,582	\$	-	\$ -	\$ 30,911,126	\$41,930,708	\$3,001,175,219
72	\$0) \$	11,019,582	\$	-	\$ -	\$ 31,707,809	\$42,727,391	\$3,043,902,610
73	\$0) \$	11,019,582	\$	-	\$ -	\$ 32,519,629	\$43,539,212	\$3,087,441,822
74	\$0) \$	11,019,582	\$	-	\$ -	\$ 33,346,874	\$44,366,457	\$3,131,808,278
75	\$0) \$	11,019,582	\$	-	\$ -	\$ 34,189,837	\$45,209,419	\$3,177,017,698
76	\$0) \$	11,019,582	\$	-	\$ -	\$ 35,048,816	\$46,068,398	\$3,223,086,096
77	\$0	\$	11,019,582	\$	-	\$ -	\$ 35,924,116	\$46,943,698	\$3,270,029,794
78	\$0	\$	11,019,582	\$	-	\$ -	\$ 36,816,046	\$47,835,628	\$3,317,865,422
79	\$0	\$	11,019,582	\$	-	\$ -	\$ 37,724,923	\$48,744,505	\$3,366,609,927
80	\$0	\$	11,019,582	\$	-	\$ -	\$ 38,651,068	\$49,670,651	\$3,416,280,578
81	\$0	\$	11,019,582	\$	-	\$ -	\$ 39,594,811	\$50,614,393	\$3,466,894,971
82	\$0	\$	11,019,582	\$	-	\$ -	\$ 40,556,484	\$51,576,067	\$3,518,471,038
83	\$0	\$	11,019,582	\$	-	\$ -	\$ 41,536,430	\$52,556,012	\$3,571,027,049
84	\$0	\$	11,019,582	\$	-	\$ -	\$ 42,534,994	\$53,554,576	\$3,624,581,625
85	\$0) \$	11,019,582	\$	-	\$ -	\$ 43,552,531	\$54,572,113	\$3,679,153,738
86	\$0) \$	11,019,582	\$	-	\$ -	\$ 44,589,401	\$55,608,983	\$3,734,762,722
87	\$0) \$	11,019,582	\$	-	\$ -	\$ 45,645,972	\$56,665,554	\$3,791,428,275
88	\$0) \$	11,019,582	\$	-	\$ -	\$ 46,722,617	\$57,742,199	\$3,849,170,475
89	\$0) \$	11,019,582	\$	-	\$ -	\$ 47,819,719	\$58,839,301	\$3,908,009,776
90	\$0) \$	11,019,582	\$	-	\$ -	\$ 48,937,666	\$59,957,248	\$3,967,967,024
91				\$	-	\$ 42,500,000	\$ 193,134,933	\$235,634,933	\$4,203,601,956
92				\$	-	\$ 26,000,000	\$ 120,892,045	\$146,892,045	\$4,350,494,001
93				\$	-	\$ 39,432,886	\$ 187,583,743	\$227,016,629	\$4,577,510,630
94				\$	-	\$ 39,432,886	\$ 191,897,059	\$231,329,945	\$4,808,840,575
95				\$	-	\$ 39,432,886	\$ 196,292,328	\$235,725,214	\$5,044,565,789
96						\$ -	\$ -	\$0	\$5,044,565,789
97						\$ -	\$ -	\$0	\$5,044,565,789
98							\$ -	\$0	\$5,044,565,789
99							\$ -	\$0	\$5,044,565,789
100							\$ -	\$0	\$5,044,565,789
	Total		Total	Total		Total	Total		Total
	Design/Const		O&M	Cask Handlin	g	D&D	Escalation		Life Cycle
	4		4	400 =00 0		4	4		



STUDY 1 - ALTERNATIVE STORAGE SYSTEMS FOR DUAL PURPOSE CANISTERS

COST DETAILS

ALTERNATIVE 18 - C-BGV, PILOT, HIGH SEISMIC

LIFE CYCLE COST SUMMARIES



Total Costs

\$4,739,603,555

\$1,357,898,856

FASK ORDER NO. 16 – GENERIC DESIGN ALTERNATIVE

Interim Storage Facility

Pilot Storage Facility (5,000 MTU)

Project: C-BGV Pilot (5,000 MTU)

Life Cycle Costs (40 Year Life)

PILOT Project - C-BGV 60/40 Vertical/Horizontal - High Seismic

Separate CHB

Total Costs (80 Year Life)

Present Value

Annual Escalation Factor 1.90% **Discount Rate** 3.40%

Capital

Design & Construction	\$852,366,406	•	·	· ·		\$852,366,406	IVES
Operations & Maintenance (40 Year Life)	ψ032,300, 100	\$532,376,272				\$532,376,272	٠,
Cask Handling		\$38,508,689				\$38,508,689	、স
Transportation Equipment	\$0	430,300,003				\$0,500,005	70
Transport Operations	γo	\$0	\$0			\$0	
Repackaging	\$0	\$0 \$0	γo			\$0	~
Transport to Repository	\$0 \$0	γU	\$0			\$0) H
D&D	γU		Şθ	\$186,798,657		\$186,798,657	71
Escalation Second				7100,730,037	\$859,034,010	\$859,034,010	m
Esculation					\$655,054,010	\$653,054,010	Š
Total Costs (40 year Life)						\$2,469,084,034	ř CLÉ
Present Value						\$1,236,420,779	_
Life Cycle Costs (80 Year Life)	Capital	Operations	Transport	Decommissioning	Escalation	Total Costs	EL THE
Design & Construction	•	Operations	Transport	Decommissioning	Escalation		
_	\$852,366,406	¢072.150.561				\$852,366,406	
Operations & Maintenance (80 Year Life)		\$973,159,561				\$973,159,561	_
Cask Handling	ćo	\$38,508,689				\$38,508,689	Z
Transportation Equipment	\$0	40	40			\$0	0
Transport Operations	4.0	\$0	\$0			\$0	EZ
Repackaging	\$0	\$0				\$0	~
Transport to Repository	\$0		\$0			\$0	` ``
D&D				\$186,798,657		\$186,798,657	- 11
Escalation					\$2,688,770,242	\$2,688,770,242	? E

Operations

Transport

Decommissioning

Escalation



STUDY 1 - ALTERNATIVE STORAGE SYSTEMS FOR DUAL PURPOSE CANISTERS

COST DETAILS

ALTERNATIVE 18 - C-BGV, PILOT, HIGH SEISMIC

CAPITAL COST SUMMARY



Pilot Storage Facility (5,000 MTU)

Project: C-BGV Pilot (5,000 MTU)

PILOT Project - C-BGV 60/40 Vertical/Horizontal - High Seismic

Separate CHB

Level 3 Cost Summary - First of A kind module

Level 1 -BGV LE 01	Level 2	Level 3 Descrip	tion Storage Facility and transportation Project		Level 3 Total	
DOV LL OI	C-BGV LE 01.01	mem	Pilot ISF Facility \$521,570),637		
		C-BGV LE 01.01.01	Storage BGV LE s		\$	
		C-BGV LE 01.01.02	Cask Handling (Transfer) Facility		\$163,293,96	
		C-BGV LE 01.01.03	Horizontal Dry Storage Modules		\$	
		C-BGV LE 01.01.04	Vertical Dry Storage Module		\$197,137,51	
		C-BGV LE 01.01.05	Storage Cask Fabrication Facility		\$2,000,00	
		C-BGV LE 01.01.06	Cask Maintenance Facility		¢=,;;;;;	
		C-BGV LE 01.01.07	Concrete Batch Plant		\$1,850,00	
		C-BGV LE 01.01.08	Visitor Center/ Auditorium		, , , , , , , ,	
		C-BGV LE 01.01.09	Administration Building		\$3,140,00	
		C-BGV LE 01.01.10	Security		\$24,148,97	
		C-BGV LE 01.01.11	Rail Spur/ Receiving Yard		\$58,752,80	
		C-BGV LE 01.01.12	Utilities		\$18,682,15	
		C-BGV LE 01.01.13	Roads		\$18,212,73	
		C-BGV LE 01.01.14	Parking		\$735,00	
		C-BGV LE 01.01.15	Site Work		\$23,417,50	
		C-BGV LE 01.01.16	Warehouse		\$10,200,00	
		C-BGV LE 01.01.17	Maintenance Facility			
		C-BGV LE 01.01.18	Waste management Facility		•	
		C-BGV LE 01.01.01.xx	(Add Further Breakdown as needed)		9	
	C-BGV LE 01.02		Expanded Interim Storage Facility	\$0		
		C-BGV LE 01.02.01	Expanded Storage BGV LE s and Dry Cask Storage Systems	·	9	
		C-BGV LE 01.02.02	Expanded Cask Handling Facility (if required)			
		C-BGV LE 01.02.03	Horizontal Dry Storage Modules			
		C-BGV LE 01.02.04	Vertical Dry Storage Casks			
		C-BGV LE 01.02.05	Storage Cask Fabrication Facility (Expanded)			
		C-BGV LE 01.02.06	Cask Maintenance Facility (Expanded)			
		C-BGV LE 01.02.07	Concrete Batch Plant (Expanded if needed)			
		C-BGV LE 01.02.08	Visitor Center/ Auditorium (expanded if needed)			
		C-BGV LE 01.02.09	Administration Building (Expanded if needed)			
		C-BGV LE 01.02.10	Security (Expanded)			
		C-BGV LE 01.02.11	Rail Spur/ Receiving Yard (Expanded)			
		C-BGV LE 01.02.12	Utilities Expanded as needed)			
		C-BGV LE 01.02.13	Roads (Expanded)			
		C-BGV LE 01.02.14	Parking (Expanded as needed)			
		C-BGV LE 01.02.15	Site Work (Expanded)			
		C-BGV LE 01.02.16	Warehouse (Expanded if Needed)			
		C-BGV LE 01.02.17	Maintenance Facility (Expanded if needed)			
		C-BGV LE 01.02.17	Waste management Facility (Expanded if needed)			
		C-BGV LE 01.02.19	Hot Cell / Laboratories			
		C-BGV LE 01.02.20	Pool Packaging Facility			
		C-BGV LE 01.02.21	Standardized Storage System			
		C-BGV LE 01.02.21	Standardized Storage System Standardized Disposal Canister			
		C-BGV LE 01.02.22 C-BGV LE 01.02.23	Canister Repackaging Facility (For Repository			
	C-BGV LE 01.03	C-BGV LE 01.02.23	Transportation Equipment	\$0	•	
	C-BGV LE 01.03	C-BGV LE 01.03.01	Transportation Casks	ŞŪ	9	
		C-BGV LE 01.03.01	•			
			Rail Equipment		:	
		C-BGV LE 01.03.03 C-BGV LE 01.03.04	Rail Maintenance Facility Transportation Systems Services			
	C-BGV LE 01.04		Pre-Construction Capitalized Costs \$66,025	5,000		
		C-BGV LE 01.04.01	Land or Land Leases		\$7,680,0	
		C-BGV LE 01.04.02	Site permits		\$200,0	
		C-BGV LE 01.04.03	Site Licensing		\$6,240,0	
		C-BGV LE 01.04.05	Plant Permits			
		C-BGV LE 01.04.06	Planning and Alternative Studies		\$750,00	
		C-BGV LE 01.04.07	Research and Development		(

Project Total



		C-BGV LE 01.04.08 C-BGV LE 01.04.09		Design Other Pre-co	nstruc	tion Costs		\$23,955,000 \$17,200,000
		C-BGV LE 01.04.10		Pre-construc	tion co	ontingencies		\$10,000,000
		C-BGV LE 01.04.xx				down as needed)		\$0
C-BGV LI	E 01.05		Indirect	· : Capitalized C		,	\$63,180,000	·
		C-BGV LE 01.05.01		Project Mana		nt		\$2,700,000
		C-BGV LE 01.05.02		Construction	_			\$3,600,000
		C-BGV LE 01.05.03		Field indirect	servi	ces		\$11,880,000
		C-BGV LE 01.05.04		Design Service	es in s	support of Construction		\$5,400,000
		C-BGV LE 01.05.05		QA/QC				\$12,600,000
		C-BGV LE 01.05.06		Commissioni	ng and	d Startup		\$1,200,000
		C-BGV LE 01.05.07		Home office	Engine	eering support to Construction		\$7,200,000
		C-BGV LE 01.05.08		Document Co	ontrol			\$2,700,000
		C-BGV LE 01.05.09		Project Contr	rols			\$3,600,000
		C-BGV LE 01.05.10		Construction	Testir	ng		\$2,700,000
		C-BGV LE 01.05.11		Inspections				\$3,600,000
		C-BGV LE 01.05.12		Startup and 1	Γesting			\$3,000,000
		C-BGV LE 01.05.13		Commissioni				\$3,000,000
C-BGV LI	E 01.06		Site Sel	ection			\$0	
		C-BGV LE 01.06.01		Site Selection	ı			\$0
		C-BGV LE 01.06.02		Public Inform	nation	Process		\$0
C-BGV LI	E 01.07		Decont	amination and	d Deco	nstruction	\$0	
		C-BGV LE 01.07.01		Decommission	ning			\$0
		C-BGV LE 01.07.02		Decontamina	ation			\$0
		C-BGV LE 01.07.03		Deconstructi	on			\$0
		C-BGV LE 01.07.04						\$0
		C-BGV LE 01.07.05						\$0
C-BGV LI	E 01.08		Project	Financial Cost	ts		\$87,203,935	
		C-BGV LE 01.08.01	•	Contractor Fe				\$52,062,051
		C-BGV LE 01.08.02		Escalation Co	sts			\$35,141,884
		C-BGV LE 01.08.03		Interest Payn	nents			\$0
		C-BGV LE 01.08.04		Indirect costs	s to su	pport shipments to repository		\$0
		C-BGV LE 01.08.05						\$0
		C-BGV LE 01.08.xx		(Add Further	Break	down as needed)		\$0
C-BGV LI	E 01.09		Project	Contingencies	S	:	\$114,386,834	
		C-BGV LE 01.09.01		Management	t Rese	rve - Contractor Held		\$36,898,979
		C-BGV LE 01.09.02		Contingency	- DOE	held		\$77,487,855
C-BGV LI	E 01.10							
		C-BGV LE 01.10.01	Other D	irect Costs			\$0	
		C-BGV LE 01.10.02		DOE Project	Opera	tions		\$0
		C-BGV LE 01.10.03		DOE TM&E				\$0
		C-BGV LE 01.10.04		Host site Ope	eration	nal Costs Miscellaneous		\$0
		C-BGV LE 01.10.05		Miscellaneou	ıs ODC			\$0
C-BGV LI	E 01.11		Operati	onal Costs			0	
		C-BGV LE 01.11.01		Operations C				\$0
		C-BGV LE 01.11.02		Transportation				\$0
		C-BGV LE 01.11.03		Escalation (O	perati	ons/Transportation)		\$0
				-	EC	(All Direct & indirect Costs, MR	Eccalation)	\$774,878,551
					PC	(TEC plus Contingency, ODCs)	, Escalation)	\$852,366,406
						- '		•



STUDY 1 - ALTERNATIVE STORAGE SYSTEMS FOR DUAL PURPOSE CANISTERS

COST DETAILS

ALTERNATIVE 18 - C-BGV, PILOT, HIGH SEISMIC

LIFE CYCLE COST - 40 YEAR OPERATING LIFE



Discount Rate

\$ 2,469,084,034

Interim Storage Facility

Pilot Storage Facility (5,000 MTU)

Project: C-BGV Pilot (5,000 MTU)

PILOT Project - C-BGV 60/40 Vertical/Horizontal - High Seismic

Separate CHB

	_	116							Α	Annual Escalation			Disc	count Rate
40 Yea	r Op	erating life								1.90%				3.40%
YEAR	С	esign/Const		0&M	C	ask Handling		D&D		Escalation	Ar	nnual Expense		Cumulative
1	\$	10,000,000	\$	_	\$	-	\$	-	9	\$ 190,000	\$	10,190,000	\$	10,190,000
2	\$	10,000,000	\$	_	\$	-	\$	-	(\$ 383,610	\$	10,383,610	\$	20,573,610
3	\$	20,000,000	\$	_	\$	-	\$	-	(\$ 1,161,797	\$	21,161,797	\$	41,735,407
4	\$	20,000,000	\$	-	\$	-	\$	-	(\$ 1,563,871	\$	21,563,871	\$	63,299,279
5	\$	20,000,000	\$	-	\$	-	\$	-	(\$ 1,973,585	\$	21,973,585	\$	85,272,863
6	\$	20,000,000	\$	-	\$	-	\$	-	(\$ 2,391,083	\$	22,391,083	\$	107,663,946
7	\$	27,888,399	\$	-	\$	-	\$	-	(\$ 3,927,403	\$	31,815,802	\$	139,479,748
8	\$	200,000,000	\$	-	\$	-	\$	-	,	\$ 32,500,273	\$	232,500,273	\$	371,980,021
9	\$	200,000,000	\$	25,073,418	\$	-	\$	-	,	\$ 41,546,053	\$	266,619,471	\$	638,599,492
10	\$	324,478,007	\$	24,539,498	\$	-	\$	-	,	\$ 72,280,158	\$	421,297,663	\$	1,059,897,155
11			\$	25,012,938	\$	12,836,230	\$	-	,	\$ 8,706,478	\$	46,555,646	\$	1,106,452,802
12	\$	-	\$	25,012,938	\$	12,836,230	\$	-	,	\$ 9,591,036	\$	47,440,204	\$	1,153,893,006
13	\$	-	\$	25,012,938	\$	12,836,230	\$	-	,	\$ 10,492,400	\$	48,341,568	\$	1,202,234,573
14	\$	-	\$	11,019,582	\$	-	\$	-	,	\$ 3,322,219	\$	14,341,801	\$	1,216,576,375
15	\$	-	\$	11,019,582	\$	-	\$	-	,	\$ 3,594,713	\$	14,614,296	\$	1,231,190,670
16	\$	-	\$	11,019,582	Ş	-	\$	-	7	\$ 3,872,385	\$	14,891,967	\$	1,246,082,637
17	\$	-	\$ •	11,019,582	\$	-	\$	-	,	\$ 4,155,332	\$	15,174,915	\$ •	1,261,257,552
18	\$ \$	-	\$ \$	11,019,582	\$	-	\$ \$	-	,	\$ 4,443,656	\$	15,463,238	\$	1,276,720,790
19	\$ ¢	-	\$ ¢	11,019,582	\$ \$	-	\$ ¢	-		\$ 4,737,457	\$	15,757,040	\$ ¢	1,292,477,830
20	\$ ¢	-	\$ د	11,019,582	\$	-	\$ ¢	-		\$ 5,036,841	\$	16,056,423	\$ د	1,308,534,253
21 22	ې د	-	ې د	11,019,582	ې د	-	ې د	-		\$ 5,341,913	\$ ¢	16,361,495	ې د	1,324,895,748
23	ې د	-	ې د	11,019,582 11,019,582	ې د	-	ې د	-		\$ 5,652,782 \$ 5,969,556	\$ \$	16,672,364 16,989,139	ې د	1,341,568,112 1,358,557,251
23 24	ې د	-	ې د	11,019,582	ې د	_	ې د	-		\$ 6,292,350	۶ \$	17,311,932	ب خ	1,375,869,183
25	٠ ,	_	٠ ,	11,019,582	ب خ	_	٠ ,	_	,	\$ 6,621,277	۶ \$	17,511,932	ب خ	1,393,510,042
26	ς ς	_	ς ,	11,019,582	٠ \$	_	ς ,	_	,	\$ 6,956,453	\$	17,976,035	ب خ	1,411,486,077
27	ς ς	_	\$	11,019,582	\$	_	\$	_	•	\$ 7,297,998	\$	18,317,580	\$	1,429,803,657
28	\$	_	\$	11,019,582	\$	_	\$	_		\$ 7,646,032	\$	18,665,614	\$	1,448,469,271
29	\$	_	\$	11,019,582	\$	_	\$	_	•	\$ 8,000,678	\$	19,020,261	\$	1,467,489,532
30	\$	-	\$	11,019,582	\$	-	\$	-	•	\$ 8,362,063	\$	19,381,646	\$	1,486,871,178
31	\$	-	\$	11,019,582	\$	_	\$	-		\$ 8,730,315	\$	19,749,897	\$	1,506,621,075
32	\$	-	\$	11,019,582	\$	-	\$	-	(\$ 9,105,563	\$	20,125,145	\$	1,526,746,220
33	\$	-	\$	11,019,582	\$	-	\$	-	(\$ 9,487,941	\$	20,507,523	\$	1,547,253,742
34	\$	-	\$	11,019,582	\$	-	\$	-	(\$ 9,877,583	\$	20,897,166	\$	1,568,150,908
35	\$	-	\$	11,019,582	\$	-	\$	-	,	\$ 10,274,630	\$	21,294,212	\$	1,589,445,120
36	\$	-	\$	11,019,582	\$	-	\$	-		\$ 10,679,220	\$	21,698,802	\$	1,611,143,922
37	\$	-	\$	11,019,582	\$	-	\$	-	,	\$ 11,091,497	\$	22,111,079	\$	1,633,255,001
38	\$	-	\$	11,019,582	\$	-	\$	-	,	\$ 11,511,607	\$	22,531,190	\$	1,655,786,190
39	\$	-	\$	11,019,582	\$	-	\$	-	,	\$ 11,939,700	\$	22,959,282	\$	1,678,745,472
40	\$	-	\$	11,019,582	\$	-	\$	-	,	\$ 12,375,926	\$	23,395,509	\$	1,702,140,981
41	\$	-	\$	11,019,582	\$	-	\$	-	,	\$ 12,820,441	\$	23,840,023	\$	1,725,981,004
42	\$	-	\$	11,019,582	\$	-	\$	-	7	\$ 13,273,401	\$	24,292,984	\$	1,750,273,988
43	\$	-	\$ \$	11,019,582	\$	-	\$	-	,	\$ 13,734,968	\$	24,754,550	\$ \$	1,775,028,538
44	\$ ¢	-	\$ ¢	11,019,582	\$ \$	-	\$ ¢	-	,	\$ 14,205,305	\$ ¢	25,224,887	\$	1,800,253,425
45 46	ب خ	-	ب	11,019,582	>	-	>	-	,	\$ 14,684,577	>	25,704,160	>	1,825,957,584
46 47	ې د	-	ې د	11,019,582	ې د	-	ې د	-		\$ 15,172,956 \$ 15,670,615	ې د	26,192,539	ې د	1,852,150,123
48	ې د	-	ې د	11,019,582 11,019,582	ې د	-	ې د	-	,	\$ 15,070,013	ې د	26,690,197 27,197,311	ې د	1,878,840,320 1,906,037,630
49	٠ ,	_	٠ ,	11,019,582	ب خ	_	٠ ,	_	,	\$ 16,694,477	٠ ,	27,197,311	ب خ	1,933,751,690
50	ς ς	_	\$	11,019,582	\$	_	\$	_	•	\$ 17,221,044	\$	28,240,627	\$	1,961,992,317
51	\$	-	\$	-	\$	_	\$	42,500,000	•	\$ 68,487,052	\$	110,987,052	\$	2,072,979,368
52	\$	-	\$	-	\$	_	\$	26,000,000	9	\$ 43,188,022	\$	69,188,022	\$	2,142,167,390
53	\$	-	\$	-	\$	_	\$	39,432,886		\$ 67,494,835	\$	106,927,721	\$	2,249,095,111
54	\$	-	\$	-	\$	-	\$	39,432,886	(\$ 69,526,462	\$	108,959,348	\$	2,358,054,459
55	\$	-	\$	-	\$	-	\$	39,432,886	,	\$ 71,596,690	\$	111,029,575	\$	2,469,084,034
56	\$	-	\$	-	\$	-	\$	-	(\$ -	\$	-	\$	2,469,084,034
57	\$	-	\$	-	\$	-	\$	-	(\$ -	\$	-	\$	2,469,084,034
58	\$	-	\$	-	\$	-	\$	-	,	\$ -	\$	-	\$	2,469,084,034
59	\$	-	\$	-	\$	-	\$	-	(-	\$	-	\$	2,469,084,034
60	\$	-	\$	-	\$	-	\$	-	,	\$ -	\$	-	\$	2,469,084,034
		Total		Total				Total		Total				Total
		Design/Const		0&M		29 EN9 690		D&D 186 798 657		Escalation				Life Cycle
		XL / JLL /INC	Ċ	521216777	C	JO FUO FOU	C	186 /UU 6E7						, n_0 1 10/1 113/1

Annual Escalation

\$ 852,366,406 \$ 532,376,272 \$ 38,508,689 \$ 186,798,657 \$ 859,034,010



STUDY 1 - ALTERNATIVE STORAGE SYSTEMS FOR DUAL PURPOSE CANISTERS

COST DETAILS

ALTERNATIVE 18 - C-BGV, PILOT, HIGH SEISMIC

LIFE CYCLE COST - 80 YEAR OPERATING LIFE



Pilot Storage Facility (5,000 MTU)

Project: C-BGV Pilot (5,000 MTU)

PILOT Project - C-BGV 60/40 Vertical/Horizontal - High Seismic

Separate CHB

80 Year Operating Life

80 Yea	r Operating Life			Annual Escalation			Discount Rate			
								1.90%		3.40%
									Annual	
YEAR	Design/Const		O&M	Cask Handling		D&D		Escalation	Expense	Cumulative
1	\$ 10,000,000	\$	-	\$	- \$	-	\$	190,000	\$10,190,000	\$10,190,000
2	\$ 10,000,000	\$	-	\$	- \$	-	\$	383,610	\$10,383,610	\$20,573,610
3	\$ 20,000,000	\$	-	\$	- \$	-	\$	1,161,797	\$21,161,797	\$41,735,407
4	\$ 20,000,000	\$	-	\$	- \$	-	\$	1,563,871	\$21,563,871	\$63,299,279
5	\$ 20,000,000	\$	-	\$	- \$	-	\$	1,973,585	\$21,973,585	\$85,272,863
6	\$ 20,000,000	\$	-	\$	- \$	-	\$	2,391,083	\$22,391,083	\$107,663,946
7	\$ 27,888,399	\$	-	\$	- \$	-	\$	3,927,403	\$31,815,802	\$139,479,748
8	\$ 200,000,000	\$	-	\$	- \$	-	\$	32,500,273	\$232,500,273	\$371,980,021
9	\$ 200,000,000	\$	25,073,418	\$	- \$	-	\$	41,546,053	\$266,619,471	\$638,599,492
10	\$ 324,478,007	\$	24,539,498	\$	- \$	-	\$	72,280,158	\$421,297,663	\$1,059,897,155
11	1	\$	25,012,938	\$ 12,836,230	-	-	· \$	8,706,478	\$46,555,646	\$1,106,452,802
12	\$ -	\$	25,012,938	\$ 12,836,230		-	\$	9,591,036	\$47,440,204	\$1,153,893,006
13	\$ -	\$	25,012,938	\$ 12,836,230		-	\$	10,492,400	\$48,341,568	\$1,202,234,573
14	\$ -	\$	11,019,582	\$	- \$	-	\$	3,322,219	\$14,341,801	\$1,216,576,375
15	\$ -	\$	11,019,582	\$	- \$	-	` \$	3,594,713	\$14,614,296	\$1,231,190,670
16	\$ -	\$	11,019,582	\$	- \$	-	\$	3,872,385	\$14,891,967	\$1,246,082,637
17	\$ -	\$	11,019,582	\$	- \$	-	, \$	4,155,332	\$15,174,915	\$1,261,257,552
18	\$ -	\$	11,019,582	\$	- \$	-	\$	4,443,656	\$15,463,238	\$1,276,720,790
19	\$ -	\$	11,019,582	\$	- > c	-	· >	4,737,457	\$15,757,040	\$1,292,477,830
20	\$ -	\$	11,019,582	\$	- > -	-	\$	5,036,841	\$16,056,423	\$1,308,534,253
21	\$ -	\$	11,019,582	\$	- > -	-	, > ,	5,341,913	\$16,361,495	\$1,324,895,748
22	\$ -	\$	11,019,582	\$	- > -	-	, > ,	5,652,782	\$16,672,364	\$1,341,568,112
23 24	۶ - د	\$	11,019,582	Ş ç	- >	-	, > ,	5,969,556	\$16,989,139	\$1,358,557,251
2 4 25	۶ - د	ې د	11,019,582	ې د	- ၃ င	-	, , ,	6,292,350 6,631,377	\$17,311,932	\$1,375,869,183
25 26	۶ - د	ې د	11,019,582 11,019,582	ې د	- ၃ င	-	, , ,	6,621,277 6,956,453	\$17,640,859 \$17,976,035	\$1,393,510,042 \$1,411,486,077
27	- د -	ې د	11,019,582	۶ \$	-	_	د	7,297,998	\$17,970,033	\$1,429,803,657
28	- د -	ς ς	11,019,582	\$ \$	- , -	_	, ¢	7,646,032	\$18,665,614	\$1,448,469,271
29	\$ \$ -	\$	11,019,582	ς ς	- Ś	_	, ç	8,000,678	\$19,020,261	\$1,467,489,532
30	\$ -	\$	11,019,582	\$	- Ś	_	, \$	8,362,063	\$19,381,646	\$1,486,871,178
31	\$ -	\$	11,019,582	\$	- Ś	_	, \$	8,730,315	\$19,749,897	\$1,506,621,075
32	\$ -	\$	11,019,582	\$	- \$	_	\$	9,105,563	\$20,125,145	\$1,526,746,220
33	\$ -	\$	11,019,582	\$	- \$	-	· \$	9,487,941	\$20,507,523	\$1,547,253,742
34	\$ -	\$	11,019,582	\$	- \$	-	· \$	9,877,583	\$20,897,166	\$1,568,150,908
35	\$ -	\$	11,019,582	\$	- \$	_	\$	10,274,630	\$21,294,212	\$1,589,445,120
36	, \$ -	\$	11,019,582	\$	- \$	_	\$	10,679,220	\$21,698,802	\$1,611,143,922
37	, \$ -	\$	11,019,582	\$	- \$	_	\$	11,091,497	\$22,111,079	\$1,633,255,001
38	\$ -	\$	11,019,582	\$	- \$	-	\$	11,511,607	\$22,531,190	\$1,655,786,190
39	\$ -	\$	11,019,582	\$	- \$	-	\$	11,939,700	\$22,959,282	\$1,678,745,472
40	\$ -	\$	11,019,582	\$	- \$	-	\$	12,375,926	\$23,395,509	\$1,702,140,981
41	\$ -	\$	11,019,582	\$	- \$	-	\$	12,820,441	\$23,840,023	\$1,725,981,004
42	\$ -	\$	11,019,582	\$	- \$	-	\$	13,273,401	\$24,292,984	\$1,750,273,988
43	\$ -	\$	11,019,582	\$	- \$	-	\$	13,734,968	\$24,754,550	\$1,775,028,538
44	\$ -	\$	11,019,582	\$	- \$	-	\$	14,205,305	\$25,224,887	\$1,800,253,425
45	\$ -	\$	11,019,582	\$	- \$	-	\$	14,684,577	\$25,704,160	\$1,825,957,584
46	\$ -	\$	11,019,582	\$	- \$	-	\$	15,172,956	\$26,192,539	\$1,852,150,123
47	\$ -	\$	11,019,582	\$	- \$	-	\$	15,670,615	\$26,690,197	\$1,878,840,320
48	\$ -	\$	11,019,582	\$	- \$	-	\$	16,177,728	\$27,197,311	\$1,906,037,630
49	\$ -	\$	11,019,582	\$	- \$	-	\$	16,694,477	\$27,714,060	\$1,933,751,690
50	\$ -	\$	11,019,582	\$	- \$	-	\$	17,221,044	\$28,240,627	\$1,961,992,317
51	\$ -	\$	11,019,582	\$	- \$	-	\$	17,757,616	\$28,777,199	\$1,990,769,515
52	\$ -	\$	11,019,582	\$	- \$	-	\$	18,304,383	\$29,323,965	\$2,020,093,480
53	\$ -	\$	11,019,582	\$	- \$	-	\$	18,861,538	\$29,881,121	\$2,049,974,601
54	\$ -	\$	11,019,582	\$	- \$	-	\$	19,429,280	\$30,448,862	\$2,080,423,463
55	\$ -	\$	11,019,582	\$	- \$	-	\$	20,007,808	\$31,027,390	\$2,111,450,853
56	\$ -	\$	11,019,582	\$	- \$	-	\$	20,597,329	\$31,616,911	\$2,143,067,764
57	\$ -	\$	11,019,582	\$	- \$	-	\$	21,198,050	\$32,217,632	\$2,175,285,396
58	\$ -	\$	11,019,582	\$	- \$	-	\$	21,810,185	\$32,829,767	\$2,208,115,163

\$852,366,406

\$973,159,561



59	\$	-	\$ 11,019,582	\$	-	\$ -	\$ 22,433,950	\$33,453,533	\$2,241,568,696
60	\$	-	\$ 11,019,582	\$	-	\$ -	\$ 23,069,568	\$34,089,150	\$2,275,657,846
61	\$	-	\$ 11,019,582	\$	-	\$ -	\$ 23,717,261	\$34,736,844	\$2,310,394,689
62	\$	-	\$ 11,019,582	\$	-	\$ -	\$ 24,377,261	\$35,396,844	\$2,345,791,533
63	\$	-	\$ 11,019,582	\$	-	\$ -	\$ 25,049,801	\$36,069,384	\$2,381,860,916
64	\$	-	\$ 11,019,582	\$	-	\$ -	\$ 25,735,120	\$36,754,702	\$2,418,615,618
65		\$0	\$ 11,019,582	\$	-	\$ -	\$ 26,433,459	\$37,453,041	\$2,456,068,660
66		\$0	\$ 11,019,582	\$	-	\$ -	\$ 27,145,067	\$38,164,649	\$2,494,233,309
67		\$0	\$ 11,019,582	\$	-	\$ -	\$ 27,870,195	\$38,889,777	\$2,533,123,086
68		\$0	\$ 11,019,582	\$	-	\$ -	\$ 28,609,101	\$39,628,683	\$2,572,751,769
69		\$0	\$ 11,019,582	\$	-	\$ -	\$ 29,362,046	\$40,381,628	\$2,613,133,398
70		\$0	\$ 11,019,582	\$	-	\$ -	\$ 30,129,297	\$41,148,879	\$2,654,282,277
71		\$0	\$ 11,019,582	\$	-	\$ -	\$ 30,911,126	\$41,930,708	\$2,696,212,984
72		\$0	\$ 11,019,582	\$	-	\$ -	\$ 31,707,809	\$42,727,391	\$2,738,940,376
73		\$0	\$ 11,019,582	\$	-	\$ -	\$ 32,519,629	\$43,539,212	\$2,782,479,587
74		\$0	\$ 11,019,582	\$	-	\$ -	\$ 33,346,874	\$44,366,457	\$2,826,846,044
75		\$0	\$ 11,019,582	\$	-	\$ -	\$ 34,189,837	\$45,209,419	\$2,872,055,463
76		\$0	\$ 11,019,582	\$	-	\$ -	\$ 35,048,816	\$46,068,398	\$2,918,123,862
77		\$0	\$ 11,019,582	\$	-	\$ -	\$ 35,924,116	\$46,943,698	\$2,965,067,560
78		\$0	\$ 11,019,582	\$	-	\$ -	\$ 36,816,046	\$47,835,628	\$3,012,903,188
79		\$0	\$ 11,019,582	\$	-	\$ -	\$ 37,724,923	\$48,744,505	\$3,061,647,693
80		\$0	\$ 11,019,582	\$	-	\$ -	\$ 38,651,068	\$49,670,651	\$3,111,318,344
81		\$0	\$ 11,019,582	\$	-	\$ -	\$ 39,594,811	\$50,614,393	\$3,161,932,737
82		\$0	\$ 11,019,582	\$	-	\$ -	\$ 40,556,484	\$51,576,067	\$3,213,508,803
83		\$0	\$ 11,019,582	\$	-	\$ -	\$ 41,536,430	\$52,556,012	\$3,266,064,815
84		\$0	\$ 11,019,582	\$	-	\$ -	\$ 42,534,994	\$53,554,576	\$3,319,619,391
85		\$0	\$ 11,019,582	\$	-	\$ -	\$ 43,552,531	\$54,572,113	\$3,374,191,504
86		\$0	\$ 11,019,582	\$	-	\$ -	\$ 44,589,401	\$55,608,983	\$3,429,800,487
87		\$0	\$ 11,019,582	\$	-	\$ -	\$ 45,645,972	\$56,665,554	\$3,486,466,041
88		\$0	\$ 11,019,582	\$	-	\$ -	\$ 46,722,617	\$57,742,199	\$3,544,208,240
89		\$0	\$ 11,019,582	\$	-	\$ -	\$ 47,819,719	\$58,839,301	\$3,603,047,541
90		\$0	\$ 11,019,582	\$	-	\$ -	\$ 48,937,666	\$59,957,248	\$3,663,004,789
91				\$	-	\$ 42,500,000	\$ 193,134,933	\$235,634,933	\$3,898,639,722
92				\$	-	\$ 26,000,000	\$ 120,892,045	\$146,892,045	\$4,045,531,767
93				\$	-	\$ 39,432,886	\$ 187,583,743	\$227,016,629	\$4,272,548,396
94				\$	-	\$ 39,432,886	\$ 191,897,059	\$231,329,945	\$4,503,878,341
95				\$	-	\$ 39,432,886	\$ 196,292,328	\$235,725,214	\$4,739,603,555
96						\$ -	\$ -	\$0	\$4,739,603,555
97						\$ -	\$ -	\$0	\$4,739,603,555
98							\$ -	\$0	\$4,739,603,555
99							\$ -	\$0	\$4,739,603,555
100							\$ -	\$0	\$4,739,603,555
	Total		Total	Total		Total	Total		Total
	Design/Co	onst	O&M	Cask Hand	dling	D&D	Escalation		Life Cycle
	¢ora ad	6 400	¢072.150.561	¢20 F0	0.000	106 700 CE7	¢2 600 770 242		¢4.720.602.EEE

\$186,798,657

\$38,508,689

\$2,688,770,242

\$4,739,603,555



STUDY 1 - ALTERNATIVE STORAGE SYSTEMS FOR DUAL PURPOSE CANISTERS

COST DETAILS

ALTERNATIVE 19 - C-BGV, EXPANDED, LOW SEISMIC

LIFE CYCLE COST SUMMARIES



Interim Storage Facility

Interim Storage Facility Expanded Storage Facility (10,000 MTU)	CB&I FEDERAL SERVICES LLC						TASK ORD
Project: C-BGV Pilot (10,000 MTU) Expanded Project - C-BGV 60/40 Vertical/Horizontal - Low Seismic Separate CHB	Interim Storage Facility						m R Z
Project: C-BGV Pilot (10,000 MTU) Expanded Project - C-BGV 60/40 Vertical/Horizontal - Low Seismic Separate CHB	Expanded Storage Facility (10,000 MTU)). 16 –
Operations & Maintenance (40 Year Life) \$532,376,272 \$532,376,272 \$77,017,378	Project: C-BGV Pilot (10,000 MTU)						GENE
Operations & Maintenance (40 Year Life) \$532,376,272 \$532,376,272 \$532,376,272 \$77,017,378	· · · · · · · · · · · · · · · · · · ·	orizontal - Low Seismio	С				RICDE
Operations & Maintenance (40 Year Life) \$532,376,272 \$532,376,272 \$532,376,272 \$77,017,378	•	1.90%					SIG
Operations & Maintenance (40 Year Life) \$532,376,272 \$532,376,272 \$532,376,272 \$77,017,378	Discount Rate	3.40%					V ALTE
Operations & Maintenance (40 Year Life) \$532,376,272 \$532,376,272 \$532,376,272 \$77,017,378	Life Cycle Costs (40 Year Life)	Capital	Operations	Transport	Decommissioning	Escalation	Total Costs 4
Operations & Maintenance (40 Year Life) \$532,376,272 \$532,376,272 \$532,376,272 \$77,017,378	• • • • • • • • • • • • • • • • • • • •	•	-		0		\$1,055,127,425
Cask Handling \$77,017,378	Operations & Maintenance (40 Year Life)		\$532,376,272				
Transportation Equipment \$0 \$	Cask Handling		\$77,017,378				\$77,017,378
Transport Operations	Transportation Equipment	\$0					\$0 %
Repackaging \$0	Transport Operations		\$0	\$0			<i>\$0</i> \vec{q}
Transport to Repository \$0	Repackaging	\$0	\$0				\$0 👸
D&D \$232,088,625	Transport to Repository	\$0		\$0			<i>\$0</i> 💆
Escalation	D&D				\$232,088,625		\$232,088,625 🗒
Total Costs (40 year Life)	Escalation					\$992,027,528	\$992,027,528 ^E
Present Value Life Cycle Costs (80 Year Life) Design & Construction Operations & Maintenance (80 Year Life) Cask Handling Transport ation Equipment Transport Operations Repackaging Transport to Repository S1,463,309,163 Pransport Transport Decommissioning Escalation Total Costs \$1,055,127,425 \$973,159,561 \$973,159,561 \$977,017,378 \$777,017,378 \$977,01	Total Costs (40 year Life)						\$2,888,637,228 P
Life Cycle Costs (80 Year Life) Design & Construction Operations & Maintenance (80 Year Life) Cask Handling Transport ation Equipment Transport Operations Repackaging Transport to Repository Capital Operations Transport Decommissioning Final Costs \$1,055,127,425 \$973,159,561 \$77,017,378 \$77,017,378 \$77,017,378 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	Present Value						\$1,463,309,163
Design & Construction \$1,055,127,425 \$1,055,127,425 \$973,159,561	Life Cycle Costs (80 Year Life)	Capital	Operations	Transport	Decommissioning	Escalation	Total Costs 류
Operations & Maintenance (80 Year Life) \$973,159,561 <td>• • • • • • • • • • • • • • • • • • • •</td> <td>•</td> <td>•</td> <td>·</td> <td>· ·</td> <td></td> <td>\$1,055,127,425</td>	• • • • • • • • • • • • • • • • • • • •	•	•	·	· ·		\$1,055,127,425
Cask Handling \$77,017,378 \$77,017,378 Transportation Equipment \$0 \$0 Transport Operations \$0 \$0 Repackaging \$0 \$0 Transport to Repository \$0 \$0	_	. , , ,	\$973,159,561				\$973,159,561
Transportation Equipment \$0 \$1 \$0 \$1 \$0 \$1 \$0 \$1 \$0 \$1 \$0 \$1 \$1 \$0 \$1 \$1 \$1 \$1 \$1 \$1 \$1 \$1 \$1 \$1 \$1 \$1 \$1	· · · · · · · · · · · · · · · · · · ·						\$77,017,378
Transport Operations \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0	5	\$0	. , , -				\$0 H
Repackaging \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0	·	• -	\$0	\$0			\$0 H
Transport to Repository \$0 \$0 \$0	·	\$0		, -			\$0 H
		-	·	\$0			\$0 \$

\$232,088,625

\$2,960,716,843

Total Costs (80 Year Life)

Present Value

D&D

Escalation

\$5,298,109,831 \$1,575,597,115

\$232,088,625

\$2,960,716,843



STUDY 1 - ALTERNATIVE STORAGE SYSTEMS FOR DUAL PURPOSE CANISTERS

COST DETAILS

ALTERNATIVE 19 - C-BGV, EXPANDED, LOW SEISMIC

CAPITAL COST SUMMARY



Expanded Storage Facility (10,000 MTU)

Project: C-BGV Pilot (10,000 MTU)

Expanded Project - C-BGV 60/40 Vertical/Horizontal - Low Seismic

Separate CHB

Level 1	Level 2	Level 3 Descri	ption	Level 3 Tota
BGV EX 01		Interi	m Storage Facility and transportation Project	
	C-BGV EX 01.01		Pilot ISF Facility \$471,712,636	
		C-BGV EX 01.01.01	Storago PGVs	
		C-BGV EX 01.01.01	Storage BGVs Cask Handling (Transfer) Facility	\$135,175,
		C-BGV EX 01.01.02		Ģ133,173,
			Horizontal Dry Storage Modules	Ć47E 207
		C-BGV EX 01.01.04	Vertical Dry Storage Module	\$175,397,
		C-BGV EX 01.01.05	Storage Cask Fabrication Facility	\$2,000,
		C-BGV EX 01.01.06	Cask Maintenance Facility	4
		C-BGV EX 01.01.07	Concrete Batch Plant	\$1,850,
		C-BGV EX 01.01.08	Visitor Center/ Auditorium	
		C-BGV EX 01.01.09	Administration Building	\$3,140,
		C-BGV EX 01.01.10	Security	\$24,148,
		C-BGV EX 01.01.11	Rail Spur/ Receiving Yard	\$58,752,
		C-BGV EX 01.01.12	Utilities	\$18,682,
		C-BGV EX 01.01.13	Roads	\$18,212,
		C-BGV EX 01.01.14	Parking	\$735 ,
		C-BGV EX 01.01.15	Site Work	\$23,417,
		C-BGV EX 01.01.16	Warehouse	\$10,200,
		C-BGV EX 01.01.17	Maintenance Facility	
		C-BGV EX 01.01.18	Waste management Facility	
		C-BGV EX	,	
		01.01.01.xx	(Add Further Breakdown as needed)	
	C DCV EV 04 03		Forman de di Interviero Change e Facilità	
	C-BGV EX 01.02	0.001/51/04/00/04	Expanded Interim Storage Facility \$204,664,585	
		C-BGV EX 01.02.01	Expanded Storage BGVs and Dry Cask Storage Systems	
		C-BGV EX 01.02.02	Expanded Cask Handling Facility (if required)	
		C-BGV EX 01.02.03	Horizontal Dry Storage Modules	
		C-BGV EX 01.02.04	Vertical Dry Storage Casks	\$177,397,
		C-BGV EX 01.02.05	Storage Cask Fabrication Facility (Expanded)	
		C-BGV EX 01.02.06	Cask Maintenance Facility (Expanded)	
		C-BGV EX 01.02.07	Concrete Batch Plant (Expanded if needed)	\$1,850 ,
		C-BGV EX 01.02.08	Visitor Center/ Auditorium (expanded if needed)	\$745,
		C-BGV EX 01.02.09	Administration Building (Expanded if needed)	
		C-BGV EX 01.02.10	Security (Expanded)	\$10,074,
		C-BGV EX 01.02.11	Rail Spur/ Receiving Yard (Expanded)	
		C-BGV EX 01.02.12	Utilities Expanded as needed)	\$3,624,
		C-BGV EX 01.02.13	Roads (Expanded)	\$83,
		C-BGV EX 01.02.14	Parking (Expanded as needed)	, ,
		C-BGV EX 01.02.15	Site Work (Expanded)	\$10,890,
		C-BGV EX 01.02.16	Warehouse (Expanded if Needed)	710,030 ,
		C-BGV EX 01.02.17	Maintenance Facility (Expanded if needed)	
		C-BGV EX 01.02.18	Waste management Facility (Expanded if needed)	
		C-BGV EX 01.02.19	Hot Cell / Laboratories	
		C-BGV EX 01.02.20	Pool Packaging Facility	
		C-BGV EX 01.02.21	Standardized Storage System	
		C-BGV EX 01.02.22	Standardized Disposal Canister	
		C-BGV EX 01.02.23	Canister Repackaging Facility (For Repository	
	C-BGV EX 01.03		Transportation Equipment \$0	
		C-BGV EX 01.03.01	Transportation Casks	
		C-BGV EX 01.03.02	Rail Equipment	
		C-BGV EX 01.03.03 C-BGV EX 01.03.04	Rail Maintenance Facility Transportation Systems Services	
	0 P01/-1/07	C DG V LA 01.03.04		
	C-BGV EX 01.04	0 DOMEN 21 2 2 2 2	Pre-Construction Capitalized Costs \$66,025,000	*-
		C-BGV EX 01.04.01	Land or Land Leases	\$7,680 <i>,</i>
		C-BGV EX 01.04.02	Site permits	\$200,
		C-BGV EX 01.04.03	Site Licensing	\$6,240,
		C-BGV EX 01.04.05	Plant Permits	
		C-BGV EX 01.04.06	Planning and Alternative Studies	\$750,



0 DOV EV 04 04	December 1 December 1	^
C-BGV EX 01.04.	·	\$0
C-BGV EX 01.04.0	· · · · · · · · · · · · · · · · · · ·	\$23,955,000
C-BGV EX 01.04.		\$17,200,000
C-BGV EX 01.04.	<u> </u>	\$10,000,000
C-BGV EX 01.04.	•	\$0
C-BGV EX 01.05	Indirect Capitalized Costs \$63,180,000	42 700 000
C-BGV EX 01.05.		\$2,700,000
C-BGV EX 01.05.	G	\$3,600,000
C-BGV EX 01.05.0		\$11,880,000
C-BGV EX 01.05.		\$5,400,000
C-BGV EX 01.05.0		\$12,600,000
C-BGV EX 01.05.		\$1,200,000
C-BGV EX 01.05.0	3 3	\$7,200,000
C-BGV EX 01.05.		\$2,700,000
C-BGV EX 01.05.	•	\$3,600,000
C-BGV EX 01.05.	<u> </u>	\$2,700,000
C-BGV EX 01.05.	•	\$3,600,000
C-BGV EX 01.05.	,	\$3,000,000
C-BGV EX 01.05.		\$3,000,000
C-BGV EX 01.06	Site Selection \$0	
C-BGV EX 01.06.0		\$0
C-BGV EX 01.06.		\$0
C-BGV EX 01.07	Decontamination and Deconstruction \$0	
C-BGV EX 01.07.	5	\$0
C-BGV EX 01.07.		\$0
C-BGV EX 01.07.0		\$0
C-BGV EX 01.07.		\$0
C-BGV EX 01.07.		\$0
C-BGV EX 01.08	Project Financial Costs \$107,948,018	
C-BGV EX 01.08.0		\$64,446,578
C-BGV EX 01.08.		\$43,501,440
C-BGV EX 01.08.0	•	\$0
C-BGV EX 01.08.0		\$0
C-BGV EX 01.08.0		\$0
C-BGV EX 01.08.	(Add Further Breakdown as needed)	\$0
C-BGV EX 01.09	Project Contingencies \$141,597,187	
C-BGV EX 01.09.		\$45,676,512
C-BGV EX 01.09.	Contingency - DOE held	\$95,920,675
C-BGV EX 01.10		
C-BGV EX 01.10.	·	
C-BGV EX 01.10.	·	\$0
C-BGV EX 01.10.		\$0
C-BGV EX 01.10.	•	\$0
C-BGV EX 01.10.	Miscellaneous ODC	\$0
	-	
C-BGV EX 01.11	Operational Costs 0	4
C-BGV EX 01.11.	•	\$0 \$0
C-BGV EX 01.11.	•	\$0 \$0
C-BGV EX 01.11.	Escalation (Operations/Transportation)	\$0

Project Total

	(All Direct & indirect Costs, MR,	
TEC	Escalation)	\$959,206,750
TPC	(TEC plus Contingency, ODCs)	\$1,055,127,425
	All Capitol, Operation, Transportation,	
LCC	Escalation	\$1,055,127,425



STUDY 1 - ALTERNATIVE STORAGE SYSTEMS FOR DUAL PURPOSE CANISTERS

COST DETAILS

ALTERNATIVE 19 - C-BGV, EXPANDED, LOW SEISMIC

LIFE CYCLE COST - 40 YEAR OPERATING LIFE



Discount Rate

\$ 2,888,637,228

Interim Storage Facility

Expanded Storage Facility (10,000 MTU)

Project: C-BGV Pilot (10,000 MTU)

Expanded Project - C-BGV 60/40 Vertical/Horizontal - Low Seismic

Separate CHB

									Ann	ual Escalation			Dis	count Rate
40 Yea	r Op	erating life								1.90%				3.40%
VEAD		Dosign/Const		O&M	_	ask Handling		D&D		Escalation	۸۵	nual Expense		Cumulative
YEAR		Design/Const	۲.	UQIVI	ر ,	ask Handling	۲.	טאַט	۲			•	۲.	
1	\$	10,000,000	\$	-	<u>٠</u>	-	\$	-	\$	190,000	\$	10,190,000	\$	10,190,000
2	\$	10,000,000	\$ \$	-	\$	-	\$	-	\$ \$	383,610	\$	10,383,610	\$	20,573,610
3	\$	20,000,000	\$	-	\$	-	\$	-	\$	1,161,797	\$	21,161,797	\$	41,735,407
4	\$	20,000,000	\$	-	\$	-	\$	-	\$	1,563,871	\$	21,563,871	\$	63,299,279
5	\$	20,000,000	\$	-	\$	-	\$	-	\$	1,973,585	\$	21,973,585	\$	85,272,863
6	\$	20,000,000	\$	-	\$	-	Ş	-	\$	2,391,083	\$	22,391,083	\$	107,663,946
7	\$	27,888,399	\$	-	\$	-	\$	-	\$	3,927,403	\$	31,815,802	\$	139,479,748
8	\$	200,000,000	\$	-	\$	-	\$	-	\$	32,500,273	\$	232,500,273	\$	371,980,021
9	\$	200,000,000	\$	25,073,418	\$	-	\$	-	\$	41,546,053	\$	266,619,471	\$	638,599,492
10	\$	527,239,026	\$	24,539,498	\$	-	\$	-	\$	114,271,170	\$	666,049,694	\$	1,304,649,187
11			\$	25,012,938	\$	12,836,230	\$	-	\$	8,706,478	\$	46,555,646	\$	1,351,204,833
12	\$	-	\$	25,012,938	\$	12,836,230	\$	-	\$	9,591,036	\$	47,440,204	\$	1,398,645,037
13	\$	-	\$	25,012,938	\$	12,836,230	\$	-	\$	10,492,400	\$	48,341,568	\$	1,446,986,604
14	\$	-	\$	11,019,582	\$	12,836,230	\$	-	\$	7,192,127	\$	31,047,939	\$	1,478,034,543
15	\$	-	\$	11,019,582	\$	12,836,230	\$	-	\$	7,782,038	\$	31,637,850	\$	1,509,672,393
16	\$	-	\$	11,019,582	\$	12,836,230	\$	_	\$	8,383,157	\$	32,238,969	\$	1,541,911,362
17	\$	_	\$	11,019,582	\$	-	\$	_	\$	4,155,332	\$	15,174,915	\$	1,557,086,277
18	\$	-	\$	11,019,582	\$	-	\$	-	\$	4,443,656	\$	15,463,238	\$	1,572,549,515
19	Ś	_	Ś	11,019,582	Ś	_	Ś	_	Ś	4,737,457	\$	15,757,040	\$	1,588,306,554
20	\$	_	\$	11,019,582	\$	_	\$	_	\$	5,036,841	\$	16,056,423	\$	1,604,362,978
21	ς .	_	\$	11,019,582	ς ,	_	\$	_	ς .	5,341,913	\$	16,361,495	ς ,	1,620,724,473
22	¢	_	¢	11,019,582	ç	_	¢	_	ç	5,652,782	\$	16,672,364	¢	1,637,396,837
23	ې د	_	ب خ	11,019,582	ې د	_	ې د	_	ر د	5,969,556		16,989,139	ې د	
	ې د	-	ب خ		ې خ	-	ې خ	-	ې د		\$		ې خ	1,654,385,976
24	۶ ک	-	Ş	11,019,582	, ,	-	Ş	-	۶ خ	6,292,350	\$	17,311,932	Ş	1,671,697,908
25	\$ \$	-	\$ \$	11,019,582	\$	-	\$ \$	-	\$ \$	6,621,277	\$	17,640,859	\$ \$	1,689,338,767
26	\$ \$	-	\$ \$	11,019,582	\$	-	\$	-	\$ \$	6,956,453	\$	17,976,035	\$	1,707,314,802
27	\$ \$	-	\$	11,019,582	\$ \$	-	\$	-	\$ \$	7,297,998	\$	18,317,580	\$	1,725,632,382
28	\$	-	\$	11,019,582	\$	-	\$	-	\$	7,646,032	\$	18,665,614	\$	1,744,297,996
29	\$	-	\$	11,019,582	\$	-	\$	-	\$	8,000,678	\$	19,020,261	\$	1,763,318,257
30	\$	-	\$	11,019,582	\$	-	\$	-	\$	8,362,063	\$	19,381,646	\$	1,782,699,903
31	\$	-	\$	11,019,582	\$	-	\$	-	\$	8,730,315	\$	19,749,897	\$	1,802,449,799
32	\$	-	\$	11,019,582	\$	-	\$	-	\$	9,105,563	\$	20,125,145	\$	1,822,574,944
33	\$	-	\$	11,019,582	\$	-	\$	-	\$	9,487,941	\$	20,507,523	\$	1,843,082,467
34	\$	-	\$	11,019,582	\$	-	\$	-	\$	9,877,583	\$	20,897,166	\$	1,863,979,633
35	\$	-	\$	11,019,582	\$	-	\$	-	\$	10,274,630	\$	21,294,212	\$	1,885,273,845
36	\$	-	\$	11,019,582	\$	-	\$	-	\$	10,679,220	\$	21,698,802	\$	1,906,972,646
37	\$	-	\$	11,019,582	\$	-	\$	-	\$	11,091,497	\$	22,111,079	\$	1,929,083,725
38	\$	-	\$	11,019,582	\$	-	\$	-	\$	11,511,607	\$	22,531,190	\$	1,951,614,915
39	\$	-	\$	11,019,582	\$	-	\$	-	\$	11,939,700	\$	22,959,282	\$	1,974,574,197
40	\$	-	\$	11,019,582	\$	-	\$	-	\$	12,375,926	\$	23,395,509	\$	1,997,969,706
41	\$	-	\$	11,019,582	\$	-	\$	-	\$	12,820,441	\$	23,840,023	\$	2,021,809,729
42	\$	-	\$	11,019,582	\$	-	\$	-	\$	13,273,401	\$	24,292,984	\$	2,046,102,712
43	\$	-	\$	11,019,582	\$	-	\$	-	\$	13,734,968	\$	24,754,550	\$	2,070,857,263
44	\$	-	\$	11,019,582	\$	-	\$	-	\$	14,205,305	\$	25,224,887	\$	2,096,082,149
45	\$	-	\$	11,019,582	\$	-	\$	-	\$	14,684,577	\$	25,704,160	\$	2,121,786,309
46	\$	-	\$	11,019,582	\$	-	\$	-	\$	15,172,956	\$	26,192,539	\$	2,147,978,848
47	\$	-	\$	11,019,582	\$	-	\$	-	\$	15,670,615	\$	26,690,197	\$	2,174,669,045
48	\$	-	\$	11,019,582	\$	-	\$	-	\$	16,177,728	\$	27,197,311	\$	2,201,866,355
49	\$	-	\$	11,019,582	\$	-	\$	-	\$	16,694,477	\$	27,714,060	\$	2,229,580,415
50	\$	_	\$	11,019,582	\$	-	\$	_	\$	17,221,044	\$	28,240,627	\$	2,257,821,041
51	\$	_	\$	-	\$	-	\$	42,500,000	\$	68,487,052	\$	110,987,052	\$	2,368,808,093
52	\$	_	\$	-	\$	-	\$	40,000,000	\$	66,443,111	\$	106,443,111	\$	2,475,251,204
53	\$	-	; \$	-	\$	-	, \$	49,862,875	\$	85,347,205	\$	135,210,080	, \$	2,610,461,284
54	\$	_	\$	_	\$	_	\$	49,862,875	\$	87,916,196	\$	137,779,071	\$	2,748,240,355
55	\$	_	\$	_	\$	_	\$	49,862,875	Ś	90,533,998	\$	140,396,874	\$	2,888,637,228
56	ς ,		¢	_	¢	_	ς ,	.5,002,075	ς ς	-	ς ,	1.0,000,074	¢	2,888,637,228
57	¢	-	ç	-	ç	-	¢	-	¢	-	¢	-	ç	2,888,637,228
57 58	ب خ	-	ب د	-	ب خ	-	ب خ	-	ب د	-	ې د	-	ب خ	2,888,637,228
59	¢	-	ç	-	ç	-	¢	-	¢	-	¢	-	ç	2,888,637,228
60	ې خ	-	ې خ	-	ې خ	-	ې خ	-	ب د	-	ې خ	-	ې خ	
00	Ş	-	Ş	-	Ş	-	Ş	-	\$	-	\$	-	Ş	2,888,637,228
		Total		Total				Total		Total				Total
				Total O&M				D&D		Escalation				
		Design/Const	ć	U&IVI 522 276 272	ç	77 017 279	ç	132 088 625	ċ	escalation			ç	Life Cycle

Annual Escalation

\$ 1,055,127,425 \$ 532,376,272 \$ 77,017,378 \$ 232,088,625 \$ 992,027,528



STUDY 1 - ALTERNATIVE STORAGE SYSTEMS FOR DUAL PURPOSE CANISTERS

COST DETAILS

ALTERNATIVE 19 - C-BGV, EXPANDED, LOW SEISMIC

LIFE CYCLE COST - 80 YEAR OPERATING LIFE



Expanded Storage Facility (10,000 MTU)

Project: C-BGV Pilot (10,000 MTU)

Expanded Project - C-BGV 60/40 Vertical/Horizontal - Low Seismic

Separate CHB

80 Yea	r Op	perating Life											
									-	Anr	nual Escalation		Discount Rate
											1.90%		3.40%
YEAR		Design/Const		O&M	C.	ask Handling		D&D			Escalation	Annual Funding	Cumulative
1	\$	10,000,000	\$	UQIVI	\$	ask nanunng	\$	שאט		\$	190,000	\$10,190,000	\$10,190,000
2	۶ \$	10,000,000	\$	_	ب خ	_	ب \$	_		۶ \$	383,610	\$10,130,000	\$20,573,610
3	\$	20,000,000	\$	_	ς ς	_	ς ς	_		\$	1,161,797	\$10,363,010	\$41,735,407
4	\$	20,000,000	\$	_	\$	_	\$	_		\$	1,563,871	\$21,563,871	\$63,299,279
5	\$	20,000,000	\$	_	\$	_	\$	_		\$	1,973,585	\$21,973,585	\$85,272,863
6	\$	20,000,000	\$	_	\$	_	\$	_		\$	2,391,083	\$22,391,083	\$107,663,946
7	\$	27,888,399	\$	_	\$	_	\$	_		\$	3,927,403	\$31,815,802	\$139,479,748
8	, \$	200,000,000	\$	_	\$	-	\$	-		\$	32,500,273	\$232,500,273	\$371,980,021
9	\$	200,000,000	\$	25,073,418	\$	-	\$	-		\$	41,546,053	\$266,619,471	\$638,599,492
10	\$	527,239,026	\$	24,539,498	\$	_	\$	-		\$	114,271,170	\$666,049,694	\$1,304,649,187
11			\$	25,012,938	\$	12,836,230	\$	-		\$	8,706,478	\$46,555,646	\$1,351,204,833
12	\$	-	\$	25,012,938	\$	12,836,230	\$	-		\$	9,591,036	\$47,440,204	\$1,398,645,037
13	\$	-	\$	25,012,938	\$	12,836,230	\$	-		\$	10,492,400	\$48,341,568	\$1,446,986,604
14	\$	-	\$	11,019,582	\$	12,836,230	\$	-		\$	7,192,127	\$31,047,939	\$1,478,034,543
15	\$	-	\$	11,019,582	\$	12,836,230	\$	-		\$	7,782,038	\$31,637,850	\$1,509,672,393
16	\$	-	\$	11,019,582	\$	12,836,230	\$	-		\$	8,383,157	\$32,238,969	\$1,541,911,362
17	\$	-	\$	11,019,582	\$	-	\$	-		\$	4,155,332	\$15,174,915	\$1,557,086,277
18	\$	-	\$	11,019,582	\$	-	\$	-		\$	4,443,656	\$15,463,238	\$1,572,549,515
19	\$	-	\$	11,019,582	\$	-	\$	-		\$	4,737,457	\$15,757,040	\$1,588,306,554
20	\$	-	\$	11,019,582	\$	-	\$	-		\$	5,036,841	\$16,056,423	\$1,604,362,978
21	\$	-	\$	11,019,582	\$	-	\$	-		\$	5,341,913	\$16,361,495	\$1,620,724,473
22	\$	-	\$	11,019,582	\$	-	\$	-		\$	5,652,782	\$16,672,364	\$1,637,396,837
23	\$	-	\$	11,019,582	\$	-	\$	-		\$	5,969,556	\$16,989,139	\$1,654,385,976
24	\$	-	\$	11,019,582	\$	-	\$	-		\$	6,292,350	\$17,311,932	\$1,671,697,908
25	\$	-	\$	11,019,582	\$	-	\$	-		\$	6,621,277	\$17,640,859	\$1,689,338,767
26	\$	-	\$	11,019,582	Ş	-	\$	-		\$	6,956,453	\$17,976,035	\$1,707,314,802
27	\$	-	\$	11,019,582	\$	-	\$	-		\$	7,297,998	\$18,317,580	\$1,725,632,382
28	\$ ¢	-	\$ ¢	11,019,582	\$ \$	-	\$ ¢	-		>	7,646,032	\$18,665,614	\$1,744,297,996
29	\$ ¢	-	\$ ¢	11,019,582	\$ ¢	-	\$ ¢	-		>	8,000,678	\$19,020,261	\$1,763,318,257
30	\$ د	-	\$ ¢	11,019,582	خ	-	<u>ې</u>	-		<u>۲</u>	8,362,063 8,730,315	\$19,381,646 \$19,749,897	\$1,782,699,903
31 32	ې د	_	Ş ¢	11,019,582 11,019,582	ې د	_	ې د	-		ې د	9,105,563	\$19,749,897	\$1,802,449,799 \$1,822,574,944
33	ې د	_	\$ ¢	11,019,582	ې د	_	ې د	_		ې د	9,487,941	\$20,507,523	\$1,843,082,467
34	ς ς	_	\$	11,019,582	ς ς	_	ς ς	_		٠ ۲	9,877,583	\$20,307,323	\$1,863,979,633
35	ς ς	_	\$	11,019,582	\$	_	ς ς	_		٠ \$	10,274,630	\$20,837,100	\$1,885,273,845
36	\$	_	\$	11,019,582	\$	_	\$	_		\$	10,679,220	\$21,698,802	\$1,906,972,646
37	\$	_	\$	11,019,582	\$	_	\$	-		\$	11,091,497	\$22,111,079	\$1,929,083,725
38	\$	_	\$	11,019,582	\$	-	\$	_		\$	11,511,607	\$22,531,190	\$1,951,614,915
39	\$	-	\$	11,019,582	\$	-	\$	-		\$	11,939,700	\$22,959,282	\$1,974,574,197
40	\$	-	, \$	11,019,582	\$	-	\$	-		\$	12,375,926	\$23,395,509	\$1,997,969,706
41	\$	-	\$	11,019,582	\$	_	\$	-		\$	12,820,441	\$23,840,023	\$2,021,809,729
42	\$	-	\$	11,019,582	\$	-	\$	-		\$	13,273,401	\$24,292,984	\$2,046,102,712
43	\$	-	\$	11,019,582	\$	-	\$	-		\$	13,734,968	\$24,754,550	\$2,070,857,263
44	\$	-	\$	11,019,582	\$	-	\$	-		\$	14,205,305	\$25,224,887	\$2,096,082,149
45	\$	-	\$	11,019,582	\$	-	\$	-		\$	14,684,577	\$25,704,160	\$2,121,786,309
46	\$	-	\$	11,019,582	\$	-	\$	-		\$	15,172,956	\$26,192,539	\$2,147,978,848
47	\$	-	\$	11,019,582	\$	-	\$	-		\$	15,670,615	\$26,690,197	\$2,174,669,045
48	\$	-	\$	11,019,582	\$	-	\$	-		\$	16,177,728	\$27,197,311	\$2,201,866,355
49	\$	-	\$	11,019,582	\$	-	\$	-		\$	16,694,477	\$27,714,060	\$2,229,580,415
50	\$	-	\$	11,019,582	\$	-	\$	-		\$	17,221,044	\$28,240,627	\$2,257,821,041
51	\$	-	\$	11,019,582	\$	-	\$	-		\$	17,757,616	\$28,777,199	\$2,286,598,240
52	\$	-	\$	11,019,582	\$	-	\$	-		\$	18,304,383	\$29,323,965	\$2,315,922,205
53	\$ •	-	\$ •	11,019,582	\$ •	-	\$ •	-		\$ \$	18,861,538	\$29,881,121	\$2,345,803,326
54	\$ ^	-	\$ ¢	11,019,582	\$ •	-	\$ ^	-		\$	19,429,280	\$30,448,862	\$2,376,252,188
55 56	\$ ¢	-	\$	11,019,582	\$	-	<u>></u>	-		\$	20,007,808	\$31,027,390	\$2,407,279,578
56	>	-	\$	11,019,582	\$ ¢	-	<u>></u>	-		<u>ې</u>	20,597,329	\$31,616,911	\$2,438,896,489
57 50	خ	-	\$ ¢	11,019,582	\$ ¢	-	ب	-		\$ ¢	21,198,050	\$32,217,632	\$2,471,114,121
58 59	ې د	-	\$ ¢	11,019,582 11,019,582	\$ \$	-	ې د	-		\$ \$	21,810,185 22,433,950	\$32,829,767 \$33,453,533	\$2,503,943,888 \$2,537,397,421
60	ب د	-	\$ \$	11,019,582	\$ \$	- -	ې د	-		ب (23,069,568	\$33,453,533	\$2,537,397,421
61	ς ς	-	۶ \$	11,019,582	۶ \$	-	ς ,	-		۶ \$	23,717,261	\$34,736,844	\$2,606,223,414
0 ±	7		Y	,010,002	Y		Y			7		+ 5 . j , 5 6 j 6 1 1	, =, = = = = = = ; 1±¬



62	\$ -	\$ 11,019,582	\$	-	\$ -	\$ 24,377,261	\$35,396,844	\$2,641,620,258
63	\$ -	\$ 11,019,582	\$	-	\$ -	\$ 25,049,801	\$36,069,384	\$2,677,689,641
64	\$ -	\$ 11,019,582	\$	-	\$ -	\$ 25,735,120	\$36,754,702	\$2,714,444,343
65	\$0	\$ 11,019,582	\$	-	\$ -	\$ 26,433,459	\$37,453,041	\$2,751,897,385
66	\$0	\$ 11,019,582	\$	-	\$ -	\$ 27,145,067	\$38,164,649	\$2,790,062,034
67	\$0	\$ 11,019,582	\$	-	\$ -	\$ 27,870,195	\$38,889,777	\$2,828,951,811
68	\$0	\$ 11,019,582	\$	-	\$ -	\$ 28,609,101	\$39,628,683	\$2,868,580,494
69	\$0	\$ 11,019,582	\$	-	\$ -	\$ 29,362,046	\$40,381,628	\$2,908,962,122
70	\$0	\$ 11,019,582	\$	-	\$ -	\$ 30,129,297	\$41,148,879	\$2,950,111,001
71	\$0	\$ 11,019,582	\$	-	\$ -	\$ 30,911,126	\$41,930,708	\$2,992,041,709
72	\$0	\$ 11,019,582	\$	-	\$ -	\$ 31,707,809	\$42,727,391	\$3,034,769,100
73	\$0	\$ 11,019,582	\$	-	\$ -	\$ 32,519,629	\$43,539,212	\$3,078,308,312
74	\$0	\$ 11,019,582	\$	-	\$ -	\$ 33,346,874	\$44,366,457	\$3,122,674,769
75	\$0	\$ 11,019,582	\$	-	\$ -	\$ 34,189,837	\$45,209,419	\$3,167,884,188
76	\$0	\$ 11,019,582	\$	-	\$ -	\$ 35,048,816	\$46,068,398	\$3,213,952,587
77	\$0	\$ 11,019,582	\$	-	\$ -	\$ 35,924,116	\$46,943,698	\$3,260,896,284
78	\$0	\$ 11,019,582	\$	-	\$ -	\$ 36,816,046	\$47,835,628	\$3,308,731,913
79	\$0	\$ 11,019,582	\$	-	\$ -	\$ 37,724,923	\$48,744,505	\$3,357,476,418
80	\$0	\$ 11,019,582	\$	-	\$ -	\$ 38,651,068	\$49,670,651	\$3,407,147,068
81	\$0	\$ 11,019,582	\$	-	\$ -	\$ 39,594,811	\$50,614,393	\$3,457,761,461
82	\$0	\$ 11,019,582	\$	-	\$ -	\$ 40,556,484	\$51,576,067	\$3,509,337,528
83	\$0	\$ 11,019,582	\$	-	\$ -	\$ 41,536,430	\$52,556,012	\$3,561,893,540
84	\$0	\$ 11,019,582	\$	-	\$ -	\$ 42,534,994	\$53,554,576	\$3,615,448,116
85	\$0	\$ 11,019,582	\$	-	\$ -	\$ 43,552,531	\$54,572,113	\$3,670,020,229
86	\$0	\$ 11,019,582	\$	-	\$ -	\$ 44,589,401	\$55,608,983	\$3,725,629,212
87	\$0	\$ 11,019,582	\$	-	\$ -	\$ 45,645,972	\$56,665,554	\$3,782,294,766
88	\$0	\$ 11,019,582	\$	-	\$ -	\$ 46,722,617	\$57,742,199	\$3,840,036,965
89	\$0	\$ 11,019,582	\$	-	\$ -	\$ 47,819,719	\$58,839,301	\$3,898,876,266
90	\$0	\$ 11,019,582	\$	-	\$ -	\$ 48,937,666	\$59,957,248	\$3,958,833,514
91			\$	-	\$ 42,500,000	\$ 193,134,933	\$235,634,933	\$4,194,468,447
92			\$	-	\$ 40,000,000	\$ 185,987,761	\$225,987,761	\$4,420,456,208
93			\$	-	\$ 49,862,875	\$ 237,199,603	\$287,062,478	\$4,707,518,685
94			\$	-	\$ 49,862,875	\$ 242,653,790	\$292,516,665	\$5,000,035,350
95			\$	-	\$ 49,862,875	\$ 248,211,606	\$298,074,481	\$5,298,109,831
96					\$ -	\$ -	\$0	\$5,298,109,831
97					\$ -	\$ -	\$0	\$5,298,109,831
98						\$ -	\$0	\$5,298,109,831
99						\$ -	\$0	\$5,298,109,831
100						\$ -	\$0	\$5,298,109,831
	Total	Total	Total		Total	Total		Total
	Design/Const	O&M	Cask Handli	ng	D&D	Escalation		Life Cycle
	<u> </u>			_				•
	\$1,055,127,425	\$973,159,561	\$77,017,3	3/ŏ	\$232,088,625	\$2,960,716,843		\$5,298,109,831



STUDY 1 - ALTERNATIVE STORAGE SYSTEMS FOR DUAL PURPOSE CANISTERS

COST DETAILS

ALTERNATIVE 20 - C-BGV, EXPANDED, HIGH SEISMIC

LIFE CYCLE COST SUMMARIES



Expanded Storage Facility (10,000 MTU)

Project: C-BGV Expanded (10,000 MTU)

Expanded Project - C-BGV 60/40 Vertical/Horizontal - High Seismic

Separate CHB

Annual Escalation Factor 1.90% Discount Rate 3.40%

Life Cycle Costs (40 Year Life) Design & Construction Operations & Maintenance (40 Year Life) Cask Handling	Capital <i>\$1,143,664,945</i>	Operations \$532,376,272 \$77,017,378	Transport	Decommissioning	Escalation	Total Costs \$1,143,664,945 \$532,376,272 \$77,017,378
Transportation Equipment	\$0					\$0
Transport Operations		\$0	\$0			\$0
Repackaging	\$0	\$0				\$0
Transport to Repository	\$0		\$0			\$0
D&D				\$246,626,036		\$246,626,036
Escalation					\$1,035,999,816	\$1,035,999,816
Total Costs (40 year Life)						\$3,035,684,448
Present Value						\$1,546,413,698
Life Cycle Costs (80 Year Life)	Capital	Operations	Transport	Decommissioning	Escalation	Total Costs
Design & Construction	\$1,143,664,945	Operations	Transport	200011111133101111118	25001011	\$1,143,664,945
Operations & Maintenance (80 Year Life)	φ = y = 1.5, σ ε 1, σ 1.5	\$973,159,561				\$973,159,561
Cask Handling		\$77,017,378				\$77,017,378
Transportation Equipment	\$0	ψ,σΞ.,σσ				\$0
Transport Operations	* -	\$0	\$0			\$0
Repackaging	\$0	\$0	, -			\$0
Transport to Repository	\$0	, -	\$0			\$0
D&D			, -	\$246,626,036		\$246,626,036
Escalation				. , ,	\$3,049,807,860	\$3,049,807,860
Total Costs (80 Year Life)						\$5,490,275,780
Present Value						. , , ,



STUDY 1 - ALTERNATIVE STORAGE SYSTEMS FOR DUAL PURPOSE CANISTERS

COST DETAILS

ALTERNATIVE 20 - C-BGV, EXPANDED, HIGH SEISMIC

CAPITAL COST SUMMARY

\$10,000,000



Interim Storage Facility

Expanded Storage Facility (10,000 MTU)

Project: C-BGV Expanded (10,000 MTU)

Expanded Project - C-BGV 60/40 Vertical/Horizontal - High Seismic

Separate CHB

Level 3 Cost Summary - First of A kind module

Level 1 C-BGV LE EX 01	Level 2		Description	on torage Facility and transportation Project		Level 3 Total
	C-BGV LE EX 01.0			Pilot ISF Facility	\$519,570,637	
				•		
		C-BGV LE EX 01.01		Storage BGVs		\$0
		C-BGV LE EX 01.01		Cask Handling (Transfer) Facility		\$163,293,960
		C-BGV LE EX 01.01		Horizontal Dry Storage Modules		\$0
		C-BGV LE EX 01.01		Vertical Dry Storage Module		\$197,137,516
		C-BGV LE EX 01.01		Storage Cask Fabrication Facility		\$0 \$0
		C-BGV LE EX 01.01		Cask Maintenance Facility Concrete Batch Plant		۶۵ \$1,850,000
		C-BGV LE EX 01.01		Visitor Center/ Auditorium		\$1,830,000
		C-BGV LE EX 01.01		Administration Building		\$3,140,000
		C-BGV LE EX 01.01		Security		\$24,148,975
		C-BGV LE EX 01.01	.11	Rail Spur/ Receiving Yard		\$58,752,800
		C-BGV LE EX 01.01	12	Utilities		\$18,682,150
		C-BGV LE EX 01.01	13	Roads		\$18,212,737
		C-BGV LE EX 01.01		Parking		\$735,000
		C-BGV LE EX 01.01		Site Work		\$23,417,500
		C-BGV LE EX 01.01		Warehouse		\$10,200,000
		C-BGV LE EX 01.01		Maintenance Facility		\$0 \$0
		C-BGV LE EX 01.01		Waste management Facility		\$0 \$0
		C-BGV LE EX 01.01	.UI.XX	(Add Further Breakdown as needed)		\$ 0
	C-BGV LE EX 01.0)2	E	Expanded Interim Storage Facility	\$224,404,345	
		C-BGV LE EX 01.02	01	Expanded Storage BGVs and Dry Cask Stora	ige Systems	\$0
		C-BGV LE EX 01.02		Expanded Cask Handling Facility (if required	d)	\$0
		C-BGV LE EX 01.02		Horizontal Dry Storage Modules		\$0
		C-BGV LE EX 01.02		Vertical Dry Storage Casks	n	\$197,137,516
		C-BGV LE EX 01.02		Storage Cask Fabrication Facility (Expanded)	1)	\$0
		C-BGV LE EX 01.02 C-BGV LE EX 01.02		Cask Maintenance Facility (Expanded)		\$0
		C-BGV LE EX 01.02		Concrete Batch Plant (Expanded if needed) Visitor Center/ Auditorium (expanded if ne		\$1,850,000 \$745,000
		C-BGV LE EX 01.02		Administration Building (Expanded if neede	•	\$743,000 \$0
		C-BGV LE EX 01.02		Security (Expanded)	.u)	\$10,074,488
		C-BGV LE EX 01.02		Rail Spur/ Receiving Yard (Expanded)		\$0
		C-BGV LE EX 01.02		Utilities Expanded as needed)		\$3,624,200
		C-BGV LE EX 01.02	13	Roads (Expanded)		\$83,142
		C-BGV LE EX 01.02	14	Parking (Expanded as needed)		\$0
		C-BGV LE EX 01.02	15	Site Work (Expanded)		\$10,890,000
		C-BGV LE EX 01.02	.16	Warehouse (Expanded if Needed)		\$0
		C-BGV LE EX 01.02	17	Maintenance Facility (Expanded if needed)		\$0
		C-BGV LE EX 01.02		Waste management Facility (Expanded if no	eeded)	\$0
		C-BGV LE EX 01.02		Hot Cell / Laboratories		\$0
		C-BGV LE EX 01.02		Pool Packaging Facility		\$0
		C-BGV LE EX 01.02		Standardized Storage System		\$0 \$0
		C-BGV LE EX 01.02 C-BGV LE EX 01.02		Standardized Disposal Canister	m.	\$0 \$0
	C-BGV LE EX 01.0			Canister Repackaging Facility (For Reposito Fransportation Equipment	\$0	ŞU
	C-BGV LL LX 01.0	C-BGV LE EX 01.03		Transportation Casks	ŞŪ	\$0
		C-BGV LE EX 01.03		Rail Equipment		\$0 \$0
		C-BGV LE EX 01.03		Rail Maintenance Facility		\$0 \$0
		C-BGV LE EX 01.03		Transportation Systems Services		\$0
	C-BGV LE EX 01.0			Pre-Construction Capitalized Costs	\$66,025,000	
		C-BGV LE EX 01.04		Land or Land Leases		\$7,680,000
		C-BGV LE EX 01.04		Site permits		\$200,000
		C-BGV LE EX 01.04		Site Licensing		\$6,240,000
		C-BGV LE EX 01.04		Plant Permits		\$0
		C-BGV LE EX 01.04		Planning and Alternative Studies		\$750,000 \$0
		C-BGV LE EX 01.04 C-BGV LE EX 01.04		Research and Development		\$22,955,000
		C-BGV LE EX 01.04		Design Other Pre-construction Costs		\$23,955,000 \$17,200,000
		C-BGV LE EX 01.04		Dro-construction contingencies		\$17,200,000

Pre-construction contingencies

C-BGV LE EX 01.04.10



C-BGV LE EX 01.04.xx	(Add Further Breakdown as needed)		\$0
C-BGV LE EX 01.05	Indirect Capitalized Costs	\$63,180,000	
C-BGV LE EX 01.05.01	Project Management		\$2,700,000
C-BGV LE EX 01.05.02	Construction Management		\$3,600,000
C-BGV LE EX 01.05.03	Field indirect services		\$11,880,000
C-BGV LE EX 01.05.04	Design Services in support of Construction		\$5,400,000
C-BGV LE EX 01.05.05	QA/QC		\$12,600,000
C-BGV LE EX 01.05.06	Commissioning and Startup		\$1,200,000
C-BGV LE EX 01.05.07	Home office Engineering support to Construction	on	\$7,200,000
C-BGV LE EX 01.05.08	Document Control		\$2,700,000
C-BGV LE EX 01.05.09	Project Controls		\$3,600,000
C-BGV LE EX 01.05.10	Construction Testing		\$2,700,000
C-BGV LE EX 01.05.11	Inspections		\$3,600,000
C-BGV LE EX 01.05.12	Startup and Testing		\$3,000,000
C-BGV LE EX 01.05.13	Commissioning		\$3,000,000
C-BGV LE EX 01.06	Site Selection	\$0	
C-BGV LE EX 01.06.01	Site Selection		\$0
C-BGV LE EX 01.06.02	Public Information Process		\$0
C-BGV LE EX 01.07	Decontamination and Deconstruction	\$0	
C-BGV LE EX 01.07.01	Decommissioning		\$0
C-BGV LE EX 01.07.02	Decontamination		\$0
C-BGV LE EX 01.07.03	Deconstruction		\$0
C-BGV LE EX 01.07.04			\$0
C-BGV LE EX 01.07.05			\$0
C-BGV LE EX 01.08	Project Financial Costs	\$117,006,118	
C-BGV LE EX 01.08 C-BGV LE EX 01.08.01	Project Financial Costs Contractor Fees	\$117,006,118	\$69,854,399
	-	\$117,006,118	\$69,854,399 \$47,151,719
C-BGV LE EX 01.08.01	Contractor Fees	\$117,006,118	
C-BGV LE EX 01.08.01 C-BGV LE EX 01.08.02	Contractor Fees Escalation Costs		\$47,151,719
C-BGV LE EX 01.08.01 C-BGV LE EX 01.08.02 C-BGV LE EX 01.08.03	Contractor Fees Escalation Costs Interest Payments		\$47,151,719 \$0
C-BGV LE EX 01.08.01 C-BGV LE EX 01.08.02 C-BGV LE EX 01.08.03 C-BGV LE EX 01.08.04	Contractor Fees Escalation Costs Interest Payments		\$47,151,719 \$0 \$0
C-BGV LE EX 01.08.01 C-BGV LE EX 01.08.02 C-BGV LE EX 01.08.03 C-BGV LE EX 01.08.04 C-BGV LE EX 01.08.05 C-BGV LE EX 01.08.xx	Contractor Fees Escalation Costs Interest Payments Indirect costs to support shipments to repositor (Add Further Breakdown as needed)	ry	\$47,151,719 \$0 \$0 \$0
C-BGV LE EX 01.08.01 C-BGV LE EX 01.08.02 C-BGV LE EX 01.08.03 C-BGV LE EX 01.08.04 C-BGV LE EX 01.08.05	Contractor Fees Escalation Costs Interest Payments Indirect costs to support shipments to repositor (Add Further Breakdown as needed) Project Contingencies		\$47,151,719 \$0 \$0 \$0 \$0 \$0
C-BGV LE EX 01.08.01 C-BGV LE EX 01.08.02 C-BGV LE EX 01.08.03 C-BGV LE EX 01.08.04 C-BGV LE EX 01.08.05 C-BGV LE EX 01.08.xx	Contractor Fees Escalation Costs Interest Payments Indirect costs to support shipments to repositor (Add Further Breakdown as needed)	ry	\$47,151,719 \$0 \$0 \$0
C-BGV LE EX 01.08.01 C-BGV LE EX 01.08.02 C-BGV LE EX 01.08.03 C-BGV LE EX 01.08.04 C-BGV LE EX 01.08.05 C-BGV LE EX 01.08.xx C-BGV LE EX 01.09 C-BGV LE EX 01.09.01 C-BGV LE EX 01.09.02	Contractor Fees Escalation Costs Interest Payments Indirect costs to support shipments to repositor (Add Further Breakdown as needed) Project Contingencies Management Reserve - Contractor Held	ry	\$47,151,719 \$0 \$0 \$0 \$0 \$0 \$0
C-BGV LE EX 01.08.01 C-BGV LE EX 01.08.02 C-BGV LE EX 01.08.03 C-BGV LE EX 01.08.04 C-BGV LE EX 01.08.05 C-BGV LE EX 01.08.xx C-BGV LE EX 01.09 C-BGV LE EX 01.09.01 C-BGV LE EX 01.09.02	Contractor Fees Escalation Costs Interest Payments Indirect costs to support shipments to repositor (Add Further Breakdown as needed) Project Contingencies Management Reserve - Contractor Held Contingency - DOE held	ry \$153,478,845	\$47,151,719 \$0 \$0 \$0 \$0 \$0 \$0
C-BGV LE EX 01.08.01 C-BGV LE EX 01.08.02 C-BGV LE EX 01.08.03 C-BGV LE EX 01.08.04 C-BGV LE EX 01.08.05 C-BGV LE EX 01.08.xx C-BGV LE EX 01.09 C-BGV LE EX 01.09.01 C-BGV LE EX 01.09.02 C-BGV LE EX 01.09.02	Contractor Fees Escalation Costs Interest Payments Indirect costs to support shipments to repositor (Add Further Breakdown as needed) Project Contingencies Management Reserve - Contractor Held Contingency - DOE held Other Direct Costs	ry	\$47,151,719 \$0 \$0 \$0 \$0 \$0 \$103,969,305 \$103,969,540
C-BGV LE EX 01.08.01 C-BGV LE EX 01.08.02 C-BGV LE EX 01.08.03 C-BGV LE EX 01.08.04 C-BGV LE EX 01.08.05 C-BGV LE EX 01.08.xx C-BGV LE EX 01.09 C-BGV LE EX 01.09.01 C-BGV LE EX 01.09.02 C-BGV LE EX 01.10 C-BGV LE EX 01.10.01 C-BGV LE EX 01.10.02	Contractor Fees Escalation Costs Interest Payments Indirect costs to support shipments to repositor (Add Further Breakdown as needed) Project Contingencies Management Reserve - Contractor Held Contingency - DOE held Other Direct Costs DOE Project Operations	ry \$153,478,845	\$47,151,719 \$0 \$0 \$0 \$0 \$0 \$103,969,305 \$103,969,540
C-BGV LE EX 01.08.01 C-BGV LE EX 01.08.02 C-BGV LE EX 01.08.03 C-BGV LE EX 01.08.04 C-BGV LE EX 01.08.05 C-BGV LE EX 01.08.xx C-BGV LE EX 01.09 C-BGV LE EX 01.09.01 C-BGV LE EX 01.09.02 C-BGV LE EX 01.10 C-BGV LE EX 01.10.01 C-BGV LE EX 01.10.02 C-BGV LE EX 01.10.03	Contractor Fees Escalation Costs Interest Payments Indirect costs to support shipments to repositor (Add Further Breakdown as needed) Project Contingencies Management Reserve - Contractor Held Contingency - DOE held Other Direct Costs DOE Project Operations DOE TM&E	ry \$153,478,845	\$47,151,719 \$0 \$0 \$0 \$0 \$0 \$103,969,305 \$103,969,540
C-BGV LE EX 01.08.01 C-BGV LE EX 01.08.02 C-BGV LE EX 01.08.03 C-BGV LE EX 01.08.04 C-BGV LE EX 01.08.05 C-BGV LE EX 01.08.xx C-BGV LE EX 01.09 C-BGV LE EX 01.09.01 C-BGV LE EX 01.09.02 C-BGV LE EX 01.10 C-BGV LE EX 01.10.01 C-BGV LE EX 01.10.02 C-BGV LE EX 01.10.03 C-BGV LE EX 01.10.04	Contractor Fees Escalation Costs Interest Payments Indirect costs to support shipments to repositor (Add Further Breakdown as needed) Project Contingencies Management Reserve - Contractor Held Contingency - DOE held Other Direct Costs DOE Project Operations DOE TM&E Host site Operational Costs Miscellaneous	ry \$153,478,845	\$47,151,719 \$0 \$0 \$0 \$0 \$0 \$0 \$103,969,305 \$103,969,540
C-BGV LE EX 01.08.01 C-BGV LE EX 01.08.02 C-BGV LE EX 01.08.03 C-BGV LE EX 01.08.04 C-BGV LE EX 01.08.05 C-BGV LE EX 01.08.xx C-BGV LE EX 01.09 C-BGV LE EX 01.09.01 C-BGV LE EX 01.09.02 C-BGV LE EX 01.10 C-BGV LE EX 01.10.01 C-BGV LE EX 01.10.02 C-BGV LE EX 01.10.03	Contractor Fees Escalation Costs Interest Payments Indirect costs to support shipments to repositor (Add Further Breakdown as needed) Project Contingencies Management Reserve - Contractor Held Contingency - DOE held Other Direct Costs DOE Project Operations DOE TM&E	ry \$153,478,845	\$47,151,719 \$0 \$0 \$0 \$0 \$0 \$103,969,305 \$103,969,540
C-BGV LE EX 01.08.01 C-BGV LE EX 01.08.02 C-BGV LE EX 01.08.03 C-BGV LE EX 01.08.04 C-BGV LE EX 01.08.05 C-BGV LE EX 01.08.xx C-BGV LE EX 01.09 C-BGV LE EX 01.09.01 C-BGV LE EX 01.09.02 C-BGV LE EX 01.10 C-BGV LE EX 01.10.01 C-BGV LE EX 01.10.02 C-BGV LE EX 01.10.03 C-BGV LE EX 01.10.04	Contractor Fees Escalation Costs Interest Payments Indirect costs to support shipments to repositor (Add Further Breakdown as needed) Project Contingencies Management Reserve - Contractor Held Contingency - DOE held Other Direct Costs DOE Project Operations DOE TM&E Host site Operational Costs Miscellaneous	ry \$153,478,845	\$47,151,719 \$0 \$0 \$0 \$0 \$0 \$0 \$103,969,305 \$103,969,540
C-BGV LE EX 01.08.01 C-BGV LE EX 01.08.02 C-BGV LE EX 01.08.03 C-BGV LE EX 01.08.04 C-BGV LE EX 01.08.05 C-BGV LE EX 01.08.xx C-BGV LE EX 01.09 C-BGV LE EX 01.09.01 C-BGV LE EX 01.09.02 C-BGV LE EX 01.10 C-BGV LE EX 01.10.01 C-BGV LE EX 01.10.02 C-BGV LE EX 01.10.03 C-BGV LE EX 01.10.04 C-BGV LE EX 01.10.05	Contractor Fees Escalation Costs Interest Payments Indirect costs to support shipments to repositor (Add Further Breakdown as needed) Project Contingencies Management Reserve - Contractor Held Contingency - DOE held Other Direct Costs DOE Project Operations DOE TM&E Host site Operational Costs Miscellaneous Miscellaneous ODC	ry \$153,478,845 \$0	\$47,151,719 \$0 \$0 \$0 \$0 \$0 \$0 \$103,969,305 \$103,969,540
C-BGV LE EX 01.08.01 C-BGV LE EX 01.08.02 C-BGV LE EX 01.08.03 C-BGV LE EX 01.08.04 C-BGV LE EX 01.08.05 C-BGV LE EX 01.08.xx C-BGV LE EX 01.09 C-BGV LE EX 01.09.01 C-BGV LE EX 01.09.02 C-BGV LE EX 01.10 C-BGV LE EX 01.10.01 C-BGV LE EX 01.10.02 C-BGV LE EX 01.10.03 C-BGV LE EX 01.10.05 C-BGV LE EX 01.10.05	Contractor Fees Escalation Costs Interest Payments Indirect costs to support shipments to repositor (Add Further Breakdown as needed) Project Contingencies Management Reserve - Contractor Held Contingency - DOE held Other Direct Costs DOE Project Operations DOE TM&E Host site Operational Costs Miscellaneous Miscellaneous ODC Operational Costs	ry \$153,478,845 \$0	\$47,151,719 \$0 \$0 \$0 \$0 \$0 \$0 \$103,969,540 \$0 \$0 \$0
C-BGV LE EX 01.08.01 C-BGV LE EX 01.08.02 C-BGV LE EX 01.08.03 C-BGV LE EX 01.08.04 C-BGV LE EX 01.08.05 C-BGV LE EX 01.08.xx C-BGV LE EX 01.09 C-BGV LE EX 01.09.01 C-BGV LE EX 01.09.02 C-BGV LE EX 01.10 C-BGV LE EX 01.10.01 C-BGV LE EX 01.10.02 C-BGV LE EX 01.10.03 C-BGV LE EX 01.10.04 C-BGV LE EX 01.10.05 C-BGV LE EX 01.11 C-BGV LE EX 01.11.01	Contractor Fees Escalation Costs Interest Payments Indirect costs to support shipments to repositor (Add Further Breakdown as needed) Project Contingencies Management Reserve - Contractor Held Contingency - DOE held Other Direct Costs DOE Project Operations DOE TM&E Host site Operational Costs Miscellaneous Miscellaneous ODC Operational Costs Operations Costs	ry \$153,478,845 \$0	\$47,151,719 \$0 \$0 \$0 \$0 \$0 \$0 \$103,969,305 \$103,969,540 \$0 \$0 \$0 \$0

Project Total

	(All Direct & indirect Costs, MR,	
TEC	Escalation)	\$1,039,695,405
TPC	(TEC plus Contingency, ODCs)	\$1,143,664,945
	All Capitol, Operation, Transportation,	
LCC	Escalation	\$1,143,664,945



STUDY 1 - ALTERNATIVE STORAGE SYSTEMS FOR DUAL PURPOSE CANISTERS

COST DETAILS

ALTERNATIVE 20 - C-BGV, EXPANDED, HIGH SEISMIC

LIFE CYCLE COST - 40 YEAR OPERATING LIFE



Discount Rate

\$ 3,035,684,448

Interim Storage Facility

Expanded Storage Facility (10,000 MTU)

Project: C-BGV Expanded (10,000 MTU)

Expanded Project - C-BGV 60/40 Vertical/Horizontal - High Seismic

Separate CHB

									Ann	iual Escalation			DISC	count Rate
40 Yea	ır Op	erating life								1.90%				3.40%
\/E A B		D : /O :		0011	_			505		e 1		1.5		0 1
YEAR		Design/Const		O&M		ask Handling		D&D		Escalation		nnual Expense		Cumulative
1	\$	10,000,000	\$	-	\$	-	\$	-	\$	190,000	\$	10,190,000	\$	10,190,000
2	\$	10,000,000	\$	-	\$	-	\$	-	\$	383,610	\$	10,383,610	\$	20,573,610
3	\$	20,000,000	\$	-	\$	_	\$	-	\$	1,161,797	\$	21,161,797	\$	41,735,407
4	\$	20,000,000	\$	_	Ś	_	\$	_	Ś	1,563,871	\$	21,563,871	\$	63,299,279
	ç	20,000,000	\$		¢		ç		ç	1,973,585	\$	21,973,585	ç	85,272,863
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6	\$	20,000,000	\$	-	\$	-	\$	-	\$	2,391,083	\$	22,391,083	\$	107,663,946
7	\$	27,888,399	\$	-	\$	-	\$	-	\$	3,927,403	\$	31,815,802	\$	139,479,748
8	\$	200,000,000	\$	-	\$	-	\$	-	\$	32,500,273	\$	232,500,273	\$	371,980,021
9	\$	200,000,000	\$	25,073,418	\$	_	\$	-	\$	41,546,053	\$	266,619,471	\$	638,599,492
10	ς .	615,776,546	, \$	24,539,498	ς.	_	ς.	_	ς	132,606,944	\$	772,922,988	\$	1,411,522,480
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11			\$	25,012,938	\$	12,836,230	\$,	-	>	8,706,478	\$	46,555,646	\$	1,458,078,127
12	\$	-	\$	25,012,938	\$	12,836,230	Ş	-	Ş	9,591,036	\$	47,440,204	Ş	1,505,518,330
13	\$	-	\$	25,012,938	\$	12,836,230	\$	-	\$	10,492,400	\$	48,341,568	\$	1,553,859,898
14	\$	-	\$	11,019,582	\$	12,836,230	\$	-	\$	7,192,127	\$	31,047,939	\$	1,584,907,837
15	Ś	_	\$	11,019,582	\$	12,836,230	\$	-	\$	7,782,038	\$	31,637,850	\$	1,616,545,687
16	ς .	_	, \$	11,019,582	ς.	12,836,230	\$	_	ς	8,383,157	\$	32,238,969	ς .	1,648,784,656
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17	\$,	-	\$	11,019,582	>	-	\$,	-	>	4,155,332	\$	15,174,915	\$	1,663,959,570
18	\$	-	\$	11,019,582	Ş	-	Ş	-	Ş	4,443,656	\$	15,463,238	\$	1,679,422,808
19	\$	-	\$	11,019,582	\$	-	\$	-	\$	4,737,457	\$	15,757,040	\$	1,695,179,848
20	\$	-	\$	11,019,582	\$	-	\$	-	\$	5,036,841	\$	16,056,423	\$	1,711,236,271
21	\$	_	\$	11,019,582	Ś	_	\$	_	\$	5,341,913	\$	16,361,495	\$	1,727,597,767
22	ç			11,019,582	ç		ç		ç	5,652,782	\$	16,672,364	ç	
	Ş	-	\$		ې د	-	ې د	-	ې د				ې د	1,744,270,130
23	\$	-	\$	11,019,582	\$	-	\$	-	\$	5,969,556	\$	16,989,139	\$	1,761,259,269
24	\$	-	\$	11,019,582	\$	-	\$	-	\$	6,292,350	\$	17,311,932	\$	1,778,571,201
25	\$	-	\$	11,019,582	\$	-	\$	-	\$	6,621,277	\$	17,640,859	\$	1,796,212,060
26	Ś	_	\$	11,019,582	\$	-	\$	-	\$	6,956,453	\$	17,976,035	\$	1,814,188,096
27	ς .	_	ς .	11,019,582	¢	_	ς .	_	ς .	7,297,998	ς	18,317,580	ς .	1,832,505,676
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28	\$	-	\$	11,019,582	\$	-	\$	-	\$	7,646,032	\$	18,665,614	\$	1,851,171,290
29	\$	-	\$	11,019,582	\$	-	\$	-	\$	8,000,678	\$	19,020,261	\$	1,870,191,550
30	\$	-	\$	11,019,582	\$	-	\$	-	\$	8,362,063	\$	19,381,646	\$	1,889,573,196
31	\$	-	\$	11,019,582	\$	-	\$	-	\$	8,730,315	\$	19,749,897	\$	1,909,323,093
32	\$	_	Ś	11,019,582	Ś	_	\$	_	\$	9,105,563	\$	20,125,145	\$	1,929,448,238
33	¢	_	ç	11,019,582	¢	_	¢	_	ç	9,487,941	\$	20,507,523	¢	1,949,955,761
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34	\$	-	\$	11,019,582	\$	-	\$	-	\$	9,877,583	\$	20,897,166	\$	1,970,852,926
35	\$	-	\$	11,019,582	\$	-	\$	-	\$	10,274,630	\$	21,294,212	\$	1,992,147,138
36	\$	-	\$	11,019,582	\$	-	\$	-	\$	10,679,220	\$	21,698,802	\$	2,013,845,940
37	\$	-	\$	11,019,582	\$	-	\$	-	\$	11,091,497	\$	22,111,079	\$	2,035,957,019
38	\$	_	\$	11,019,582	\$	_	\$	_	\$	11,511,607	\$	22,531,190	\$	2,058,488,209
39	¢	_	¢	11,019,582	¢	_	¢	_	¢	11,939,700	\$	22,959,282	¢	2,081,447,491
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40	\$	-	\$	11,019,582	\$	-	\$	-	>	12,375,926	\$	23,395,509	\$	2,104,842,999
41	\$	-	\$	11,019,582	\$	-	\$	-	\$	12,820,441	\$	23,840,023	\$	2,128,683,022
42	\$	-	\$	11,019,582	\$	-	\$	-	\$	13,273,401	\$	24,292,984	\$	2,152,976,006
43	\$	-	\$	11,019,582	\$	_	\$	-	\$	13,734,968	\$	24,754,550	\$	2,177,730,556
44	\$	_	\$	11,019,582	\$	_	\$	_	\$	14,205,305	, \$	25,224,887	\$	2,202,955,443
45	ç		ç	11,019,582	¢		ç		ç	14,684,577			ç	
	Ş	-	Ş		Ş	-	Ş	-	ې د		\$	25,704,160	Ş	2,228,659,603
46	\$	-	\$	11,019,582	\$	-	\$	-	>	15,172,956	\$	26,192,539	\$	2,254,852,141
47	\$	-	\$	11,019,582	\$	-	\$	-	\$	15,670,615	\$	26,690,197	\$	2,281,542,338
48	\$	-	\$	11,019,582	\$	-	\$	-	\$	16,177,728	\$	27,197,311	\$	2,308,739,649
49	\$	-	\$	11,019,582	\$	_	\$	-	\$	16,694,477	\$	27,714,060	\$	2,336,453,708
50	ς .	_	ς .	11,019,582	ς .	_	ς .	_	ς .	17,221,044	\$	28,240,627	ς .	2,364,694,335
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51	Ş	-	Þ	-	Ş	-	Ş	42,500,000	Þ	68,487,052	Ş	110,987,052	Ş	2,475,681,386
52	Ş	-	Ş	-	Ş	-	Ş	40,000,000	Ş	66,443,111	Ş	106,443,111	Ş	2,582,124,498
53	\$	-	\$	-	\$	-	\$	54,708,679	\$	93,641,467	\$	148,350,146	\$	2,730,474,643
54	\$	-	\$	-	\$	-	\$	54,708,679	\$	96,460,120	\$	151,168,799	\$	2,881,643,442
55	Ś	_	\$	_	\$	_	\$	54,708,679	\$	99,332,327	\$	154,041,006	\$	3,035,684,448
56	ç		¢		ç		ç	2 .,, 50,075	ç	JJ,JJZ,JZ1	¢	,0 11,000	ç	3,035,684,448
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57	\$	-	\$	-	Ş	-	\$	-	>	-	\$	-	\$	3,035,684,448
58	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	3,035,684,448
59	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	3,035,684,448
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		Total		Total				Total		Total				Total
	,a	Design/Const	,	0&M				D&D		Escalation			,	Life Cycle
	Ċ	1 1 1 2 6 6 1 0 1 5	Ċ	F22 276 272	Ċ	77 017 270	Ċ	246 626 026	C	1 025 000 016			Ċ	2 025 604 440

Annual Escalation

\$ 1,143,664,945 \$ 532,376,272 \$ 77,017,378 \$ 246,626,036 \$ 1,035,999,816



STUDY 1 - ALTERNATIVE STORAGE SYSTEMS FOR DUAL PURPOSE CANISTERS

COST DETAILS

ALTERNATIVE 20 - C-BGV, EXPANDED, HIGH SEISMIC

LIFE CYCLE COST - 80 YEAR OPERATING LIFE



Expanded Storage Facility (10,000 MTU)

Project: C-BGV Expanded (10,000 MTU)

Expanded Project - C-BGV 60/40 Vertical/Horizontal - High Seismic

Separate CHB

80 Year Operating Life													
									P	Ann	ual Escalation		Discount Rate
											1.90%		3.40%
YEAR		Docian/Const		O&M	_	ask Handling		D&D			Escalation	Annual Expense	Cumulative
YEAR 1	۱ \$	Design/Const 10,000,000	\$	UQIVI -	ς	ask manuling	\$	טאָט -		\$	190,000	\$10,190,000	\$10,190,000
2	\$	10,000,000	\$	_	\$	_	\$	_		\$	383,610	\$10,383,610	\$20,573,610
3	\$	20,000,000	\$	-	\$	-	\$	-		\$	1,161,797	\$21,161,797	\$41,735,407
4	\$	20,000,000	\$	-	\$	-	\$	-		\$	1,563,871	\$21,563,871	\$63,299,279
5	\$	20,000,000	\$	-	\$	-	\$	-		\$	1,973,585	\$21,973,585	\$85,272,863
6	\$	20,000,000	\$	-	\$	-	\$	-		\$	2,391,083	\$22,391,083	\$107,663,946
7	\$	27,888,399	\$	-	\$	-	\$	-		\$	3,927,403	\$31,815,802	\$139,479,748
8	\$	200,000,000	\$	-	\$	-	\$	-		\$	32,500,273	\$232,500,273	\$371,980,021
9	\$	200,000,000	\$	25,073,418	\$	-	\$	-		\$	41,546,053	\$266,619,471	\$638,599,492
10	\$	615,776,546	\$	24,539,498	\$	-	\$	-		\$	132,606,944	\$772,922,988	\$1,411,522,480
11			\$	25,012,938	\$	12,836,230	\$	-		\$	8,706,478	\$46,555,646	\$1,458,078,127
12	\$	-	\$	25,012,938	\$	12,836,230	\$	-		\$ \$	9,591,036	\$47,440,204	\$1,505,518,330
13	\$	-	\$	25,012,938	\$ \$	12,836,230	\$	-		\$ ¢	10,492,400	\$48,341,568	\$1,553,859,898
14 15	\$ \$	-	\$ ¢	11,019,582	\$ د	12,836,230	\$ ¢	-		> د	7,192,127	\$31,047,939	\$1,584,907,837
15 16	\$ \$	-	\$ \$	11,019,582	ې د	12,836,230	\$ \$	-		ې د	7,782,038	\$31,637,850 \$32,238,969	\$1,616,545,687
17	ې د	_	۶ \$	11,019,582 11,019,582	\$ \$	12,836,230	ې د	-		ې د	8,383,157 4,155,332	\$15,174,915	\$1,648,784,656 \$1,663,959,570
18	۶ \$	-	۶ \$	11,019,582	۶ \$	-	ې د	_		ې د	4,133,332	\$15,463,238	\$1,679,422,808
19	۶ \$	_	\$	11,019,582	۶ \$	_	٠ ,	_		ب (4,737,457	\$15,757,040	\$1,695,179,848
20	\$	_	\$	11,019,582	\$	_	\$	_		٠ \$	5,036,841	\$16,056,423	\$1,711,236,271
21	\$	_	\$	11,019,582	\$	_	\$	_		\$	5,341,913	\$16,361,495	\$1,727,597,767
22	\$	_	\$	11,019,582	\$	_	\$	_		\$	5,652,782	\$16,672,364	\$1,744,270,130
23	\$	_	\$	11,019,582	\$	_	\$	_		\$	5,969,556	\$16,989,139	\$1,761,259,269
24	\$	_	\$	11,019,582	\$	_	\$	_		\$	6,292,350	\$17,311,932	\$1,778,571,201
25	\$	-	\$	11,019,582	\$	-	\$	-		, \$	6,621,277	\$17,640,859	\$1,796,212,060
26	\$	-	\$	11,019,582	\$	-	\$	-		\$	6,956,453	\$17,976,035	\$1,814,188,096
27	\$	-	\$	11,019,582	\$	-	\$	-		\$	7,297,998	\$18,317,580	\$1,832,505,676
28	\$	-	\$	11,019,582	\$	-	\$	-		\$	7,646,032	\$18,665,614	\$1,851,171,290
29	\$	-	\$	11,019,582	\$	-	\$	-		\$	8,000,678	\$19,020,261	\$1,870,191,550
30	\$	-	\$	11,019,582	\$	-	\$	-		\$	8,362,063	\$19,381,646	\$1,889,573,196
31	\$	-	\$	11,019,582	\$	-	\$	-		\$	8,730,315	\$19,749,897	\$1,909,323,093
32	\$	-	\$	11,019,582	\$	-	\$	-		\$	9,105,563	\$20,125,145	\$1,929,448,238
33	\$	-	\$	11,019,582	\$	-	\$	-		\$	9,487,941	\$20,507,523	\$1,949,955,761
34	\$	-	\$	11,019,582	\$	-	\$	-		\$	9,877,583	\$20,897,166	\$1,970,852,926
35	\$	-	\$ •	11,019,582	\$	-	\$	-		Ş	10,274,630	\$21,294,212	\$1,992,147,138
36	\$ ¢	-	\$ \$	11,019,582	\$ \$	-	\$ ¢	-		\$ ¢	10,679,220	\$21,698,802	\$2,013,845,940
37	\$ ¢	-	\$ ¢	11,019,582	\$ \$	-	>	-		>	11,091,497	\$22,111,079	\$2,035,957,019
38 39	۶ د	-	۶ د	11,019,582	ç	-	۶ د	-		ې د	11,511,607	\$22,531,190	\$2,058,488,209
39 40	ې د	_	ې د	11,019,582 11,019,582	ې د	-	ې د	-		ې د	11,939,700 12,375,926	\$22,959,282 \$23,395,509	\$2,081,447,491
41	ې د	-	۶ د	11,019,582	ې د	-	ې د	_		ې د	12,820,441	\$23,840,023	\$2,104,842,999 \$2,128,683,022
42	٠ \$	_	٠ \$	11,019,582	٠ \$	_	٠ \$	_		٠ \$	13,273,401	\$24,292,984	\$2,152,976,006
43	\$	_	\$	11,019,582	\$	_	\$	_		\$	13,734,968	\$24,754,550	\$2,177,730,556
44	\$	_	\$	11,019,582	\$	_	\$	_		\$	14,205,305	\$25,224,887	\$2,202,955,443
45	\$	_	\$	11,019,582	\$	_	\$	_		\$	14,684,577	\$25,704,160	\$2,228,659,603
46	\$	-	\$	11,019,582	\$	-	\$	-		, \$	15,172,956	\$26,192,539	\$2,254,852,141
47	\$	-	\$	11,019,582	\$	-	\$	-		\$	15,670,615	\$26,690,197	\$2,281,542,338
48	\$	-	\$	11,019,582	\$	-	\$	-		\$	16,177,728	\$27,197,311	\$2,308,739,649
49	\$	-	\$	11,019,582	\$	-	\$	-		\$	16,694,477	\$27,714,060	\$2,336,453,708
50	\$	-	\$	11,019,582	\$	-	\$	-		\$	17,221,044	\$28,240,627	\$2,364,694,335
51	\$	-	\$	11,019,582	\$	-	\$	-		\$	17,757,616	\$28,777,199	\$2,393,471,533
52	\$	-	\$	11,019,582	\$	-	\$	-		\$	18,304,383	\$29,323,965	\$2,422,795,499
53	\$	-	\$	11,019,582	\$	-	\$	-		\$	18,861,538	\$29,881,121	\$2,452,676,619
54	\$	-	\$	11,019,582	\$	-	\$	-		\$	19,429,280	\$30,448,862	\$2,483,125,481
55	\$ •	-	\$ •	11,019,582	\$	-	\$ •	-		\$ \$	20,007,808	\$31,027,390	\$2,514,152,872
56	\$ ^	-	\$	11,019,582	\$	-	\$ ^	-		\$ ¢	20,597,329	\$31,616,911	\$2,545,769,782
57 50	<u>></u>	-	\$ ¢	11,019,582	\$ ¢	-	<u>></u>	-		> د	21,198,050	\$32,217,632	\$2,577,987,415
58 50	> خ	-	\$ ¢	11,019,582	\$ ¢	-	ب	-		ې د	21,810,185	\$32,829,767	\$2,610,817,182
59 60	ې د	-	\$ \$	11,019,582 11,019,582	\$ \$	-	ې د	-		ې د	22,433,950 23,069,568	\$33,453,533	\$2,644,270,714 \$2,678,359,864
60 61	ې د	-	\$ \$	11,019,582 11,019,582	\$ \$	-	ې د	-		ب د	23,069,568 23,717,261	\$34,089,150 \$34,736,844	\$2,713,096,708
62	<u>ب</u>	-	۶ \$	11,019,582	\$ \$	-	ب	-		۶ \$	24,377,261	\$35,396,844	\$2,748,493,551
Ü-	Y		Y	,0,002	Y		Y		•	~	,5,,,201	700,000,044	7 =,. 10, 100,00±

\$1,143,664,945

\$973,159,561

\$77,017,378

\$5,490,275,780



63	\$ -	\$	11,019,582	\$	-	\$	-	\$	25,049,801	\$36,069,384	\$2,784,562,935
64	\$ -	\$	11,019,582	\$	-	\$	-	\$	25,735,120	\$36,754,702	\$2,821,317,637
65	\$0	\$	11,019,582	\$	-	\$	-	\$	26,433,459	\$37,453,041	\$2,858,770,678
66	\$0	\$	11,019,582	\$	-	\$	-	\$	27,145,067	\$38,164,649	\$2,896,935,327
67	\$0	\$	11,019,582	\$	-	\$	-	\$	27,870,195	\$38,889,777	\$2,935,825,105
68	\$0	\$	11,019,582	\$	-	\$	-	\$	28,609,101	\$39,628,683	\$2,975,453,788
69	\$0	\$	11,019,582	\$	-	\$	-	\$	29,362,046	\$40,381,628	\$3,015,835,416
70	\$0	\$	11,019,582	\$	-	\$	-	\$	30,129,297	\$41,148,879	\$3,056,984,295
71	\$0	\$	11,019,582	\$	-	\$	-	\$	30,911,126	\$41,930,708	\$3,098,915,003
72	\$0	\$	11,019,582	\$	-	\$	-	\$	31,707,809	\$42,727,391	\$3,141,642,394
73	\$0	\$	11,019,582	\$	-	\$	-	\$	32,519,629	\$43,539,212	\$3,185,181,606
74	\$0	\$	11,019,582	\$	-	\$	-	\$	33,346,874	\$44,366,457	\$3,229,548,062
75	\$0	\$	11,019,582	\$	-	\$	-	\$	34,189,837	\$45,209,419	\$3,274,757,482
76	\$0	\$	11,019,582	\$	-	\$	-	\$	35,048,816	\$46,068,398	\$3,320,825,880
77	\$0	\$	11,019,582	\$	-	\$	-	\$	35,924,116	\$46,943,698	\$3,367,769,578
78	\$0	\$	11,019,582	\$	-	\$	-	\$	36,816,046	\$47,835,628	\$3,415,605,206
79	\$0	\$	11,019,582	\$	-	\$	-	\$	37,724,923	\$48,744,505	\$3,464,349,711
80	\$0	\$	11,019,582	\$	-	\$	-	\$	38,651,068	\$49,670,651	\$3,514,020,362
81	\$0	\$	11,019,582	\$	-	\$	-	\$	39,594,811	\$50,614,393	\$3,564,634,755
82	\$0	\$	11,019,582	\$	-	\$	-	\$	40,556,484	\$51,576,067	\$3,616,210,822
83	\$0	\$	11,019,582	\$	-	\$	-	\$	41,536,430	\$52,556,012	\$3,668,766,833
84	\$0	\$	11,019,582	\$	-	\$	-	\$	42,534,994	\$53,554,576	\$3,722,321,409
85	\$0	\$	11,019,582	\$	-	\$	-	\$	43,552,531	\$54,572,113	\$3,776,893,522
86	\$0	\$	11,019,582	\$	-	\$	-	\$	44,589,401	\$55,608,983	\$3,832,502,505
87	\$0	\$	11,019,582	\$	-	\$	-	\$	45,645,972	\$56,665,554	\$3,889,168,059
88	\$0	\$	11,019,582	\$	-	\$	-	\$	46,722,617	\$57,742,199	\$3,946,910,259
89	\$0	\$	11,019,582	\$	-	\$	-	\$	47,819,719	\$58,839,301	\$4,005,749,560
90	\$0	\$	11,019,582	\$	-	\$	-	\$	48,937,666	\$59,957,248	\$4,065,706,807
91				\$	-	\$	42,500,000	\$	193,134,933	\$235,634,933	\$4,301,341,740
92				\$	-	\$	40,000,000	\$	185,987,761	\$225,987,761	\$4,527,329,501
93				\$	-	\$	54,708,679	\$	260,251,275	\$314,959,953	\$4,842,289,455
94				\$	-	\$	54,708,679	\$	266,235,514	\$320,944,193	\$5,163,233,647
95				\$	-	\$	54,708,679	\$	272,333,454	\$327,042,132	\$5,490,275,780
96						\$	-	\$	-	\$0	\$5,490,275,780
97						\$	-	\$	-	\$0	\$5,490,275,780
98								\$	-	\$0	\$5,490,275,780
99								\$	-	\$0	\$5,490,275,780
100								\$	-	\$0	\$5,490,275,780
	Total		Total	Total		Total			Total		Total
	Design/Const	0&M		Cask Handling		D&D			Escalation		Life Cycle
	¢1 142 664 045		CO72 150 5C1	ć77 O1	7 270	¢246 626 026		¢2.040.007.000			ĆE 400 37E 700

\$246,626,036

\$3,049,807,860