

STUDY 1 - ALTERNATIVE STORAGE SYSTEMS FOR DUAL PURPOSE CANISTERS

COST DETAILS

ALTERNATIVE 13 - C-AGV, PILOT, LOW SEISMIC

LIFE CYCLE COST SUMMARIES



Expanded Storage Facility (10,000 MTU)

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

Expanded Project - C-AGV 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)	Capital <i>\$838,448,486</i>	Operations \$532,376,272	Transport	Decommissioning	Escalation	Total Costs \$838,448,486 \$532,376,272
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				\$181,389,912		\$181,389,912
Escalation					\$846,613,419	\$846,613,419
Total Costs (40 year Life)						\$2,437,336,778
Present Value						\$1,221,937,959
Life Cycle Costs (80 Year Life)	Capital	Operations	Transport	Decommissioning	Escalation	Total Costs
Life Cycle Costs (80 Year Life) Design & Construction	Capital <i>\$838,448,486</i>	Operations	Transport	Decommissioning	Escalation	Total Costs \$838,448,486
Design & Construction	Capital <i>\$838,448,486</i>	·	Transport	Decommissioning	Escalation	\$838,448,486
Design & Construction Operations & Maintenance (80 Year Life)	•	\$973,159,561	Transport	Decommissioning	Escalation	\$838,448,486 \$973,159,561
Design & Construction Operations & Maintenance (80 Year Life) Cask Handling	\$838,448,486	·	Transport	Decommissioning	Escalation	\$838,448,486 \$973,159,561 \$38,508,689
Design & Construction Operations & Maintenance (80 Year Life) Cask Handling Transportation Equipment	•	\$ <i>973,159,561</i> \$38,508,689	·	Decommissioning	Escalation	\$838,448,486 \$973,159,561
Design & Construction Operations & Maintenance (80 Year Life) Cask Handling Transportation Equipment Transport Operations	\$838,448,486 \$0	\$973,159,561 \$38,508,689 \$0	Transport \$0	Decommissioning	Escalation	\$838,448,486 \$973,159,561 \$38,508,689 \$0 \$0
Design & Construction Operations & Maintenance (80 Year Life) Cask Handling Transportation Equipment	\$838,448,486	\$ <i>973,159,561</i> \$38,508,689	\$0	Decommissioning	Escalation	\$838,448,486 \$973,159,561 \$38,508,689 \$0
Design & Construction Operations & Maintenance (80 Year Life) Cask Handling Transportation Equipment Transport Operations Repackaging	\$838,448,486 \$0 \$0	\$973,159,561 \$38,508,689 \$0	·	Decommissioning \$181,389,912	Escalation	\$838,448,486 \$973,159,561 \$38,508,689 \$0 \$0 \$0
Design & Construction Operations & Maintenance (80 Year Life) Cask Handling Transportation Equipment Transport Operations Repackaging Transport to Repository	\$838,448,486 \$0 \$0	\$973,159,561 \$38,508,689 \$0	\$0		Escalation	\$838,448,486 \$973,159,561 \$38,508,689 \$0 \$0 \$0 \$0
Design & Construction Operations & Maintenance (80 Year Life) Cask Handling Transportation Equipment Transport Operations Repackaging Transport to Repository D&D	\$838,448,486 \$0 \$0	\$973,159,561 \$38,508,689 \$0	\$0			\$838,448,486 \$973,159,561 \$38,508,689 \$0 \$0 \$0 \$0 \$0 \$181,389,912



STUDY 1 - ALTERNATIVE STORAGE SYSTEMS FOR DUAL PURPOSE CANISTERS

COST DETAILS

ALTERNATIVE 13 - C-AGV, PILOT, LOW SEISMIC

CAPITAL COST SUMMARY

\$0



Interim Storage Facility

Expanded Storage Facility (10,000 MTU)

Project: C-AGV Expanded (10,000 MTU) Expanded Project - C-AGV 60/40 Vertical/Horizontal - Low Seismic Separate CHB

Level 3 Cost Summary - First of A kind module

Level 1	Level 2	Level 3	Description	To cilitate and the constant in a Decimate		Level 3 Total
C-AGV EX 01	C-AGV EX 01.01			ge Facility and transportation Project	¢E10 044 40E	
	C-AGV EX 01.01		PIIOU	ISF Facility	\$510,944,405	
		C-AGV EX 01.0	01.01	Storage AGVs		\$0
		C-AGV EX 01.0		Cask Handling (Transfer) Facility		\$135,175,719
		C-AGV EX 01.0		Horizontal Dry Storage Modules		\$0
		C-AGV EX 01.0		Vertical Dry Storage Module		\$216,629,524
		C-AGV EX 01.0		Storage Cask Fabrication Facility		\$0
		C-AGV EX 01.0		Cask Maintenance Facility		\$0
		C-AGV EX 01.0		Concrete Batch Plant		\$1,850,000
		C-AGV EX 01.0		Visitor Center/ Auditorium		\$0
		C-AGV EX 01.0		Administration Building		\$3,140,000
		C-AGV EX 01.0		Security		\$24,148,975
		C-AGV EX 01.0		Rail Spur/ Receiving Yard		\$58,752,800
		C-AGV EX 01.0		Utilities		\$18,682,150
		C-AGV EX 01.0		Roads		\$18,212,737
		C-AGV EX 01.0	01.14	Parking		\$735,000
		C-AGV EX 01.0	01.15	Site Work		\$23,417,500
		C-AGV EX 01.0		Warehouse		\$10,200,000
		C-AGV EX 01.0		Maintenance Facility		\$0
		C-AGV EX 01.0		Waste management Facility		\$0
		C-AGV EX		,		1 -
		01.01.01.xx		(Add Further Breakdown as needed)		\$0
	C-AGV EX 01.02		•	nded Interim Storage Facility	\$0	
		C-AGV EX 01.0		Expanded Storage AGVs and Dry Cask Storage Sy	rstems	\$0
		C-AGV EX 01.0		Expanded Cask Handling Facility (if required)		\$0
		C-AGV EX 01.0		Horizontal Dry Storage Modules		\$0
		C-AGV EX 01.0		Vertical Dry Storage Casks		\$0
		C-AGV EX 01.0		Storage Cask Fabrication Facility (Expanded)		\$0
		C-AGV EX 01.0		Cask Maintenance Facility (Expanded)		\$0
		C-AGV EX 01.0		Concrete Batch Plant (Expanded if needed)		\$0
		C-AGV EX 01.0		Visitor Center/ Auditorium (expanded if needed))	\$0
		C-AGV EX 01.0		Administration Building (Expanded if needed)		\$0
		C-AGV EX 01.0		Security (Expanded)		\$0
		C-AGV EX 01.0		Rail Spur/ Receiving Yard (Expanded)		\$0
		C-AGV EX 01.0		Utilities Expanded as needed)		\$0
		C-AGV EX 01.0		Roads (Expanded)		\$0
		C-AGV EX 01.0		Parking (Expanded as needed)		\$0
		C-AGV EX 01.0		Site Work (Expanded)		\$0
		C-AGV EX 01.0		Warehouse (Expanded if Needed)		\$0
		C-AGV EX 01.0		Maintenance Facility (Expanded if needed)		\$0
		C-AGV EX 01.0		Waste management Facility (Expanded if needed	d)	\$0
		C-AGV EX 01.0		Hot Cell / Laboratories		\$0
		C-AGV EX 01.0		Pool Packaging Facility		\$0
		C-AGV EX 01.0		Standardized Storage System		\$0
		C-AGV EX 01.0		Standardized Disposal Canister		\$0
		C-AGV EX 01.0		Canister Repackaging Facility (For Repository	4.0	\$0
	C-AGV EX 01.03	C ACV 5 V 2 C		portation Equipment	\$0	.
		C-AGV EX 01.0		Transportation Casks		\$0
		C-AGV EX 01.0		Rail Equipment		\$0 \$0
		C-AGV EX 01.0		Rail Maintenance Facility		\$0 \$0
		C-AGV EX 01.0	J3.U4	Transportation Systems Services		\$0
	C-AGV EX 01.04		Pro_C	onstruction Capitalized Costs	\$66,025,000	
	5 / GV L/ 01.04	C-AGV EX 01.0		Land or Land Leases	700,020,000	\$7,680,000
		C-AGV EX 01.0		Site permits		\$200,000
		C-AGV EX 01.0		Site Licensing		\$6,240,000
		C-AGV EX 01.		Plant Permits		\$0,2 10,000

Plant Permits

C-AGV EX 01.04.05



C-AGV EX 01.04.06	Planning and Alternative Studies	\$750,000
C-AGV EX 01.04.07	Research and Development	\$0
C-AGV EX 01.04.08	Design	\$23,955,000
C-AGV EX 01.04.09	Other Pre-construction Costs	\$17,200,000
C-AGV EX 01.04.10	Pre-construction contingencies	\$10,000,000
C-AGV EX 01.04.xx	(Add Further Breakdown as needed)	\$0
C-AGV EX 01.05	Indirect Capitalized Costs \$63,180,000	ć2 7 00 000
C-AGV EX 01.05.01	Project Management	\$2,700,000
C-AGV EX 01.05.02	Construction Management	\$3,600,000
C-AGV EX 01.05.03	Field indirect services	\$11,880,000
C-AGV EX 01.05.04	Design Services in support of Construction	\$5,400,000
C-AGV EX 01.05.05	QA/QC	\$12,600,000
C-AGV EX 01.05.06	Commissioning and Startup	\$1,200,000
C-AGV EX 01.05.07 C-AGV EX 01.05.08	Home office Engineering support to Construction	\$7,200,000
	Document Control	\$2,700,000
C-AGV EX 01.05.09	Project Controls	\$3,600,000
C-AGV EX 01.05.10 C-AGV EX 01.05.11	Construction Testing	\$2,700,000
	Inspections Startus and Tasting	\$3,600,000
C-AGV EX 01.05.12	Startup and Testing	\$3,000,000
C-AGV EX 01.05.13	Commissioning	\$3,000,000
C-AGV EX 01.06	Site Selection \$0	ćo
C-AGV EX 01.06.01	Site Selection	\$0 \$0
C-AGV EX 01.06.02	Public Information Process	\$0
C-AGV EX 01.07	Decontamination and Deconstruction \$0	ćo
C-AGV EX 01.07.01 C-AGV EX 01.07.02	Decommissioning	\$0 \$0
	Decontamination	\$0 \$0
C-AGV EX 01.07.03	Deconstruction	\$0 \$0
C-AGV EX 01.07.04		\$0 \$0
C-AGV EX 01.07.05	Project Financial Costs	\$0
C-AGV EX 01.08	Project Financial Costs \$85,780,020 Contractor Fees	¢E1 211 0E2
C-AGV EX 01.08.01		\$51,211,952
C-AGV EX 01.08.02	Escalation Costs	\$34,568,068
C-AGV EX 01.08.03 C-AGV EX 01.08.04	Interest Payments	\$0 \$0
C-AGV EX 01.08.05	Indirect costs to support shipments to repository	\$0 \$0
C-AGV EX 01.08.03	(Add Further Breakdown as needed)	\$0 \$0
C-AGV EX 01.00.XX	IAUU FULLIEL DIEAKUUWII AS HEEUEUI	ŞU
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C ACV EV 01 00	, , , , , , , , , , , , , , , , , , ,	
C-AGV EX 01.09	Project Contingencies \$112,519,061	\$26 206 471
C-AGV EX 01.09.01	Project Contingencies \$112,519,061 Management Reserve - Contractor Held	\$36,296,471
	Project Contingencies \$112,519,061	\$36,296,471 \$76,222,590
C-AGV EX 01.09.01 C-AGV EX 01.09.02	Project Contingencies \$112,519,061 Management Reserve - Contractor Held	
C-AGV EX 01.09.01 C-AGV EX 01.09.02 C-AGV EX 01.10	Project Contingencies \$112,519,061 Management Reserve - Contractor Held Contingency - DOE held	
C-AGV EX 01.09.01 C-AGV EX 01.09.02 C-AGV EX 01.10 C-AGV EX 01.10.01	Project Contingencies \$112,519,061 Management Reserve - Contractor Held Contingency - DOE held Other Direct Costs \$0	\$76,222,590
C-AGV EX 01.09.01 C-AGV EX 01.09.02 C-AGV EX 01.10 C-AGV EX 01.10.01 C-AGV EX 01.10.02	Project Contingencies \$112,519,061 Management Reserve - Contractor Held Contingency - DOE held Other Direct Costs \$0 DOE Project Operations	\$76,222,590 \$0
C-AGV EX 01.09.01 C-AGV EX 01.09.02 C-AGV EX 01.10 C-AGV EX 01.10.01	Project Contingencies \$112,519,061 Management Reserve - Contractor Held Contingency - DOE held Other Direct Costs \$0 DOE Project Operations DOE TM&E	\$76,222,590
C-AGV EX 01.09.01 C-AGV EX 01.09.02 C-AGV EX 01.10 C-AGV EX 01.10.01 C-AGV EX 01.10.02 C-AGV EX 01.10.03	Project Contingencies \$112,519,061 Management Reserve - Contractor Held Contingency - DOE held Other Direct Costs \$0 DOE Project Operations DOE TM&E Host site Operational	\$76,222,590 \$0 \$0
C-AGV EX 01.09.01 C-AGV EX 01.09.02 C-AGV EX 01.10 C-AGV EX 01.10.01 C-AGV EX 01.10.02 C-AGV EX 01.10.03	Project Contingencies \$112,519,061 Management Reserve - Contractor Held Contingency - DOE held Other Direct Costs \$0 DOE Project Operations DOE TM&E Host site Operational Costs Miscellaneous	\$76,222,590 \$0 \$0 \$0
C-AGV EX 01.09.01 C-AGV EX 01.09.02 C-AGV EX 01.10 C-AGV EX 01.10.01 C-AGV EX 01.10.02 C-AGV EX 01.10.03	Project Contingencies \$112,519,061 Management Reserve - Contractor Held Contingency - DOE held Other Direct Costs \$0 DOE Project Operations DOE TM&E Host site Operational	\$76,222,590 \$0 \$0
C-AGV EX 01.09.01 C-AGV EX 01.09.02 C-AGV EX 01.10 C-AGV EX 01.10.01 C-AGV EX 01.10.02 C-AGV EX 01.10.03 C-AGV EX 01.10.04 C-AGV EX 01.10.05	Project Contingencies \$112,519,061 Management Reserve - Contractor Held Contingency - DOE held Other Direct Costs \$0 DOE Project Operations DOE TM&E Host site Operational Costs Miscellaneous Miscellaneous ODC	\$76,222,590 \$0 \$0 \$0
C-AGV EX 01.09.01 C-AGV EX 01.09.02 C-AGV EX 01.10 C-AGV EX 01.10.01 C-AGV EX 01.10.02 C-AGV EX 01.10.03	Project Contingencies \$112,519,061 Management Reserve - Contractor Held Contingency - DOE held Other Direct Costs \$0 DOE Project Operations DOE TM&E Host site Operational Costs Miscellaneous Miscellaneous ODC Operational Costs 0	\$76,222,590 \$0 \$0 \$0 \$0
C-AGV EX 01.09.01 C-AGV EX 01.09.02 C-AGV EX 01.10 C-AGV EX 01.10.01 C-AGV EX 01.10.02 C-AGV EX 01.10.03 C-AGV EX 01.10.04 C-AGV EX 01.10.05 C-AGV EX 01.11.01	Project Contingencies \$112,519,061 Management Reserve - Contractor Held Contingency - DOE held Other Direct Costs \$0 DOE Project Operations DOE TM&E Host site Operational Costs Miscellaneous Miscellaneous ODC Operational Costs Operations Costs	\$76,222,590 \$0 \$0 \$0 \$0
C-AGV EX 01.09.01 C-AGV EX 01.09.02 C-AGV EX 01.10 C-AGV EX 01.10.01 C-AGV EX 01.10.03 C-AGV EX 01.10.04 C-AGV EX 01.10.05 C-AGV EX 01.11.01 C-AGV EX 01.11.01	Project Contingencies \$112,519,061 Management Reserve - Contractor Held Contingency - DOE held Other Direct Costs \$0 DOE Project Operations DOE TM&E Host site Operational Costs Miscellaneous Miscellaneous ODC Operational Costs Operations Costs Transportation Costs	\$76,222,590 \$0 \$0 \$0 \$0
C-AGV EX 01.09.01 C-AGV EX 01.09.02 C-AGV EX 01.10 C-AGV EX 01.10.01 C-AGV EX 01.10.02 C-AGV EX 01.10.03 C-AGV EX 01.10.04 C-AGV EX 01.10.05 C-AGV EX 01.11.01	Project Contingencies \$112,519,061 Management Reserve - Contractor Held Contingency - DOE held Other Direct Costs \$0 DOE Project Operations DOE TM&E Host site Operational Costs Miscellaneous Miscellaneous ODC Operational Costs Operations Costs	\$76,222,590 \$0 \$0 \$0 \$0
C-AGV EX 01.09.01 C-AGV EX 01.09.02 C-AGV EX 01.10 C-AGV EX 01.10.01 C-AGV EX 01.10.03 C-AGV EX 01.10.04 C-AGV EX 01.10.05 C-AGV EX 01.11.01 C-AGV EX 01.11.01	Project Contingencies \$112,519,061 Management Reserve - Contractor Held Contingency - DOE held Other Direct Costs \$0 DOE Project Operations DOE TM&E Host site Operational Costs Miscellaneous Miscellaneous ODC Operational Costs Operations Costs Transportation Costs	\$76,222,590 \$0 \$0 \$0 \$0
C-AGV EX 01.09.01 C-AGV EX 01.09.02 C-AGV EX 01.10 C-AGV EX 01.10.01 C-AGV EX 01.10.03 C-AGV EX 01.10.04 C-AGV EX 01.10.05 C-AGV EX 01.11.01 C-AGV EX 01.11.01	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 Transportation Costs Escalation (Operations/Transportation)	\$76,222,590 \$0 \$0 \$0 \$0 \$0
C-AGV EX 01.09.01 C-AGV EX 01.09.02 C-AGV EX 01.10 C-AGV EX 01.10.01 C-AGV EX 01.10.03 C-AGV EX 01.10.04 C-AGV EX 01.10.05 C-AGV EX 01.11.01 C-AGV EX 01.11.01	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 Transportation Costs Escalation (Operations/Transportation) TEC (All Direct & indirect Costs, MR, Escalation)	\$76,222,590 \$0 \$0 \$0 \$0 \$0 \$0 \$0
C-AGV EX 01.09.01 C-AGV EX 01.09.02 C-AGV EX 01.10 C-AGV EX 01.10.01 C-AGV EX 01.10.03 C-AGV EX 01.10.04 C-AGV EX 01.10.05 C-AGV EX 01.11.01 C-AGV EX 01.11.01	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 Transportation Costs Escalation (Operations/Transportation)	\$76,222,590 \$0 \$0 \$0 \$0 \$0

Project Total



STUDY 1 - ALTERNATIVE STORAGE SYSTEMS FOR DUAL PURPOSE CANISTERS

COST DETAILS

ALTERNATIVE 13 - C-AGV, PILOT, LOW SEISMIC

LIFE CYCLE COST - 40 YEAR OPERATING LIFE



Expanded Storage Facility (10,000 MTU)

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

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

Separate CHE

Separa									Anı	nual Escalation			Dis	count Rate
	·	erating life								1.90%				3.40%
YEAR 1	; \$	Design/Const 10,000,000	\$	0&M		ask Handling sk Handling	\$	D&D	\$	Escalation 190,000	Ar \$	10,190,000	\$	Cumulative 10,190,000
2	\$	10,000,000	\$	-	Ś	-	\$	_	\$	383,610	\$	10,130,000	\$	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	\$	310,560,087	\$	24,539,498	\$	-	\$	-	\$	69,397,811	\$	404,497,395	\$	1,043,096,888
11			\$	25,012,938	\$	-	\$	-	\$	5,753,749	\$	30,766,687	\$	1,073,863,575
12	\$	-	\$	25,012,938	\$	12,836,230	\$	-	\$	9,591,036	\$	47,440,204	\$	1,121,303,779
13	\$	-	\$	25,012,938	\$	12,836,230	\$	-	\$	10,492,400	\$	48,341,568	\$	1,169,645,346
14	\$	-	\$	11,019,582	\$	12,836,230	\$	-	\$	7,192,127	\$	31,047,939	\$	1,200,693,285
15	\$	-	\$	11,019,582	\$	-	\$	-	\$	3,594,713	\$	14,614,296	\$	1,215,307,581
16	\$	-	\$	11,019,582	\$	-	\$	-	\$	3,872,385	\$	14,891,967	\$	1,230,199,548
17	\$	-	\$	11,019,582	\$	-	\$	-	\$	4,155,332	\$	15,174,915	\$	1,245,374,463
18	\$	-	\$	11,019,582	\$	-	\$	-	\$	4,443,656	\$	15,463,238	\$	1,260,837,701
19	\$	-	\$	11,019,582	\$	-	\$	-	\$	4,737,457	\$	15,757,040	\$	1,276,594,740
20	\$	-	\$	11,019,582	\$	-	\$	-	\$	5,036,841	\$	16,056,423	\$	1,292,651,164
21	\$	-	\$ •	11,019,582	\$	-	\$	-	\$	5,341,913	\$	16,361,495	\$ •	1,309,012,659
22	\$	-	\$	11,019,582	\$	-	\$	-	\$	5,652,782	\$	16,672,364	\$	1,325,685,023
23	\$ \$	-	\$ \$	11,019,582	\$	-	\$	-	\$ \$	5,969,556	\$	16,989,139	\$ \$	1,342,674,161
24	\$ ¢	-	\$ ¢	11,019,582	\$ ¢	-	\$ ¢	-	\$ \$	6,292,350	\$	17,311,932	\$ ¢	1,359,986,094
25 26	\$ د	-	\$ ¢	11,019,582	\$ ¢	-	\$ ¢	-	\$ د	6,621,277	\$ ¢	17,640,859	\$ ¢	1,377,626,953
26	\$ د	-	\$ ¢	11,019,582	\$ ¢	-	\$ ¢	-	\$ د	6,956,453	\$ ¢	17,976,035	\$	1,395,602,988
27 28	Ş د	-	ç	11,019,582	۶ د	-	Ş د	-	ç	7,297,998	\$ ¢	18,317,580	\$ ¢	1,413,920,568
28 29	ې د	-	ې د	11,019,582 11,019,582	ې د	-	ې د	_	ې د	7,646,032 8,000,678	ې د	18,665,614 19,020,261	ې د	1,432,586,182 1,451,606,443
30	ې د	-	ې د	11,019,582	ې د	-	ې د	_	ې د	8,362,063	ې د	19,381,646	ې د	1,470,988,088
31	ς ς	_	\$	11,019,582	\$	_	\$	_	\$	8,730,315	ς ς	19,749,897	\$	1,490,737,985
32	ς ς	_	\$	11,019,582	\$	_	\$	_	\$	9,105,563	ς ς	20,125,145	\$	1,510,863,130
33	\$	_	\$	11,019,582	\$	_	\$	_	\$	9,487,941	\$	20,507,523	\$	1,531,370,653
34	\$	-	\$	11,019,582	\$	-	\$	_	\$	9,877,583	\$	20,897,166	\$	1,552,267,819
35	\$	-	\$	11,019,582	\$	-	\$	_	\$	10,274,630	\$	21,294,212	\$	1,573,562,030
36	\$	-	\$	11,019,582	\$	-	\$	_	\$	10,679,220	\$	21,698,802	\$	1,595,260,832
37	\$	-	\$	11,019,582	\$	-	\$	_	\$	11,091,497	\$	22,111,079	\$	1,617,371,911
38	\$	-	\$	11,019,582	\$	-	\$	-	\$	11,511,607	\$	22,531,190	\$	1,639,903,101
39	\$	-	\$	11,019,582	\$	-	\$	-	\$	11,939,700	\$	22,959,282	\$	1,662,862,383
40	\$	-	\$	11,019,582	\$	-	\$	-	\$	12,375,926	\$	23,395,509	\$	1,686,257,891
41	\$	-	\$	11,019,582	\$	-	\$	-	\$	12,820,441	\$	23,840,023	\$	1,710,097,915
42	\$	-	\$	11,019,582	\$	-	\$	-	\$	13,273,401	\$	24,292,984	\$	1,734,390,898
43	\$	-	\$	11,019,582	\$	-	\$	-	\$	13,734,968	\$	24,754,550	\$	1,759,145,448
44	\$	-	\$	11,019,582	\$	-	\$	-	\$	14,205,305	\$	25,224,887	\$	1,784,370,335
45	\$	-	\$	11,019,582	\$	-	\$	-	\$	14,684,577	\$	25,704,160	\$	1,810,074,495
46	\$	-	\$	11,019,582	\$	-	\$	-	\$	15,172,956	\$	26,192,539	\$	1,836,267,033
47	\$	-	\$	11,019,582	\$	-	\$	-	\$	15,670,615	\$	26,690,197	\$	1,862,957,230
48	\$	-	\$	11,019,582	\$	-	\$	-	\$	16,177,728	\$	27,197,311	\$	1,890,154,541
49	\$	-	\$	11,019,582	\$	-	\$	-	\$	16,694,477	\$	27,714,060	\$	1,917,868,600
50	\$	-	\$	11,019,582	\$	-	\$	-	\$	17,221,044	\$	28,240,627	\$	1,946,109,227
51	\$	-	\$	-	\$	-	\$	42,500,000	\$	68,487,052	\$	110,987,052	\$	2,057,096,279
52 	\$	-	\$ •	-	\$	-	\$	26,000,000	\$	43,188,022	\$	69,188,022	\$	2,126,284,301
53 54	\$	-	\$	-	\$ ^	-	\$	37,629,971	\$	64,408,897	\$ }	102,038,868	\$	2,228,323,169
54	\$ \$	-	\$ \$	-	\$	-	\$	37,629,971	\$ \$	66,347,636	\$ \$	103,977,606	\$ \$	2,332,300,775
55 56	<u>></u>	-	<u>></u>	-	\$ ¢	-	<u>></u>	37,629,971	<u>></u>	68,323,210	> د	105,953,181	>	2,438,253,956
56 57	ې	-	ب	-	ک ج	-	>	-	ب	-	ې خ	-	پ	2,438,253,956
57 58	ې	-	ب	-	\$ ¢	-	\$ ¢	-	\$ ¢	-	ې خ	-	پ	2,438,253,956
58 59	ې د	-	ې د	-	ې د	-	\$ \$	-	ې د	-	ې د	-	ې د	2,438,253,956 2,438,253,956
60	٠ ج	-	ب ج	-	ب (-	۶ \$	-	۶ \$	-	٠ ر	-	ب ¢	2,438,253,956
00	ب	-	ب	-	ٻ	-	ڔ	-	ب	-	ٻ	-	ڔ	۵, ۳ 50,233,330
		Total		Total				Total		Total				Total
		Design/Const		O&M				D&D		Escalation				Life Cycle
	\$	838,448,486	\$	532,376,272	\$	38,508,689	\$	181,389,912	\$	847,530,598			\$	2,438,253,956



STUDY 1 - ALTERNATIVE STORAGE SYSTEMS FOR DUAL PURPOSE CANISTERS

COST DETAILS

ALTERNATIVE 13 - C-AGV, PILOT, LOW SEISMIC

LIFE CYCLE COST - 80 YEAR OPERATING LIFE



Expanded Storage Facility (10,000 MTU)

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

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

Separate CHB

80 Year Operating Life

ou rea	ı Ol	beratting Line							,	Annı	ual Escalation		Discount Rate
											1.90%		3.40%
		<u>.</u>										Annual	
YEAR		Design/Const		0&M		Cask Handling		D&D			Escalation	Expense	Cumulative
1	\$	10,000,000	\$	-		sk Handling	\$	-		\$	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	\$	310,560,087	\$	24,539,498	\$	-	\$	-		\$	69,397,811	\$404,497,395	\$1,043,096,888
11			\$	25,012,938	\$	-	\$	-		\$	5,753,749	\$30,766,687	\$1,073,863,575
12	\$	-	\$	25,012,938	\$	12,836,230	\$	-		\$	9,591,036	\$47,440,204	\$1,121,303,779
13	\$	_	\$	25,012,938	\$	12,836,230	\$	-		\$	10,492,400	\$48,341,568	\$1,169,645,346
14	\$	_	\$	11,019,582	\$	12,836,230	\$	-		\$	7,192,127	\$31,047,939	\$1,200,693,285
15	\$	_	\$	11,019,582	\$	-	\$	_		\$	3,594,713	\$14,614,296	\$1,215,307,581
16	\$	_	\$	11,019,582	\$	_	\$	_		\$	3,872,385	\$14,891,967	\$1,230,199,548
17	\$	_	\$	11,019,582	\$	_	\$	_		\$	4,155,332	\$15,174,915	\$1,245,374,463
18	\$	_	\$	11,019,582	\$	_	\$	_		ς .	4,443,656	\$15,463,238	\$1,260,837,701
19	ς ,	_	ς ς	11,019,582	\$	_	ς ,	_		ς ,	4,737,457	\$15,757,040	\$1,276,594,740
20	¢	_	¢	11,019,582	\$	_	¢	_		¢	5,036,841	\$16,056,423	\$1,292,651,164
21	ç	_	¢	11,019,582	\$		¢			ب ذ	5,341,913	\$16,361,495	\$1,309,012,659
22	ې خ	_	ې خ		ې خ	-	ې د	-		ې د		\$16,672,364	
	ې ک	-	ې د	11,019,582	ې خ	-	ې د	-		ې د	5,652,782		\$1,325,685,023
23	۶ ک	-	ې د	11,019,582	ې د	-	۶ ۲	-		ې د	5,969,556	\$16,989,139	\$1,342,674,161
24	Ş	-	<u>۲</u>	11,019,582	۶ د	-	\$ ¢	-		>	6,292,350	\$17,311,932	\$1,359,986,094
25	\$	-	\$	11,019,582	\$	-	\$	-		\$ \$	6,621,277	\$17,640,859	\$1,377,626,953
26	\$	-	\$	11,019,582	\$	-	\$	-		\$	6,956,453	\$17,976,035	\$1,395,602,988
27	\$	-	\$	11,019,582	\$	-	\$	-		\$	7,297,998	\$18,317,580	\$1,413,920,568
28	\$,	-	\$	11,019,582	\$	-	\$	-		Ş	7,646,032	\$18,665,614	\$1,432,586,182
29	\$	-	\$	11,019,582	\$	-	\$	-		\$	8,000,678	\$19,020,261	\$1,451,606,443
30	\$	-	\$	11,019,582	\$	-	\$	-		\$	8,362,063	\$19,381,646	\$1,470,988,088
31	\$	-	\$	11,019,582	\$	-	\$	-		\$	8,730,315	\$19,749,897	\$1,490,737,985
32	\$	-	\$	11,019,582	\$	-	\$	-		\$	9,105,563	\$20,125,145	\$1,510,863,130
33	\$	-	\$	11,019,582	\$	-	\$	-		\$	9,487,941	\$20,507,523	\$1,531,370,653
34	\$	-	\$	11,019,582	\$	-	\$	-		\$	9,877,583	\$20,897,166	\$1,552,267,819
35	\$	-	\$	11,019,582	\$	-	\$	-		\$	10,274,630	\$21,294,212	\$1,573,562,030
36	\$	-	\$	11,019,582	\$	-	\$	-		\$	10,679,220	\$21,698,802	\$1,595,260,832
37	\$	-	\$	11,019,582	\$	-	\$	-		\$	11,091,497	\$22,111,079	\$1,617,371,911
38	\$	-	\$	11,019,582	\$	-	\$	-		\$	11,511,607	\$22,531,190	\$1,639,903,101
39	\$	-	\$	11,019,582	\$	-	\$	-		\$	11,939,700	\$22,959,282	\$1,662,862,383
40	\$	-	\$	11,019,582	\$	-	\$	-		\$	12,375,926	\$23,395,509	\$1,686,257,891
41	\$	-	\$	11,019,582	\$	-	\$	-		\$	12,820,441	\$23,840,023	\$1,710,097,915
42	\$	-	\$	11,019,582	\$	-	\$	-		\$	13,273,401	\$24,292,984	\$1,734,390,898
43	\$	-	\$	11,019,582	\$	-	\$	-		\$	13,734,968	\$24,754,550	\$1,759,145,448
44	\$	-	\$	11,019,582	\$	-	\$	-		\$	14,205,305	\$25,224,887	\$1,784,370,335
45	\$	_	\$	11,019,582	\$	-	\$	-		\$	14,684,577	\$25,704,160	\$1,810,074,495
46	\$	_	\$	11,019,582	\$	-	\$	-		\$	15,172,956	\$26,192,539	\$1,836,267,033
47	\$	_	\$	11,019,582	\$	-	\$	_		\$	15,670,615	\$26,690,197	\$1,862,957,230
48	\$	_	\$	11,019,582	\$	-	\$	_		\$	16,177,728	\$27,197,311	\$1,890,154,541
49	\$	_	\$	11,019,582	\$	_	\$	_		\$	16,694,477	\$27,714,060	\$1,917,868,600
50	\$	_	Ś	11,019,582	; \$	_	\$	_		; \$	17,221,044	\$28,240,627	\$1,946,109,227
51	\$	_	\$	11,019,582	\$	_	\$	_		\$	17,757,616	\$28,777,199	\$1,974,886,426
52	\$	_	\$	11,019,582	\$	_	\$	_		\$	18,304,383	\$29,323,965	\$2,004,210,391
53	\$	_	ς ,	11,019,582	ς ,	_	ς'	-		Ś	18,861,538	\$29,881,121	\$2,034,091,512
54	ς .	-	¢	11,019,582	ς ,	_	ς ς	-		ς ς	19,429,280	\$30,448,862	\$2,064,540,374
55	ς .	-	¢	11,019,582	ς ,	_	ς ς	-		ς ς	20,007,808	\$30,440,802	\$2,095,567,764
56	ب د	-	۶ \$	11,019,582	¢	_	ب د	-		۶ \$	20,597,329	\$31,616,911	\$2,127,184,675
50 57	ب د	-	۶ \$	11,019,582	ب د	-	ب د	-		۶ \$	21,198,050	\$32,217,632	\$2,159,402,307
58	ب د	-	۶ \$	11,019,582	ب د	-	۶ \$	-		۶ \$	21,810,185	\$32,829,767	\$2,192,232,074
50	ڔ	-	ڔ	11,013,304	٧	-	ڔ	-		Ų	21,010,103	,52,023,101	76,176,636,U/4

\$838,448,486

\$973,159,561

\$4,691,986,740



100		otal						\$	-	\$0	\$4,691,986,740
99								ب \$	-	\$0 \$0	\$4,691,986,740
97 98						\$	-	\$ د	-	\$0 \$0	\$4,691,986,740 \$4,691,986,740
96						\$ \$	-	\$	-	\$0	\$4,691,986,740
95					\$ -	\$	37,629,971	\$	187,317,627	\$224,947,598	\$4,691,986,740
94					\$ -	\$	37,629,971	\$	183,123,315	\$220,753,286	\$4,467,039,142
93					\$ -	\$	37,629,971	\$	179,007,209	\$216,637,179	\$4,246,285,856
92					\$ -	\$	26,000,000	\$	120,892,045	\$146,892,045	\$4,029,648,677
91					\$ -	\$	42,500,000	\$	193,134,933	\$235,634,933	\$3,882,756,632
90		\$0	\$	11,019,582	\$ -	\$	-	\$	48,937,666	\$59,957,248	\$3,647,121,700
89		\$0	\$	11,019,582	\$ -	\$	-	\$	47,819,719	\$58,839,301	\$3,587,164,452
88		\$0	\$	11,019,582	\$ -	\$	-	\$	46,722,617	\$57,742,199	\$3,528,325,151
87		\$0	\$	11,019,582	\$ -	\$	-	\$	45,645,972	\$56,665,554	\$3,470,582,951
86		\$0	\$	11,019,582	\$ -	\$	-	\$	44,589,401	\$55,608,983	\$3,413,917,398
85		\$0	\$	11,019,582	\$ -	\$	-	\$	43,552,531	\$54,572,113	\$3,358,308,415
84		\$0	\$	11,019,582	\$ -	\$	-	\$	42,534,994	\$53,554,576	\$3,303,736,302
83		\$0	\$	11,019,582	\$ -	\$	-	\$	41,536,430	\$52,556,012	\$3,250,181,726
82		\$0	\$	11,019,582	\$ -	\$	-	\$	40,556,484	\$51,576,067	\$3,197,625,714
81		\$0	\$	11,019,582	\$ -	\$	-	\$	39,594,811	\$50,614,393	\$3,146,049,647
80		\$0	\$	11,019,582	\$ -	\$	-	\$	38,651,068	\$49,670,651	\$3,095,435,254
79		\$0	\$	11,019,582	\$ -	\$	-	\$	37,724,923	\$48,744,505	\$3,045,764,604
78		\$0	\$	11,019,582	\$ -	\$	-	\$	36,816,046	\$47,835,628	\$2,997,020,098
77		\$0	\$	11,019,582	\$ -	\$	-	\$	35,924,116	\$46,943,698	\$2,949,184,470
76		\$0	\$	11,019,582	\$ -	\$	-	\$	35,048,816	\$46,068,398	\$2,902,240,772
75		\$0	\$	11,019,582	\$ -	\$	-	\$	34,189,837	\$45,209,419	\$2,856,172,374
74		\$0	\$	11,019,582	\$ -	\$	-	\$	33,346,874	\$44,366,457	\$2,810,962,955
73		\$0	\$	11,019,582	\$ -	\$	-	\$	32,519,629	\$43,539,212	\$2,766,596,498
72		\$0	\$	11,019,582	\$ -	\$	-	\$	31,707,809	\$42,727,391	\$2,723,057,286
71		\$0	\$	11,019,582	\$ -	\$	-	\$	30,911,126	\$41,930,708	\$2,680,329,895
70		\$0	\$	11,019,582	\$ -	\$	-	\$	30,129,297	\$41,148,879	\$2,638,399,187
69		\$0	\$	11,019,582	\$ -	\$	-	\$	29,362,046	\$40,381,628	\$2,597,250,308
68		\$0	\$	11,019,582	\$ -	\$	-	\$	28,609,101	\$39,628,683	\$2,556,868,680
67		\$0	\$	11,019,582	\$ -	\$	-	\$	27,870,195	\$38,889,777	\$2,517,239,997
66		\$0	\$	11,019,582	\$ -	\$	-	\$	27,145,067	\$38,164,649	\$2,478,350,219
65		\$0	\$	11,019,582	\$ -	\$	-	\$	26,433,459	\$37,453,041	\$2,440,185,570
64	\$	_	\$	11,019,582	\$ -	\$	-	\$	25,735,120	\$36,754,702	\$2,402,732,529
63	\$	-	\$	11,019,582	\$ -	\$	-	\$	25,049,801	\$36,069,384	\$2,365,977,827
62	\$	_	\$	11,019,582	\$ -	\$	-	\$	24,377,261	\$35,396,844	\$2,329,908,443
61	, \$	_	, \$	11,019,582	\$ _	\$	_	\$	23,717,261	\$34,736,844	\$2,294,511,600
60	\$	-	\$	11,019,582	\$ -	- 5	-	5	23,069,568	\$34,089,150	\$2,259,774,756

\$38,508,689

\$181,389,912

\$2,660,480,093



STUDY 1 - ALTERNATIVE STORAGE SYSTEMS FOR DUAL PURPOSE CANISTERS

COST DETAILS

ALTERNATIVE 14 - C-AGV, PILOT, HIGH SEISMIC

LIFE CYCLE COST SUMMARIES



Pilot Storage Facility (5,000 MTU)

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

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

Separate CHB

Annual Escalation Factor 1.90% Discount Rate 3.40%

Life Cycle Costs (40 Year Life)	Capital	Operations	Transport	Decommissioning	Escalation	Total Costs
Design & Construction	\$875,276,914	4				\$875,276,914
Operations & Maintenance (40 Year Life)		\$532,376,272				\$532,376,272
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					\$863,778,686	\$863,778,686
Total Costs (40 year Life)						\$2,496,739,218
Present Value						\$1,256,216,493
Life Cycle Costs (80 Year Life)	Capital	Operations	Transport	Decommissioning	Escalation	Total Costs
Design & Construction	\$875,276,914	-		0		\$875,276,914
•	,, -,-					
Operations & Waintenance (80 Year Lite)		\$973.159.561				S9/3.159.561
Operations & Maintenance (80 Year Life) Cask Handlina		<i>\$973,159,561</i> \$38.508.689				\$973,159,561 \$38.508.689
Cask Handling	\$0	<i>\$973,159,561</i> \$38,508,689				\$38,508,689
Cask Handling Transportation Equipment	\$0	\$38,508,689	\$0			\$38,508,689 \$0
Cask Handling Transportation Equipment Transport Operations		\$38,508,689	\$0			\$38,508,689 \$0 \$0
Cask Handling Transportation Equipment Transport Operations Repackaging	\$0	\$38,508,689				\$38,508,689 \$0 \$0 \$0
Cask Handling Transportation Equipment Transport Operations Repackaging Transport to Repository		\$38,508,689	\$0 \$0	\$186 798 657		\$38,508,689 \$0 \$0 \$0 \$0 \$0
Cask Handling Transportation Equipment Transport Operations Repackaging Transport to Repository D&D	\$0	\$38,508,689		\$186,798,657	\$2 693 514 919	\$38,508,689 \$0 \$0 \$0 \$0 \$186,798,657
Cask Handling Transportation Equipment Transport Operations Repackaging Transport to Repository	\$0	\$38,508,689		\$186,798,657	\$2,693,514,919	\$38,508,689 \$0 \$0 \$0 \$0 \$0
Cask Handling Transportation Equipment Transport Operations Repackaging Transport to Repository D&D	\$0	\$38,508,689		\$186,798,657	\$2,693,514,919	\$38,508,689 \$0 \$0 \$0 \$0 \$186,798,657



STUDY 1 - ALTERNATIVE STORAGE SYSTEMS FOR DUAL PURPOSE CANISTERS

COST DETAILS

ALTERNATIVE 14 - C-AGV, PILOT, HIGH SEISMIC

CAPITAL COST SUMMARY

\$0



Interim Storage Facility

Pilot Storage Facility (5,000 MTU)

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

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

Separate CHB

evel 3 Cost Summ	ary - First of A kind	module		
Level 1	Level 2	Level 3 Descrip	ption	Level 3 Total
C-AGV LE EX 01		Interim	n Storage Facility and transportation Project	
	C-AGV LE EX 01.01		Pilot ISF Facility \$539,062,64	16
	,	S A C V I F F V O A O A O A	State ACM F	Ć0
		C-AGV LE EX 01.01.01 C-AGV LE EX 01.01.02	Storage AGV LE s Cask Handling (Transfer) Facility	\$0 \$163,293,960
		C-AGV LE EX 01.01.03	Horizontal Dry Storage Modules	\$103,293,900
		C-AGV LE EX 01.01.04	Vertical Dry Storage Module	\$216,629,524
		C-AGV LE EX 01.01.05	Storage Cask Fabrication Facility	\$0
		C-AGV LE EX 01.01.06	Cask Maintenance Facility	\$0
	C	C-AGV LE EX 01.01.07	Concrete Batch Plant	\$1,850,000
	C	C-AGV LE EX 01.01.08	Visitor Center/ Auditorium	\$0
	C	C-AGV LE EX 01.01.09	Administration Building	\$3,140,000
	C	C-AGV LE EX 01.01.10	Security	\$24,148,975
		C-AGV LE EX 01.01.11	Rail Spur/ Receiving Yard	\$58,752,800
		C-AGV LE EX 01.01.12	Utilities	\$18,682,150
		C-AGV LE EX 01.01.13	Roads	\$18,212,737
		C-AGV LE EX 01.01.14	Parking	\$735,000
		C-AGV LE EX 01.01.15	Site Work	\$23,417,500
		C-AGV LE EX 01.01.16	Warehouse	\$10,200,000
		C-AGV LE EX 01.01.17	Maintenance Facility	\$0 \$0
		C-AGV LE EX 01.01.18 C-AGV LE EX 01.01.01.>	Waste management Facility (Add Further Breakdown as needed)	\$0 \$0
		-AGV LE EX 01.01.01.7	(Add Fulther Breakdown as needed)	ŞU
	C-AGV LE EX 01.02		Expanded Interim Storage Facility \$	50
		C-AGV LE EX 01.02.01	Expanded Storage AGV LE s and Dry Cask Storage Systems	\$0
		C-AGV LE EX 01.02.02	Expanded Cask Handling Facility (if required)	\$0
	C	C-AGV LE EX 01.02.03	Horizontal Dry Storage Modules	\$0
	C	C-AGV LE EX 01.02.04	Vertical Dry Storage Casks	\$0
	C	C-AGV LE EX 01.02.05	Storage Cask Fabrication Facility (Expanded)	\$0
	C	C-AGV LE EX 01.02.06	Cask Maintenance Facility (Expanded)	\$0
	C	C-AGV LE EX 01.02.07	Concrete Batch Plant (Expanded if needed)	\$0
	C	C-AGV LE EX 01.02.08	Visitor Center/ Auditorium (expanded if needed)	\$0
		C-AGV LE EX 01.02.09	Administration Building (Expanded if needed)	\$0
		C-AGV LE EX 01.02.10	Security (Expanded)	\$0
		C-AGV LE EX 01.02.11	Rail Spur/ Receiving Yard (Expanded)	\$0
		C-AGV LE EX 01.02.12	Utilities Expanded as needed)	\$0
		C-AGV LE EX 01.02.13	Roads (Expanded)	\$0
		C-AGV LE EX 01.02.14	Parking (Expanded as needed)	\$0 \$0
		C-AGV LE EX 01.02.15 C-AGV LE EX 01.02.16	Site Work (Expanded) Warehouse (Expanded if Needed)	\$0 \$0
		C-AGV LE EX 01.02.10	Maintenance Facility (Expanded if needed)	\$0 \$0
		C-AGV LE EX 01.02.17	Waste management Facility (Expanded if needed)	\$0 \$0
		C-AGV LE EX 01.02.19	Hot Cell / Laboratories	\$0
		C-AGV LE EX 01.02.20	Pool Packaging Facility	\$0
		C-AGV LE EX 01.02.21	Standardized Storage System	\$0
		C-AGV LE EX 01.02.22	Standardized Disposal Canister	, \$0
	C	C-AGV LE EX 01.02.23	Canister Repackaging Facility (For Repository	\$0
	C-AGV LE EX 01.03		Transportation Equipment \$	60
	C	C-AGV LE EX 01.03.01	Transportation Casks	\$0
	C	C-AGV LE EX 01.03.02	Rail Equipment	\$0
		C-AGV LE EX 01.03.03	Rail Maintenance Facility	\$0 \$0
		C-AGV LE EX 01.03.04	Transportation Systems Services	\$0
	C-AGV LE EX 01.04		Pre-Construction Capitalized Costs \$66,025,00	
		C-AGV LE EX 01.04.01 C-AGV LE EX 01.04.02	Land or Land Leases	\$7,680,000
		C-AGV LE EX 01.04.02	Site permits Site Licensing	\$200,000 \$6,240,000
		C-AGV LE EX 01.04.03	Plant Permits	\$6,240,000 \$0
		C-AGV LE EX 01.04.06	Planning and Alternative Studies	\$750,000
		-AGV LE EX 01.04.00	Pasarch and Davalanment	\$750,000 \$0

Research and Development

C-AGV LE EX 01.04.07

Project Total



C-AGV LE EX 01.04.08	Design	\$23,955,000
C-AGV LE EX 01.04.09	Other Pre-construction Costs	\$17,200,000
C-AGV LE EX 01.04.10	Pre-construction contingencies	\$10,000,000
C-AGV LE EX 01.04.xx	(Add Further Breakdown as needed)	\$0
C-AGV LE EX 01.05	Indirect Capitalized Costs \$63,180,000	
C-AGV LE EX 01.05.01	Project Management	\$2,700,000
C-AGV LE EX 01.05.02	Construction Management	\$3,600,000
C-AGV LE EX 01.05.03	Field indirect services	\$11,880,000
C-AGV LE EX 01.05.04	Design Services in support of Construction	\$5,400,000
C-AGV LE EX 01.05.05	QA/QC	\$12,600,000
C-AGV LE EX 01.05.06	Commissioning and Startup	\$1,200,000
C-AGV LE EX 01.05.07	Home office Engineering support to Construction	\$7,200,000
C-AGV LE EX 01.05.08	Document Control	\$2,700,000
C-AGV LE EX 01.05.09	Project Controls	\$3,600,000
C-AGV LE EX 01.05.10	Construction Testing	\$2,700,000
C-AGV LE EX 01.05.11	Inspections	\$3,600,000
C-AGV LE EX 01.05.12	Startup and Testing	\$3,000,000
C-AGV LE EX 01.05.13	Commissioning	\$3,000,000
C-AGV LE EX 01.06	Site Selection \$0	
C-AGV LE EX 01.06.01	Site Selection	\$0
C-AGV LE EX 01.06.02	Public Information Process	\$0
C-AGV LE EX 01.07	Decontamination and Deconstruction \$0	•
C-AGV LE EX 01.07.01	Decommissioning	\$0
C-AGV LE EX 01.07.02	Decontamination	\$0
C-AGV LE EX 01.07.03	Deconstruction	\$0
C-AGV LE EX 01.07.04		\$0
C-AGV LE EX 01.07.05		\$0
C-AGV LE EX 01.08	Project Financial Costs \$89,547,865	φ.
C-AGV LE EX 01.08.01	Contractor Fees	\$53,461,412
C-AGV LE EX 01.08.02	Escalation Costs	\$36,086,453
C-AGV LE EX 01.08.03	Interest Payments	\$0
C-AGV LE EX 01.08.04	Indirect costs to support shipments to repository	\$0
C-AGV LE EX 01.08.05	munications to support simplificates to repository	\$0
C-AGV LE EX 01.08.xx	(Add Further Breakdown as needed)	\$0
Chevil Latino.	(ridd Farther Breakdown as needed)	Ψ0
C-AGV LE EX 01.09	Project Contingencies \$117,461,404	
C-AGV LE EX 01.09.01	Management Reserve - Contractor Held	\$37,890,776
C-AGV LE EX 01.09.02	Contingency - DOE held	\$79,570,629
C //GV EL EX 01.03.02	contingency DOL neid	\$75,570,0 <u>2</u> 5
C-AGV LE EX 01.10		
C-AGV LE EX 01.10.01	Other Direct Costs \$0	
C-AGV LE EX 01.10.02	DOE Project Operations	\$0
C-AGV LE EX 01.10.03	DOE TM&E	\$0 \$0
C-AGV LE EX 01.10.03	Host site Operational Costs Miscellaneous	\$0 \$0
C-AGV LE EX 01.10.04 C-AGV LE EX 01.10.05	Miscellaneous ODC	\$0 \$0
C-AGV LE EX 01.10.03	Wilscellaneous ODC	ŞU
C-AGV LE EX 01.11	Operational Costs 0	
C-AGV LE EX 01.11 C-AGV LE EX 01.11.01	Operational Costs Operations Costs	\$0
C-AGV LE EX 01.11.01 C-AGV LE EX 01.11.02	·	\$0 \$0
	Transportation Costs	
C-AGV LE EX 01.11.03	Escalation (Operations/Transportation)	\$0
	(All Direct & indirect Costs, MR,	
	TEC Escalation)	\$795,706,286
	TPC (TEC plus Contingency, ODCs)	\$875,276,914
	All Capitol, Operation, Transportation,	+ = , = , = , 0, J ± 4
	LCC Escalation	\$875,276,914



STUDY 1 - ALTERNATIVE STORAGE SYSTEMS FOR DUAL PURPOSE CANISTERS

COST DETAILS

ALTERNATIVE 14 - C-AGV, PILOT, HIGH SEISMIC

LIFE CYCLE COST - 40 YEAR OPERATING LIFE

Life Cycle

\$ 2,496,739,218



Interim Storage Facility

Pilot Storage Facility (5,000 MTU)

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

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

Separate CHB

•									Anr	nual Escalation			Dis	scount Rate
40 Yea	r Ope	erating life								1.90%				3.40%
YEAR	De	esign/Const		O&M	C	ask Handling		D&D		Escalation	Ar	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	\$	-	\$	-	\$	-	\$	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	Ş	232,500,273	\$	371,980,021
9		200,000,000	\$	25,073,418	\$	-	\$	-	\$	41,546,053	Ş	266,619,471	\$	638,599,492
10	\$	347,388,515	\$	24,539,498	\$	-	\$	-	\$	77,024,834	Ş ,	448,952,848	\$	1,087,552,340
11			\$	25,012,938	\$	12,836,230	\$	-	\$	8,706,478	\$	46,555,646	\$	1,134,107,986
12	\$	-	\$	25,012,938	\$	12,836,230	\$	-	\$	9,591,036	\$	47,440,204	\$	1,181,548,190
13	\$	-	\$	25,012,938	\$	12,836,230	\$	-	\$	10,492,400	\$	48,341,568	\$	1,229,889,757
14	\$	-	\$ ¢	11,019,582	\$	-	\$ ¢	-	\$ ¢	3,322,219	\$	14,341,801	\$	1,244,231,559
15	\$ ¢	-	\$ ¢	11,019,582	\$	-	\$ ¢	-	\$ ¢	3,594,713	\$	14,614,296	\$	1,258,845,855
16	\$ ¢	-	\$ ¢	11,019,582	\$	-	\$ ¢	-	\$ ¢	3,872,385	\$	14,891,967	\$	1,273,737,822
17	\$ ¢	-	\$ ¢	11,019,582	\$	-	\$ ¢	-	\$ ¢	4,155,332	\$	15,174,915	\$ ¢	1,288,912,736
18	\$ ¢	-	\$ ¢	11,019,582	\$	-	\$ ¢	-	\$ ¢	4,443,656	\$	15,463,238	\$	1,304,375,974
19	\$ ¢	-	\$ ¢	11,019,582	\$	-	\$ ¢	-	\$ ¢	4,737,457	\$	15,757,040	\$	1,320,133,014
20	\$	-	۶ د	11,019,582	\$ ¢	-	<u>ې</u>	-	<u>ې</u>	5,036,841	\$ ¢	16,056,423	\$	1,336,189,437
21	\$ ¢	-	\$ ¢	11,019,582	\$	-	\$ ¢	-	\$ ¢	5,341,913	\$	16,361,495	\$ ¢	1,352,550,933
22	۶ د	-	۶ د	11,019,582	\$	-	<u>ې</u>	-	<u>ې</u>	5,652,782	\$	16,672,364	\$ ¢	1,369,223,296
23	۶ د	-	۶ د	11,019,582	\$ ¢	-	ب	-	<u>ې</u>	5,969,556	\$	16,989,139	\$	1,386,212,435
24 25	\$ ¢	-	۶ د	11,019,582	\$ ¢	-	ب	-	<u>ې</u>	6,292,350	\$ ¢	17,311,932	\$ ¢	1,403,524,367
25 26	۶ د	-	۶ د	11,019,582	ب	-	ب	-	<u>ې</u>	6,621,277	\$	17,640,859	\$ ¢	1,421,165,226
26 27	ې د	-	۶ د	11,019,582	\$ ¢	-	۶ د	-	۶ د	6,956,453	\$ ¢	17,976,035	\$ ¢	1,439,141,262
	ې د	-	ې د	11,019,582	ې د	-	ې د	-	ې د	7,297,998	\$ ¢	18,317,580 18,665,614	\$ ¢	1,457,458,842
28 29	ې د	-	ې د	11,019,582	ې د	-	ې د	-	ې د	7,646,032 8,000,678	ې د	19,020,261	ې د	1,476,124,456
30	ې د	-	ې د	11,019,582 11,019,582	ې د	-	ې د	-	ې د	8,362,063	\$ ¢	19,020,201	\$ ¢	1,495,144,716
31	ې د	-	ې د	11,019,582	ې د	-	ې د	-	ې د	8,730,315	\$ \$	19,749,897	\$ ¢	1,514,526,362 1,534,276,259
32	ې د	-	ې د	11,019,582	ې د	-	ې د	-	ې د	9,105,563	۶ \$	20,125,145	\$ \$	1,554,401,404
33	ς ς	_	٠ <	11,019,582	ς ,	_	٠ \$	_	٠ ,	9,487,941	\$	20,507,523	\$	1,574,908,927
34	ς ς	_	٠ <	11,019,582	ς ,	_	٠ \$	_	٠ ,	9,877,583	\$	20,307,323	\$	1,595,806,092
35	\$	_	\$	11,019,582	ς ς	_	ς ς	_	ς ς	10,274,630	ς ς	21,294,212	\$	1,617,100,304
36	\$	_	\$	11,019,582	\$	_	\$	_	\$	10,679,220	\$	21,698,802	\$	1,638,799,106
37	\$	_	\$	11,019,582	\$	_	\$	_	\$	11,091,497	\$	22,111,079	\$	1,660,910,185
38	\$	_	\$	11,019,582	\$	_	\$	_	\$	11,511,607	\$	22,531,190	\$	1,683,441,375
39	\$	_	\$	11,019,582	\$	_	\$	_	\$	11,939,700	\$	22,959,282	\$	1,706,400,657
40	\$	-	\$	11,019,582	\$	-	\$	_	\$	12,375,926	\$	23,395,509	\$	1,729,796,165
41	\$	-	\$	11,019,582	\$	-	\$	-	\$	12,820,441	\$	23,840,023	\$	1,753,636,188
42	\$	-	\$	11,019,582	\$	-	\$	-	\$	13,273,401	\$	24,292,984	\$	1,777,929,172
43	\$	-	\$	11,019,582	\$	-	\$	-	\$	13,734,968	\$	24,754,550	\$	1,802,683,722
44	\$	-	\$	11,019,582	\$	-	\$	-	\$	14,205,305	\$	25,224,887	\$	1,827,908,609
45	\$	-	\$	11,019,582	\$	-	\$	-	\$	14,684,577	\$	25,704,160	\$	1,853,612,769
46	\$	-	\$	11,019,582	\$	-	\$	-	\$	15,172,956	\$	26,192,539	\$	1,879,805,307
47	\$	-	\$	11,019,582	\$	-	\$	-	\$	15,670,615	\$	26,690,197	\$	1,906,495,504
48	\$	-	\$	11,019,582	\$	-	\$	-	\$	16,177,728	\$	27,197,311	\$	1,933,692,815
49	\$	-	\$	11,019,582	\$	-	\$	-	\$	16,694,477	\$	27,714,060	\$	1,961,406,874
50	\$	-	\$	11,019,582	\$	-	\$	-	\$	17,221,044	\$	28,240,627	\$	1,989,647,501
51	\$	-	\$	-	\$	-	\$	42,500,000	\$	68,487,052	\$	110,987,052	\$	2,100,634,552
52	\$	-	\$	-	\$	-	\$	26,000,000	\$	43,188,022	\$	69,188,022	\$	2,169,822,575
53	\$	-	\$	-	\$	-	\$	39,432,886	\$	67,494,835	\$	106,927,721	\$	2,276,750,296
54	\$	-	\$	-	\$	-	\$	39,432,886	\$	69,526,462	\$	108,959,348	\$	2,385,709,643
55	\$	-	\$	-	\$	-	\$	39,432,886	\$	71,596,690	\$	111,029,575	\$	2,496,739,218
56	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	2,496,739,218
57	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	2,496,739,218
58	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	2,496,739,218
59	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	2,496,739,218
60	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	2,496,739,218
		Total		Total				Total		Total				Total
	D	esign/Const		O&M				D&D		Escalation				Life Cycle



STUDY 1 - ALTERNATIVE STORAGE SYSTEMS FOR DUAL PURPOSE CANISTERS

COST DETAILS

ALTERNATIVE 14 - C-AGV, PILOT, HIGH SEISMIC

LIFE CYCLE COST - 80 YEAR OPERATING LIFE



Pilot Storage Facility (5,000 MTU)

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

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

Separate CHB

80 Year Operating Life

								Anı	nual Escalation		Discount Rate
									1.90%		3.40%
YEAR	Design/Const		O&M	C-	ask Handling		D&D		Escalation	Annual	Cumulative
1	\$ 10,000,000	\$	UQIVI	\$	ask Hallulling	\$	עאַט	\$	190,000	Expense \$10,190,000	\$10,190,000
2	\$ 10,000,000	۶ \$	_	ب خ	_	ب \$	_	\$	383,610	\$10,130,000	\$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	\$ 347,388,515	\$	24,539,498	\$	-	\$	-	\$	77,024,834	\$448,952,848	\$1,087,552,340
11		\$	25,012,938	\$	12,836,230	\$	-	\$	8,706,478	\$46,555,646	\$1,134,107,986
12	\$ -	\$	25,012,938	\$	12,836,230	\$	-	\$	9,591,036	\$47,440,204	\$1,181,548,190
13	\$ -	\$	25,012,938	\$	12,836,230	\$	-	\$	10,492,400	\$48,341,568	\$1,229,889,757
14	\$ -	\$	11,019,582	\$	-	\$	-	\$	3,322,219	\$14,341,801	\$1,244,231,559
15	\$ -	\$	11,019,582	\$	-	\$	-	\$	3,594,713	\$14,614,296	\$1,258,845,855
16	\$ -	\$	11,019,582	\$	-	\$	-	\$	3,872,385	\$14,891,967	\$1,273,737,822
17	\$ -	\$	11,019,582	\$	-	\$	-	\$	4,155,332	\$15,174,915	\$1,288,912,736
18	\$ -	\$	11,019,582	\$	-	\$	-	\$	4,443,656	\$15,463,238	\$1,304,375,974
19	\$ -	\$	11,019,582	\$	-	\$	-	\$	4,737,457	\$15,757,040	\$1,320,133,014
20	\$ -	\$	11,019,582	\$	-	\$	-	\$	5,036,841	\$16,056,423	\$1,336,189,437
21	\$ -	\$	11,019,582	\$	-	\$	-	\$	5,341,913	\$16,361,495	\$1,352,550,933
22	\$ -	\$	11,019,582	\$	-	\$	-	\$	5,652,782	\$16,672,364	\$1,369,223,296
23	\$ -	\$	11,019,582	\$	-	\$	-	\$	5,969,556	\$16,989,139	\$1,386,212,435
24	\$ -	\$	11,019,582	\$	-	\$	-	\$	6,292,350	\$17,311,932	\$1,403,524,367
25	\$ -	\$	11,019,582	\$	-	\$	-	\$	6,621,277	\$17,640,859	\$1,421,165,226
26	\$ -	\$	11,019,582	\$	-	\$	-	\$	6,956,453	\$17,976,035	\$1,439,141,262
27	\$ -	\$	11,019,582	\$	-	\$	-	\$	7,297,998	\$18,317,580	\$1,457,458,842
28	\$ -	\$	11,019,582	\$	-	\$	-	\$	7,646,032	\$18,665,614	\$1,476,124,456
29	\$ -	\$	11,019,582	\$	-	\$	-	\$	8,000,678	\$19,020,261	\$1,495,144,716
30	\$ -	\$	11,019,582	\$	-	\$	-	\$	8,362,063	\$19,381,646	\$1,514,526,362
31	\$ -	\$	11,019,582	\$	-	\$	-	\$	8,730,315	\$19,749,897	\$1,534,276,259
32	\$ -	\$	11,019,582	\$	-	\$	-	\$	9,105,563	\$20,125,145	\$1,554,401,404
33	\$ -	\$	11,019,582	\$	-	\$	-	\$	9,487,941	\$20,507,523	\$1,574,908,927
34	\$ -	\$	11,019,582	\$	-	\$	-	\$	9,877,583	\$20,897,166	\$1,595,806,092
35	\$ -	\$	11,019,582	\$	-	\$	-	\$	10,274,630	\$21,294,212	\$1,617,100,304
36	\$ -	\$	11,019,582	\$	-	\$	-	\$	10,679,220	\$21,698,802	\$1,638,799,106
37	\$ -	\$	11,019,582	\$	-	\$	-	\$	11,091,497	\$22,111,079	\$1,660,910,185
38	\$ -	\$	11,019,582	\$	-	\$	-	\$	11,511,607	\$22,531,190	\$1,683,441,375
39	\$ -	\$	11,019,582	\$	-	\$	-	\$	11,939,700	\$22,959,282	\$1,706,400,657
40	\$ -	\$	11,019,582	Ş	-	\$	-	\$	12,375,926	\$23,395,509	\$1,729,796,165
41	\$ -	\$	11,019,582	\$	-	\$	-	\$	12,820,441	\$23,840,023	\$1,753,636,188
42	\$ -	\$	11,019,582	\$	-	\$	-	\$	13,273,401	\$24,292,984	\$1,777,929,172
43	\$ -	\$	11,019,582	\$ \$	-	\$	-	\$	13,734,968	\$24,754,550	\$1,802,683,722
44	\$ -	\$	11,019,582	\$ \$	-	\$ \$	-	\$ \$	14,205,305	\$25,224,887	\$1,827,908,609
45	\$ -	\$	11,019,582	\$ \$	-	\$ \$	-	\$ \$	14,684,577	\$25,704,160	\$1,853,612,769
46 47	\$ -	\$ ¢	11,019,582	\$ ¢	-	>	-	\$ ¢	15,172,956	\$26,192,539	\$1,879,805,307
47	\$ -	\$ ¢	11,019,582	۶ ک	-	<u>۲</u>	-	<u>ې</u>	15,670,615	\$26,690,197	\$1,906,495,504
48	\$ -	\$ ¢	11,019,582	خ	-	<u>></u>	-	<u>ې</u>	16,177,728	\$27,197,311	\$1,933,692,815
49 50	\$ -	\$ ¢	11,019,582	خ	-	<u>></u>	-	<u>ې</u>	16,694,477	\$27,714,060	\$1,961,406,874
50 51	۶ - د	\$ ¢	11,019,582	\$ ¢	-	ې	-	<u>ځ</u>	17,221,044 17,757,616	\$28,240,627	\$1,989,647,501
51 52	၃ - င်	\$ ¢	11,019,582	ې خ	-	ې خ	-	خ خ	17,757,616	\$28,777,199	\$2,018,424,699
52 53	၃ - င်	\$ ¢	11,019,582	ې خ	-	ې خ	-	خ خ	18,304,383	\$29,323,965	\$2,047,748,665
	ب - خ	\$ \$	11,019,582 11,019,582	ې د	-	ې د	-	ې د	18,861,538 19,429,280	\$29,881,121	\$2,077,629,785
54 55	ب - خ	ې خ	11,019,582	ې د	-	ې د	-	ې د	20,007,808	\$30,448,862 \$31,027,390	\$2,108,078,647
55 56	\$ - \$ -	\$ \$	11,019,582	\$ \$	-	\$ \$	-	\$ \$	20,007,808	\$31,027,390	\$2,139,106,038 \$2,170,722,948
57	\$ -	۶ \$	11,019,582	\$ \$	-	۶ \$	-	۶ \$	20,397,329	\$32,217,632	\$2,170,722,948
57	- -	Ą	11,013,304	ڔ	-	٧	-	ڔ	21,190,030	ع32,217,032	72,202,J4U,JOI

\$875,276,914

\$973,159,561

\$4,767,258,739



	Total Design/Const	Total O&M	Cask Handling	Total D&D		Escalation		Total Life Cycle
	-	T-1-1	Total	Tatal		Total		Tatal
100					\$	-	\$0	\$4,767,258,739
99					\$	-	\$0	\$4,767,258,739
98					\$	-	\$0	\$4,767,258,739
97				\$ -	\$	-	\$0	\$4,767,258,739
96				\$ -	\$	-	\$0	\$4,767,258,739
95			\$ -	\$ 39,432,886	\$	196,292,328	\$235,725,214	\$4,767,258,739
94			\$ -	\$ 39,432,886	\$	191,897,059	\$231,329,945	\$4,531,533,525
93			\$ -	\$ 39,432,886	\$	187,583,743	\$227,016,629	\$4,300,203,580
92			\$ -	\$ 26,000,000	\$	120,892,045	\$146,892,045	\$4,073,186,951
91			\$ -	\$ 42,500,000	\$	193,134,933	\$235,634,933	\$3,926,294,906
90	\$0	\$ 11,019,582	\$ -	\$ -	\$	48,937,666	\$59,957,248	\$3,690,659,973
89	\$0	\$ 11,019,582	\$ -	\$ -	\$	47,819,719	\$58,839,301	\$3,630,702,726
88	\$0	\$ 11,019,582	\$ -	\$ -	\$	46,722,617	\$57,742,199	\$3,571,863,425
87	\$0	\$ 11,019,582	\$ -	\$ -	\$	45,645,972	\$56,665,554	\$3,514,121,225
86	\$0	\$ 11,019,582	\$ -	\$ -	\$	44,589,401	\$55,608,983	\$3,457,455,671
85	\$0	\$ 11,019,582	\$ -	\$ -	\$	43,552,531	\$54,572,113	\$3,401,846,688
84	\$0	\$ 11,019,582	\$ -	\$ -	\$	42,534,994	\$53,554,576	\$3,347,274,575
83	\$0	\$ 11,019,582	\$ -	\$ -	\$	41,536,430	\$52,556,012	\$3,293,719,999
82	\$0	\$ 11,019,582	\$ -	\$ -	\$	40,556,484	\$51,576,067	\$3,241,163,988
81	\$0	\$ 11,019,582	\$ -	\$ -	\$	39,594,811	\$50,614,393	\$3,189,587,921
80	\$0	\$ 11,019,582	\$ -	\$ -	\$	38,651,068	\$49,670,651	\$3,138,973,528
79	\$0	\$ 11,019,582	\$ -	\$ -	\$	37,724,923	\$48,744,505	\$3,089,302,877
78	\$0	\$ 11,019,582	\$ -	\$ -	\$	36,816,046	\$47,835,628	\$3,040,558,372
77	\$0	\$ 11,019,582	\$ -	\$ -	\$	35,924,116	\$46,943,698	\$2,992,722,744
76	\$0	\$ 11,019,582	\$ -	\$ -	\$	35,048,816	\$46,068,398	\$2,945,779,046
75	\$0	\$ 11,019,582	\$ -	\$ -	\$	34,189,837	\$45,209,419	\$2,899,710,648
74	\$0	\$ 11,019,582	\$ -	\$ -	\$	33,346,874	\$44,366,457	\$2,854,501,228
73	\$0	\$ 11,019,582	\$ -	\$ -	\$	32,519,629	\$43,539,212	\$2,810,134,772
72	\$0	\$ 11,019,582	\$ -	\$ -	\$	31,707,809	\$42,727,391	\$2,766,595,560
71	\$0	\$ 11,019,582	\$ -	\$ -	\$	30,911,126	\$41,930,708	\$2,723,868,169
70	\$0	\$ 11,019,582	\$ -	\$ -	, \$	30,129,297	\$41,148,879	\$2,681,937,461
69	\$0	\$ 11,019,582	\$ -	\$ -	\$	29,362,046	\$40,381,628	\$2,640,788,582
68	\$0	\$ 11,019,582	\$ -	\$ -	\$	28,609,101	\$39,628,683	\$2,600,406,954
67	\$0	\$ 11,019,582	\$ -	\$ -	\$	27,870,195	\$38,889,777	\$2,560,778,271
66	\$0	\$ 11,019,582	\$ -	\$ -	\$	27,145,067	\$38,164,649	\$2,521,888,493
65	\$0	\$ 11,019,582	\$ -	\$ -	\$	26,433,459	\$37,453,041	\$2,483,723,844
64	\$ -	\$ 11,019,582	\$ -	\$ -	\$	25,735,120	\$36,754,702	\$2,446,270,803
	\$ -	\$ 11,019,582	\$ -	\$ -	\$	25,049,801	\$36,069,384	\$2,409,516,101
62	\$ -	\$ 11,019,582	\$ -	\$ -	\$	24,377,261	\$35,396,844	\$2,373,446,717
61	\$ -	\$ 11,019,582	\$ -	\$ -	\$	23,717,261	\$34,736,844	\$2,338,049,874
60	\$ -	\$ 11,019,582	\$ -	\$ -	۶ \$	23,069,568	\$33,433,333	\$2,303,313,030
58 59	\$ - \$ -	\$ 11,019,582 \$ 11,019,582	\$ - \$ -	\$ - \$ -	\$ \$	21,810,185 22,433,950	\$32,829,767 \$33,453,533	\$2,235,770,348 \$2,269,223,880

\$38,508,689 \$186,798,657

\$2,693,514,919



STUDY 1 - ALTERNATIVE STORAGE SYSTEMS FOR DUAL PURPOSE CANISTERS

COST DETAILS

ALTERNATIVE 15 - C-AGV, EXPANDED, LOW SEISMIC

LIFE CYCLE COST SUMMARIES



Total Costs

Interim Storage Facility

Expanded Storage Facility (10,000 MTU)

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

Life Cycle Costs (40 Year Life)

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

Separate CHB

Design & Construction

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

Capital

\$1,157,896,612

Operations & Maintenance (40 Year Life)		\$532,376,272				\$532,376,272
Cask Handling		\$77,017,378				\$77,017,378
Transportation Equipment	\$0					\$0
Transport Operations		\$0	\$0			\$0
Repackaging	\$0	\$0				\$0
Transport to Repository	\$0		\$0			\$0
D&D				\$232,088,625		\$232,088,625
Escalation					\$1,013,310,624	\$1,013,310,624
Total Costs (40 year Life)						\$3,012,689,511
Present Value						\$1,552,106,384
Life Cycle Costs (80 Year Life)	Capital	Operations	Transport	Decommissioning	Escalation	Total Costs
Design & Construction	\$1,157,896,612	-		, , , , , , , , , , , , , , , , , , ,		\$1,157,896,612
Operations & Maintenance (80 Year Life)	. , , ,	\$973,159,561				\$973,159,561
Cask Handling		\$77,017,378				\$77,017,378
Transportation Equipment	\$0	. , .				\$0
Transport Operations		\$0	\$0			\$0
Repackaging .	\$0	\$0				\$0
Transport to Repository	\$0		\$0			\$0
D&D				\$232,088,625		\$232,088,625
Escalation					\$2,981,999,939	\$2,981,999,939
Total Costs (80 Year Life)						\$5,422,162,114
Present Value						\$1,664,394,336

Operations

Transport Decommissioning

Escalation



STUDY 1 - ALTERNATIVE STORAGE SYSTEMS FOR DUAL PURPOSE CANISTERS

COST DETAILS

ALTERNATIVE 15 - C-AGV, EXPANDED, LOW SEISMIC

CAPITAL COST SUMMARY

\$750,000



Interim Storage Facility

Expanded Storage Facility (10,000 MTU)

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

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

Separate CHB

Level 3 Cost Summary - First of A kind module

Level 1 C-AGV EX 01	Level 2	Level 3 Descr	iption m Storage Facility and transportation Project	Level 3 Total
C AGV LX 01	C-AGV EX 01.01	meen	Pilot ISF Facility \$510,944,405	
		C ACV EV 04 04 04	Chausana A Civia	ćo
		C-AGV EX 01.01.01 C-AGV EX 01.01.02	Storage AGVs	\$0
		C-AGV EX 01.01.03	Cask Handling (Transfer) Facility Horizontal Dry Storage Modules	\$135,175,719 \$0
		C-AGV EX 01.01.04	Vertical Dry Storage Module	\$216,629,524
		C-AGV EX 01.01.05	Storage Cask Fabrication Facility	\$210,023,32
		C-AGV EX 01.01.06	Cask Maintenance Facility	\$0
		C-AGV EX 01.01.07	Concrete Batch Plant	\$1,850,000
		C-AGV EX 01.01.08	Visitor Center/ Auditorium	\$0
		C-AGV EX 01.01.09	Administration Building	\$3,140,000
		C-AGV EX 01.01.10	Security	\$24,148,975
		C-AGV EX 01.01.11	Rail Spur/ Receiving Yard	\$58,752,800
		C-AGV EX 01.01.12	Utilities	\$18,682,150
		C-AGV EX 01.01.13	Roads	\$18,212,737
		C-AGV EX 01.01.14	Parking	\$735,000
		C-AGV EX 01.01.15	Site Work	\$23,417,500
		C-AGV EX 01.01.16	Warehouse	\$10,200,000
		C-AGV EX 01.01.17	Maintenance Facility	\$0
		C-AGV EX 01.01.18	Waste management Facility	\$0
		C-AGV EX 01.01.01.xx	(Add Further Breakdown as needed)	\$0
		01.01.01.	(Add Farther breakdown as needed)	Ų
	C-AGV EX 01.02		Expanded Interim Storage Facility \$243,896,353	
		C-AGV EX 01.02.01	Expanded Storage AGVs and Dry Cask Storage Systems	\$0
		C-AGV EX 01.02.02	Expanded Cask Handling Facility (if required)	\$0
		C-AGV EX 01.02.03	Horizontal Dry Storage Modules	\$0
		C-AGV EX 01.02.04	Vertical Dry Storage Casks	\$216,629,524
		C-AGV EX 01.02.05	Storage Cask Fabrication Facility (Expanded)	\$0
		C-AGV EX 01.02.06	Cask Maintenance Facility (Expanded)	\$0
		C-AGV EX 01.02.07	Concrete Batch Plant (Expanded if needed)	\$1,850,000
		C-AGV EX 01.02.08	Visitor Center/ Auditorium (expanded if needed)	\$745,000
		C-AGV EX 01.02.09	Administration Building (Expanded if needed)	\$0
		C-AGV EX 01.02.10	Security (Expanded)	\$10,074,488
		C-AGV EX 01.02.11	Rail Spur/ Receiving Yard (Expanded)	\$0
		C-AGV EX 01.02.12	Utilities Expanded as needed)	\$3,624,200
		C-AGV EX 01.02.13 C-AGV EX 01.02.14	Roads (Expanded)	\$83,142
		C-AGV EX 01.02.14	Parking (Expanded as needed) Site Work (Expanded)	\$0 \$10,890,000
		C-AGV EX 01.02.16	Warehouse (Expanded if Needed)	\$10,890,000
		C-AGV EX 01.02.17	Maintenance Facility (Expanded if needed)	\$0
		C-AGV EX 01.02.18	Waste management Facility (Expanded if needed)	\$0
		C-AGV EX 01.02.19	Hot Cell / Laboratories	\$0
		C-AGV EX 01.02.20	Pool Packaging Facility	\$0
		C-AGV EX 01.02.21	Standardized Storage System	\$0
		C-AGV EX 01.02.22	Standardized Disposal Canister	\$0
		C-AGV EX 01.02.23	Canister Repackaging Facility (For Repository	\$0
	C-AGV EX 01.03		Transportation Equipment \$0	
		C-AGV EX 01.03.01	Transportation Casks	\$0
		C-AGV EX 01.03.02	Rail Equipment	\$0
		C-AGV EX 01.03.03	Rail Maintenance Facility	\$0
		C-AGV EX 01.03.04	Transportation Systems Services	\$0
	C-AGV EX 01.04		Pre-Construction Capitalized Costs \$66,025,000	
		C-AGV EX 01.04.01	Land or Land Leases	\$7,680,000
		C-AGV EX 01.04.02	Site permits	\$200,000
		C-AGV EX 01.04.03	Site Licensing	\$6,240,000
		C-AGV EX 01.04.05	Plant Permits	\$0 \$750,000
		/\(\mathrea{\chi}\) F x 111 11/1 11/6	WINDOWS TO A VITORDATIVO STUDIOC	< /h/1 (1/1/1)

C-AGV EX 01.04.06

Planning and Alternative Studies



C-AGV EX 01.04.07	Research and Development	\$0
C-AGV EX 01.04.08	Design	\$23,955,000
C-AGV EX 01.04.09	Other Pre-construction Costs	\$17,200,000
C-AGV EX 01.04.10	Pre-construction contingencies	\$10,000,000
C-AGV EX 01.04.10	(Add Further Breakdown as needed)	\$10,000,000
C-AGV EX 01.05	Indirect Capitalized Costs \$63,180,000	•
C-AGV EX 01.05.01	Project Management	, \$2,700,000
C-AGV EX 01.05.02	Construction Management	\$3,600,000
C-AGV EX 01.05.02	Field indirect services	\$11,880,000
C-AGV EX 01.05.04	Design Services in support of Construction	\$5,400,000
C-AGV EX 01.05.05	QA/QC	\$12,600,000
C-AGV EX 01.05.06	Commissioning and Startup	\$1,200,000
C-AGV EX 01.05.07	Home office Engineering support to Construction	\$7,200,000
C-AGV EX 01.05.07	Document Control	\$2,700,000
C-AGV EX 01.05.09	Project Controls	\$3,600,000
C-AGV EX 01.05.05	Construction Testing	\$2,700,000
C-AGV EX 01.05.10	Inspections	\$3,600,000
C-AGV EX 01.05.11	Startup and Testing	\$3,000,000
C-AGV EX 01.05.12	Commissioning	\$3,000,000
C-AGV EX 01.06	Site Selection \$0	
C-AGV EX 01.06.01	Site Selection	, \$0
C-AGV EX 01.06.01	Public Information Process	\$0 \$0
C-AGV EX 01.00.02	Decontamination and Deconstruction \$0	·
C-AGV EX 01.07.01	Decommissioning Decommissioning	, \$0
C-AGV EX 01.07.02	Decontamination	\$0 \$0
C-AGV EX 01.07.03	Deconstruction	\$0 \$0
C-AGV EX 01.07.04	Deconstruction	\$0 \$0
C-AGV EX 01.07.05		\$0
C-AGV EX 01.08	Project Financial Costs \$118,462,132	•
C-AGV EX 01.08.01	Contractor Fees	\$70,723,661
C-AGV EX 01.08.02	Escalation Costs	\$47,738,471
C-AGV EX 01.08.03	Interest Payments	\$0
C-AGV EX 01.08.04	Indirect costs to support shipments to repository	\$0
C-AGV EX 01.08.05	munications to support simplification to repository	\$0
C-AGV EX 01.08.xx	(Add Further Breakdown as needed)	\$0
CAGV EAGI.GG.MA	(rida Farther Breakdown as needed)	70
C-AGV EX 01.09	Project Contingencies \$155,388,723	
C-AGV EX 01.09.01	Management Reserve - Contractor Held	\$50,125,394
C-AGV EX 01.09.02	Contingency - DOE held	\$105,263,328
5	33	, ,,
C-AGV EX 01.10		
C-AGV EX 01.10.01	Other Direct Costs \$0)
C-AGV EX 01.10.02	DOE Project Operations	\$0
C-AGV EX 01.10.03	DOE TM&E	\$0
C-AGV EX 01.10.04	Host site Operational Costs Miscellaneous	\$0
C-AGV EX 01.10.05	Miscellaneous ODC	\$0
		·
C-AGV EX 01.11	Operational Costs)
C-AGV EX 01.11.01	Operations Costs	\$0
C-AGV EX 01.11.02	Transportation Costs	, \$0
C-AGV EX 01.11.03	Escalation (Operations/Transportation)	\$0
		·

Project Total

TEC	(All Direct & indirect Costs, MR, Escalation)	\$1,052,633,284
TPC	(TEC plus Contingency, ODCs)	\$1,157,896,612
	All Capitol, Operation, Transportation,	
LCC	Escalation	\$1,157,896,612



STUDY 1 - ALTERNATIVE STORAGE SYSTEMS FOR DUAL PURPOSE CANISTERS

COST DETAILS

ALTERNATIVE 15 - C-AGV, EXPANDED, LOW SEISMIC

LIFE CYCLE COST - 40 YEAR OPERATING LIFE



Discount Rate

\$ 3,014,577,147

Interim Storage Facility

Expanded Storage Facility (10,000 MTU)

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

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

Separate CHB

									An	nual Escalation			DIS	count Rate
40 Yea	r Ope	erating life								1.90%				3.40%
	_				_			- 0 -						
YEAR		esign/Const		O&M		ask Handling		D&D		Escalation	An	inual Expense		Cumulative
1	\$	10,000,000	\$	-	Cas	sk Handling	\$	-	\$	190,000	\$	10,190,000	\$	10,190,000
2	\$	10,000,000	\$	-	\$	-	\$	-	\$	383,610	\$	10,383,610	\$	20,573,610
3	Ś	20,000,000	Ś	_	Ś	_	Ś	_	\$	1,161,797	\$	21,161,797	\$	41,735,407
4	Ġ	20,000,000	ς .	_	ς .	_	Ġ	_	ς.	1,563,871	\$	21,563,871	\$	63,299,279
•	ب		<u>ب</u>		ر ب		ب ب		ب ح					
5	Ş	20,000,000	Ş	-	Ş	-	Ş	-	Þ	1,973,585	\$	21,973,585	\$	85,272,863
6	Ş	20,000,000	Ş	-	Ş	-	\$	-	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	\$	630,008,213	\$	24,539,498	ς .	_	Ġ	_	ς.	135,554,266	\$	790,101,978	\$	1,428,701,470
	Y	030,000,213	<u>۲</u>		<u>۲</u>		۲		ب ح				•	
11	_		Ş	25,012,938	Ş		Ş	-	Þ	5,753,749	\$	30,766,687	\$	1,459,468,157
12	\$	-	\$	25,012,938	\$	12,836,230	\$	-	\$	9,591,036	\$	47,440,204	\$	1,506,908,361
13	\$	-	\$	25,012,938	\$	12,836,230	\$	-	\$	10,492,400	\$	48,341,568	\$	1,555,249,928
14	\$	-	\$	11,019,582	\$	12,836,230	\$	-	\$	7,192,127	\$	31,047,939	\$	1,586,297,867
15	\$	_	\$	11,019,582	\$	12,836,230	\$	-	\$	7,782,038	\$	31,637,850	\$	1,617,935,717
16	Ġ	_	ς .	11,019,582	ς .	12,836,230	Ġ	_	ς.	8,383,157	\$	32,238,969	ς.	1,650,174,686
	<u>ب</u>		<u>۲</u>		<u>۲</u>		۲		ب ح				۲	
17	>	-	\$	11,019,582	\$,	12,836,230	\$	-	>	8,995,698	\$	32,851,509	>	1,683,026,196
18	\$	-	\$	11,019,582	\$	-	\$	-	\$	4,443,656	\$	15,463,238	Ş	1,698,489,434
19	\$	-	\$	11,019,582	\$	-	\$	-	\$	4,737,457	\$	15,757,040	\$	1,714,246,473
20	\$	-	\$	11,019,582	\$	-	\$	-	\$	5,036,841	\$	16,056,423	\$	1,730,302,896
21	\$	_	Ś	11,019,582	Ś	_	Ś	_	Ś	5,341,913	\$	16,361,495	Ś	1,746,664,392
22	ç		ç	11,019,582	ç		ç		ç	5,652,782		16,672,364	ç	
	ې د	-	Ş		Ş	-	ب	-	ب		\$		\$	1,763,336,755
23	\$	-	\$	11,019,582	\$	-	\$	-	\$	5,969,556	\$	16,989,139	\$	1,780,325,894
24	\$	-	\$	11,019,582	\$	-	\$	-	\$	6,292,350	\$	17,311,932	\$	1,797,637,826
25	\$	-	\$	11,019,582	\$	-	\$	-	\$	6,621,277	\$	17,640,859	\$	1,815,278,685
26	\$	_	\$	11,019,582	\$	-	\$	-	\$	6,956,453	\$	17,976,035	\$	1,833,254,721
27	Ġ	_	ς .	11,019,582	ς .	_	Ġ	_	ς.	7,297,998	ς .	18,317,580	ς.	1,851,572,301
	<u>ب</u>		<u>۲</u>		<u>۲</u>		۲		ب ح		۲		۲	
28	\$	-	\$	11,019,582	\$	-	\$,	-	\$	7,646,032	\$	18,665,614	\$	1,870,237,915
29	\$	-	\$	11,019,582	\$	-	\$	-	\$	8,000,678	\$	19,020,261	Ş	1,889,258,176
30	\$	-	\$	11,019,582	\$	-	\$	-	\$	8,362,063	\$	19,381,646	\$	1,908,639,821
31	\$	-	\$	11,019,582	\$	-	\$	-	\$	8,730,315	\$	19,749,897	\$	1,928,389,718
32	\$	_	\$	11,019,582	\$	_	Ś	_	Ś	9,105,563	\$	20,125,145	Ś	1,948,514,863
33	¢	_	¢	11,019,582	¢	_	¢	_	¢	9,487,941	\$	20,507,523	¢	1,969,022,386
	ب د	_	ب ب		ب ح	_	ب ح	_	ب خ				ب م	
34	\$	-	\$	11,019,582	\$	-	\$	-	\$	9,877,583	\$	20,897,166	\$	1,989,919,551
35	\$	-	\$	11,019,582	\$	-	\$	-	\$	10,274,630	\$	21,294,212	\$	2,011,213,763
36	\$	-	\$	11,019,582	\$	-	\$	-	\$	10,679,220	\$	21,698,802	\$	2,032,912,565
37	\$	-	\$	11,019,582	\$	-	\$	-	\$	11,091,497	\$	22,111,079	\$	2,055,023,644
38	\$	_	\$	11,019,582	\$	_	\$	_	\$	11,511,607	\$	22,531,190	\$	2,077,554,834
39	¢	_	¢	11,019,582	¢	_	¢	_	¢	11,939,700	\$	22,959,282	¢	2,100,514,116
	ب د	_	ب خ		ب خ	_	<u>ب</u>	_	ب م				ب م	
40	\$	-	\$	11,019,582	\$	-	\$	-	\$	12,375,926	\$	23,395,509	\$	2,123,909,624
41	\$	-	\$	11,019,582	\$	-	\$	-	\$	12,820,441	\$	23,840,023	\$	2,147,749,647
42	\$	-	\$	11,019,582	\$	-	\$	-	\$	13,273,401	\$	24,292,984	\$	2,172,042,631
43	\$	-	\$	11,019,582	\$	-	\$	-	\$	13,734,968	\$	24,754,550	\$	2,196,797,181
44	\$	_	\$	11,019,582	\$	_	\$	_	\$	14,205,305	\$	25,224,887	\$	2,222,022,068
	ç		ç		ç		۲		ç				ç	
45	ې د	-	ې د	11,019,582	Ş	-	ب	-	, ,	14,684,577	\$	25,704,160	ب	2,247,726,228
46	Ş	-	\$	11,019,582	\$	-	Ş	-	Ş	15,172,956	\$	26,192,539	\$	2,273,918,766
47	\$	-	\$	11,019,582	\$	-	\$	-	\$	15,670,615	\$	26,690,197	\$	2,300,608,963
48	\$	-	\$	11,019,582	\$	-	\$	-	\$	16,177,728	\$	27,197,311	\$	2,327,806,274
49	\$	_	\$	11,019,582	\$	-	\$	-	\$	16,694,477	\$	27,714,060	\$	2,355,520,333
50	ς .	_	ς .	11,019,582	ς .	_	ς .	_	ς ,	17,221,044	ς .	28,240,627	\$	2,383,760,960
	ç		ç	11,013,302	ç		۲	42 500 000	۲		ç		۲	
51	Ş	-	Ş	-	Ş	-	Ş	42,500,000	Þ	68,487,052	Ş	110,987,052	Þ	2,494,748,012
52	Ş	-	Ş	-	Ş	-	\$	40,000,000	\$	66,443,111	Ş	106,443,111	Ş	2,601,191,123
53	\$	-	\$	-	\$	-	\$	49,862,875	\$	85,347,205	\$	135,210,080	\$	2,736,401,202
54	\$	-	\$	-	\$	-	\$	49,862,875	\$	87,916,196	\$	137,779,071	\$	2,874,180,273
55	\$	-	\$	-	\$	-	Ś	49,862,875	Ś	90,533,998	\$	140,396,874	\$	3,014,577,147
56	¢		ç		ç		ç	.5,552,575	ç	50,555,550	ç	0,000,074	ç	
	ک ک	-	Ş	-	ې د	-	Ş	-	Ş	-	ې د	-	Ş	3,014,577,147
57	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	Ş	3,014,577,147
58	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	3,014,577,147
59	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	3,014,577,147
60	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	3,014,577,147
			-						-				-	· •
		Total		Total				Total		Total				Total
	_													
	L L	Design/Const	_	O&M		77 04 7 5		D&D	,	Escalation			.1	Life Cycle
	_	1 157 006 613	_	F22 276 272	Ċ	77 017 270	_	222 000 625	<u>_</u>	1 015 100 350			<u>_</u>	2 04 4 522 4 42

Annual Escalation

\$ 1,157,896,612 \$ 532,376,272 \$ 77,017,378 \$ 232,088,625 \$ 1,015,198,259



STUDY 1 - ALTERNATIVE STORAGE SYSTEMS FOR DUAL PURPOSE CANISTERS

COST DETAILS

ALTERNATIVE 15 - C-AGV, EXPANDED, LOW SEISMIC

LIFE CYCLE COST - 80 YEAR OPERATING LIFE



Expanded Storage Facility (10,000 MTU)

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

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

Separate CHB

80 Year Operating Life

80 rea	гОр	erating Life							Ann	nual Escalation 1.90%		Discount Rate 3.40%
											Annual	
YEAR		Design/Const		O&M	Ca	sk Handling		D&D		Escalation	Expense	Cumulative
1	\$	10,000,000	\$	-	Cas	k Handling	\$	-	\$	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	\$	630,008,213	\$	24,539,498	\$	-	\$	-	\$	135,554,266	\$790,101,978	\$1,428,701,470
11			\$	25,012,938	\$	-	\$	-	\$	5,753,749	\$30,766,687	\$1,459,468,157
12	\$	-	\$	25,012,938	\$	12,836,230	\$	-	\$	9,591,036	\$47,440,204	\$1,506,908,361
13	\$	-	\$	25,012,938	\$	12,836,230	\$	-	\$	10,492,400	\$48,341,568	\$1,555,249,928
14	\$	-	\$	11,019,582	\$	12,836,230	\$	-	\$	7,192,127	\$31,047,939	\$1,586,297,867
15	\$	-	\$	11,019,582	\$	12,836,230	\$	-	\$	7,782,038	\$31,637,850	\$1,617,935,717
16	\$	-	\$	11,019,582	\$	12,836,230	\$	-	\$	8,383,157	\$32,238,969	\$1,650,174,686
17	\$	-	\$	11,019,582	\$	12,836,230	\$	-	\$	8,995,698	\$32,851,509	\$1,683,026,196
18	\$	-	\$	11,019,582	\$	-	\$	-	\$	4,443,656	\$15,463,238	\$1,698,489,434
19	\$	-	\$	11,019,582	\$	-	\$	-	\$	4,737,457	\$15,757,040	\$1,714,246,473
20	\$	-	\$	11,019,582	\$	-	\$	-	\$	5,036,841	\$16,056,423	\$1,730,302,896
21	\$	-	\$	11,019,582	\$	-	\$	-	\$	5,341,913	\$16,361,495	\$1,746,664,392
22	\$	-	\$	11,019,582	\$	-	\$	-	\$	5,652,782	\$16,672,364	\$1,763,336,755
23	\$	-	\$	11,019,582	\$	-	\$	-	\$	5,969,556	\$16,989,139	\$1,780,325,894
24	\$	-	\$	11,019,582	\$	-	\$	-	\$	6,292,350	\$17,311,932	\$1,797,637,826
25	\$	-	\$	11,019,582	\$	-	\$	-	\$	6,621,277	\$17,640,859	\$1,815,278,685
26	\$	-	\$	11,019,582	\$	-	\$	-	\$	6,956,453	\$17,976,035	\$1,833,254,721
27	\$	-	\$	11,019,582	\$	_	\$	_	\$	7,297,998	\$18,317,580	\$1,851,572,301
28	\$	-	\$	11,019,582	\$	_	\$	_	\$	7,646,032	\$18,665,614	\$1,870,237,915
29	\$	-	\$	11,019,582	\$	-	\$	-	\$	8,000,678	\$19,020,261	\$1,889,258,176
30	\$	-	\$	11,019,582	\$	_	\$	_	\$	8,362,063	\$19,381,646	\$1,908,639,821
31	\$	-	\$	11,019,582	\$	-	\$	_	\$	8,730,315	\$19,749,897	\$1,928,389,718
32	\$	-	\$	11,019,582	\$	-	\$	_	\$	9,105,563	\$20,125,145	\$1,948,514,863
33	\$	-	\$	11,019,582	\$	-	\$	_	\$	9,487,941	\$20,507,523	\$1,969,022,386
34	\$	-	\$	11,019,582	\$	-	\$	_	\$	9,877,583	\$20,897,166	\$1,989,919,551
35	\$	-	\$	11,019,582	\$	-	\$	_	\$	10,274,630	\$21,294,212	\$2,011,213,763
36	\$	-	\$	11,019,582	\$	-	\$	_	\$	10,679,220	\$21,698,802	\$2,032,912,565
37	\$	-	\$	11,019,582	\$	_	\$	_	\$	11,091,497	\$22,111,079	\$2,055,023,644
38	\$	-	\$	11,019,582	\$	_	\$	_	\$	11,511,607	\$22,531,190	\$2,077,554,834
39	\$	-	\$	11,019,582	\$	_	\$	_	\$	11,939,700	\$22,959,282	\$2,100,514,116
40	\$	_	\$	11,019,582	\$	_	\$	_	\$	12,375,926	\$23,395,509	\$2,123,909,624
41	\$	_	\$	11,019,582	\$	_	\$	_	\$	12,820,441	\$23,840,023	\$2,147,749,647
42	\$	_	\$	11,019,582	\$	_	\$	_	\$	13,273,401	\$24,292,984	\$2,172,042,631
43	\$	_	\$	11,019,582	Ś	_	\$	_	\$	13,734,968	\$24,754,550	\$2,196,797,181
44	\$	_	\$	11,019,582	\$	_	\$	_	\$	14,205,305	\$25,224,887	\$2,222,022,068
45	\$	_	\$	11,019,582	Ś	_	\$	_	\$	14,684,577	\$25,704,160	\$2,247,726,228
46	\$	_	\$	11,019,582	Ś	_	\$	_	Ś	15,172,956	\$26,192,539	\$2,273,918,766
47	\$	_	\$	11,019,582	Ś	_	\$	_	\$	15,670,615	\$26,690,197	\$2,300,608,963
48	\$	_	\$	11,019,582	Ś	_	\$	_	\$	16,177,728	\$27,197,311	\$2,327,806,274
49	\$	_	\$	11,019,582	\$	_	\$	_	\$	16,694,477	\$27,714,060	\$2,355,520,333
50	\$	_	\$	11,019,582	Ś	_	\$	_	\$	17,221,044	\$28,240,627	\$2,383,760,960
51	\$	_	\$	11,019,582	\$	_	\$	_	\$	17,757,616	\$28,777,199	\$2,412,538,159
52	ς ς	_	ς ς	11,019,582	\$	_	\$	_	\$	18,304,383	\$29,323,965	\$2,441,862,124
53	ς ς	-	ς ς	11,019,582	ς ς	-	ς ς	_	ς ,	18,861,538	\$29,881,121	\$2,471,743,244
54	ς ς	-	٠ <	11,019,582	ς ς		ς ,	_	¢	19,429,280	\$30,448,862	\$2,502,192,106
55	ب (-	ς ,	11,019,582	٠ ۲	-	ς ,	-	ب (20,007,808	\$30,446,802	\$2,533,219,497
56	۶ \$	<u>-</u>	۶ \$	11,019,582	۶ \$	-	¢	- -	ب د	20,597,329	\$31,616,911	\$2,564,836,408
50 57	ب خ	-	ب د	11,019,582	۶ \$	-	ب د	-	ب خ	21,198,050	\$32,217,632	\$2,597,054,040
57 58	ې د	-	ې د			-	ې د	-	ې د			
	ې د	-	ې د	11,019,582 11,019,582	\$ ¢	-	ې د	-	ې د	21,810,185	\$32,829,767 \$33,453,533	\$2,629,883,807 \$2,663,337,339
59 60	ې خ	-	ې د	11,019,582	ې د	-	ې خ	-	ې د	22,433,950 23,069,568	\$33,453,533	
60 61	ې د	-	ې د	11,019,582	\$ \$	-	ې د	-	\$ \$	23,717,261	\$34,089,150 \$34,736,844	\$2,697,426,489 \$2,732,163,333
OI	٦	-	\$	11,013,364	ڔ	-	Ą	-	Ą	23,/1/,201	7J4,73U,044	74,134,103,333



62	\$ -	\$ 11,019,582	\$	-	\$	-	\$	24,377,261	\$35,396,844	\$2,767,560,176
63	\$ -	\$ 11,019,582	\$	-	\$	-	\$	25,049,801	\$36,069,384	\$2,803,629,560
64	\$ -	\$ 11,019,582	\$	-	\$	-	\$	25,735,120	\$36,754,702	\$2,840,384,262
65	\$0	\$ 11,019,582	\$	-	\$	-	\$	26,433,459	\$37,453,041	\$2,877,837,303
66	\$0	\$ 11,019,582	\$	-	\$	-	\$	27,145,067	\$38,164,649	\$2,916,001,952
67	\$0	\$ 11,019,582	\$	-	\$	-	\$	27,870,195	\$38,889,777	\$2,954,891,730
68	\$0	\$ 11,019,582	\$	-	\$	-	\$	28,609,101	\$39,628,683	\$2,994,520,413
69	\$0	\$ 11,019,582	\$	-	\$	-	\$	29,362,046	\$40,381,628	\$3,034,902,041
70	\$0	\$ 11,019,582	\$	-	\$	-	\$	30,129,297	\$41,148,879	\$3,076,050,920
71	\$0	\$ 11,019,582	\$	-	\$	-	\$	30,911,126	\$41,930,708	\$3,117,981,628
72	\$0	\$ 11,019,582	\$	-	\$	-	\$	31,707,809	\$42,727,391	\$3,160,709,019
73	\$0	\$ 11,019,582	\$	-	\$	-	\$	32,519,629	\$43,539,212	\$3,204,248,231
74	\$0	\$ 11,019,582	\$	-	\$	-	\$	33,346,874	\$44,366,457	\$3,248,614,687
75	\$0	\$ 11,019,582	\$	-	\$	-	\$	34,189,837	\$45,209,419	\$3,293,824,107
76	\$0	\$ 11,019,582	\$	-	\$	-	\$	35,048,816	\$46,068,398	\$3,339,892,505
77	\$0	\$ 11,019,582	\$	-	\$	-	\$	35,924,116	\$46,943,698	\$3,386,836,203
78	\$0	\$ 11,019,582	\$	-	\$	-	\$	36,816,046	\$47,835,628	\$3,434,671,831
79	\$0	\$ 11,019,582	\$	-	\$	-	\$	37,724,923	\$48,744,505	\$3,483,416,336
80	\$0	\$ 11,019,582	\$	-	\$	-	\$	38,651,068	\$49,670,651	\$3,533,086,987
81	\$0	\$ 11,019,582	\$	-	\$	-	\$	39,594,811	\$50,614,393	\$3,583,701,380
82	\$0	\$ 11,019,582	\$	-	\$	-	\$	40,556,484	\$51,576,067	\$3,635,277,447
83	\$0	\$ 11,019,582	\$	-	\$	-	\$	41,536,430	\$52,556,012	\$3,687,833,458
84	\$0	\$ 11,019,582	\$	-	\$	-	\$	42,534,994	\$53,554,576	\$3,741,388,034
85	\$0	\$ 11,019,582	\$	-	\$	-	\$	43,552,531	\$54,572,113	\$3,795,960,147
86	\$0	\$ 11,019,582	\$	-	\$	-	\$	44,589,401	\$55,608,983	\$3,851,569,131
87	\$0	\$ 11,019,582	\$	-	\$	-	\$	45,645,972	\$56,665,554	\$3,908,234,684
88	\$0	\$ 11,019,582	\$	-	\$	-	\$	46,722,617	\$57,742,199	\$3,965,976,884
89	\$0	\$ 11,019,582	\$	-	\$	-	\$	47,819,719	\$58,839,301	\$4,024,816,185
90	\$0	\$ 11,019,582	\$	-	\$	_	\$	48,937,666	\$59,957,248	\$4,084,773,433
91			\$	-	\$	42,500,000	\$	193,134,933	\$235,634,933	\$4,320,408,365
92			\$	-	\$	40,000,000	\$	185,987,761	\$225,987,761	\$4,546,396,127
93			\$	-	\$	49,862,875	\$	237,199,603	\$287,062,478	\$4,833,458,604
94			\$	-	\$	49,862,875	\$	242,653,790	\$292,516,665	\$5,125,975,269
95			\$	-	\$	49,862,875	\$	248,211,606	\$298,074,481	\$5,424,049,750
96					\$	-	\$	-	\$0	\$5,424,049,750
97					\$	_	\$	-	\$0	\$5,424,049,750
98					•		\$	-	\$0	\$5,424,049,750
99							\$	-	\$0	\$5,424,049,750
100							, \$	-	\$0	\$5,424,049,750
							•		, -	, , , , , , , , , ,
	Total	Total	Total			Total		Total		Total
	Design/Const	O&M	Cask Handling	g		D&D		Escalation		Life Cycle
	\$1,157,896,612	\$973,159,561	\$77,017,3	-		\$232,088,625		\$2,983,887,574		\$5,424,049,750
	. , , , -	. , ,= = =	. ,- ,-			. , -,		. , , ,-		, , , , ,



STUDY 1 - ALTERNATIVE STORAGE SYSTEMS FOR DUAL PURPOSE CANISTERS

COST DETAILS

ALTERNATIVE 16 - C-AGV, EXPANDED, HIGH SEISMIC

LIFE CYCLE COST SUMMARIES



Expanded Storage Facility (10,000 MTU)

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

Expanded Project - C-AGV 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>\$1,194,725,041</i>	Operations \$532,376,272 \$77,017,378	Transport	Decommissioning	Escalation	Total Costs \$1,194,725,041 \$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				\$259,186,098	4	\$259,186,098
Escalation					\$1,068,723,652	\$1,068,723,652
Total Costs (40 year Life)						\$3,132,028,442
Present Value						\$1,596,237,768
resem value						φ1,330, 2 37,700
Life Cycle Costs (80 Year Life)	Capital	Operations	Transport	Decommissioning	Escalation	Total Costs
Design & Construction	\$1,194,725,041	•	•	· ·		\$1,194,725,041
Operations & Maintenance (80 Year Life)		\$973,159,561				\$973,159,561
Cask Handling		\$77,017,378				\$77,017,378
Transportation Equipment	\$0					\$0
Transport Operations		\$0	\$0			\$0
Repackaging	\$0	\$0				\$0
Transport to Repository	\$0		\$0			\$0
D&D				\$259,186,098		\$259,186,098
Escalation					\$3,121,513,471	\$3,121,513,471
<i>Total Costs (80 Year Life)</i> Present Value						<i>\$5,625,601,548</i> \$1,703,076,998



STUDY 1 - ALTERNATIVE STORAGE SYSTEMS FOR DUAL PURPOSE CANISTERS

COST DETAILS

ALTERNATIVE 16 - C-AGV, EXPANDED, HIGH SEISMIC

CAPITAL COST SUMMARY

\$10,000,000



Interim Storage Facility

Expanded Storage Facility (10,000 MTU)

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

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

Separate CHB

Level 1	Level 2 Level 3	Descriptio	on	Leve	l 3 Total
C-AGV LE EX 01		Interim St	orage Facility and transportation Project		
	C-AGV LE EX 01.01		Pilot ISF Facility	\$539,062,646	
	0.40///5.5//0	4 04 04	6. 40.4		4.0
	C-AGV LE EX 0		Storage AGVs	Ć1	\$0 62.202.060
	C-AGV LE EX 0 C-AGV LE EX 0		Cask Handling (Transfer) Facility	\$1	63,293,960
			Horizontal Dry Storage Modules	ća	\$0 16 630 53/
	C-AGV LE EX 0		Vertical Dry Storage Module	\$2	16,629,524
	C-AGV LE EX 0		Storage Cask Fabrication Facility		\$0
	C-AGV LE EX 0		Cask Maintenance Facility Concrete Batch Plant		\$(\$1,850,000
	C-AGV LE EX 0 C-AGV LE EX 0		Visitor Center/ Auditorium		\$1,850,000 \$(
	C-AGV LE EX 0				_ا د 3,140,000\$
	C-AGV LE EX 0		Administration Building		33,140,00 24,148,97
	C-AGV LE EX 0		Security Rail Spur/ Receiving Yard		
	C-AGV LE EX 0		Rail Spur/ Receiving Yard Utilities		58,752,80 18,682,15
	C-AGV LE EX 0		Roads		18,212,73
	C-AGV LE EX 0		Parking	Ç	\$735,00
	C-AGV LE EX 0		Site Work	ċ	۶/33,00 23,417,50
	C-AGV LE EX 0		Warehouse		23,417,30 10,200,00
	C-AGV LE EX 0			Ş	
			Maintenance Facility		\$
	C-AGV LE EX 0		Waste management Facility		\$\ \$\
	C-AGV LE EX 0	1.U1.U1.XX	(Add Further Breakdown as needed)		اد
	C-AGV LE EX 01.02		Expanded Interim Storage Facility	\$243,896,353	
	C-AGV LE EX 0	1.02.01	Expanded Storage AGVs and Dry Cask Stora		\$
	C-AGV LE EX 0		Expanded Cask Handling Facility (if require		\$
	C-AGV LE EX 0		Horizontal Dry Storage Modules	ω,	\$
	C-AGV LE EX 0		Vertical Dry Storage Casks	\$2	16,629,52
	C-AGV LE EX 0		Storage Cask Fabrication Facility (Expanded		\$
	C-AGV LE EX 0		Cask Maintenance Facility (Expanded)	^/	\$
	C-AGV LE EX 0		Concrete Batch Plant (Expanded if needed)	1	ر \$1,850,00
	C-AGV LE EX 0		Visitor Center/ Auditorium (expanded if ne		\$745,00\$
	C-AGV LE EX 0		Administration Building (Expanded if need	•	\$743,00
	C-AGV LE EX 0		Security (Expanded)	·	ب 10,074,48
	C-AGV LE EX 0		Rail Spur/ Receiving Yard (Expanded)	Y	\$ \$
	C-AGV LE EX 0		Utilities Expanded as needed)		ب \$3,624,20
	C-AGV LE EX 0		Roads (Expanded)		\$83,14 \$83,14
	C-AGV LE EX 0		Parking (Expanded as needed)		\$83,14
	C-AGV LE EX 0		Site Work (Expanded)	ځ	•
	C-AGV LE EX 0		• •	Ş	10,890,00
	C-AGV LE EX 0		Warehouse (Expanded if Needed)		\$
			Maintenance Facility (Expanded if needed)		\$
	C-AGV LE EX 0		Waste management Facility (Expanded if n	eeded)	\$
	C-AGV LE EX 0		Hot Cell / Laboratories		\$
	C-AGV LE EX 0		Pool Packaging Facility		\$
	C-AGV LE EX 0		Standardized Storage System		\$
	C-AGV LE EX 0		Standardized Disposal Canister		\$
	C-AGV LE EX 0	1.02.23	Canister Repackaging Facility (For Reposito		\$
	C-AGV LE EX 01.03		Transportation Equipment	\$0	
	C-AGV LE EX 0		Transportation Casks		\$
	C-AGV LE EX 0		Rail Equipment		\$
	C-AGV LE EX 0 C-AGV LE EX 0		Rail Maintenance Facility Transportation Systems Services		\$ \$
	C-AGV LE EX 01.04			\$66,025,000	·
		1 04 01	Pre-Construction Capitalized Costs		\$7 600 00
	C-AGV LE EX 0		Land or Land Leases		\$7,680,00
	C-AGV LE EX 0		Site permits		\$200,00
	C-AGV LE EX 0		Site Licensing		\$6,240,00
	C-AGV LE EX 0		Plant Permits		\$
	C-AGV LE EX 0		Planning and Alternative Studies		\$750,00
	C-AGV LE EX 0		Research and Development		\$
	C-AGV LE EX 0		Design		23,955,00
	C-AGV LE EX 0	1.04.09	Other Pre-construction Costs	\$	17,200,00

Pre-construction contingencies

C-AGV LE EX 01.04.10



C-AGV LE EX 01.04.xx	(Add Further Breakdown as needed)		\$0
C-AGV LE EX 01.05	Indirect Capitalized Costs	\$63,180,000	·
C-AGV LE EX 01.05.01	Project Management	, , ,	\$2,700,000
C-AGV LE EX 01.05.02	Construction Management		\$3,600,000
C-AGV LE EX 01.05.03	Field indirect services		\$11,880,000
C-AGV LE EX 01.05.04	Design Services in support of Construction		\$5,400,000
C-AGV LE EX 01.05.05	QA/QC		\$12,600,000
C-AGV LE EX 01.05.06	Commissioning and Startup		\$1,200,000
C-AGV LE EX 01.05.07	Home office Engineering support to Construc	tion	\$7,200,000
C-AGV LE EX 01.05.08	Document Control		\$2,700,000
C-AGV LE EX 01.05.09	Project Controls		\$3,600,000
C-AGV LE EX 01.05.10	Construction Testing		\$2,700,000
C-AGV LE EX 01.05.11	Inspections		\$3,600,000
C-AGV LE EX 01.05.11	Startup and Testing		\$3,000,000
C-AGV LE EX 01.05.12 C-AGV LE EX 01.05.13	Commissioning		\$3,000,000
C-AGV LE EX 01.05.13	Site Selection	\$0	\$3,000,000
	Site Selection	Ş U	¢o
C-AGV LE EX 01.06.01 C-AGV LE EX 01.06.02			\$0 \$0
	Public Information Process	ćo	\$0
C-AGV LE EX 01.07	Decontamination and Deconstruction	\$0	ćo
C-AGV LE EX 01.07.01	Decommissioning		\$0
C-AGV LE EX 01.07.02	Decontamination		\$0
C-AGV LE EX 01.07.03	Deconstruction		\$0
C-AGV LE EX 01.07.04			\$0
C-AGV LE EX 01.07.05		4	\$0
C-AGV LE EX 01.08	Project Financial Costs	\$122,229,976	4
C-AGV LE EX 01.08.01	Contractor Fees		\$72,973,120
C-AGV LE EX 01.08.02	Escalation Costs		\$49,256,856
C-AGV LE EX 01.08.03	Interest Payments		\$0
C-AGV LE EX 01.08.04	Indirect costs to support shipments to reposi	tory	\$0
C-AGV LE EX 01.08.05			\$0
C-AGV LE EX 01.08.xx	(Add Further Breakdown as needed)		\$0
C-AGV LE EX 01.09	Project Contingencies	\$160,331,066	
C-AGV LE EX 01.09.01	Management Reserve - Contractor Held		\$51,719,699
C-AGV LE EX 01.09.02	Contingency - DOE held		\$108,611,367
C-AGV LE EX 01.10			
C-AGV LE EX 01.10.01	Other Direct Costs	\$0	
C-AGV LE EX 01.10.02	DOE Project Operations		\$0
C-AGV LE EX 01.10.03	DOE TM&E		\$0
C-AGV LE EX 01.10.04	Host site Operational Costs Miscellaneou	JS	\$0
C-AGV LE EX 01.10.05	Miscellaneous ODC		\$0
C-AGV LE EX 01.11	Operational Costs	0	
C-AGV LE EX 01.11.01	Operations Costs	•	\$0
C-AGV LE EX 01.11.02	Transportation Costs		\$0
C-AGV LE EX 01.11.03	Escalation (Operations/Transportation)		\$0
C //CV EE E// OI.11.03	Escalation (operations, manaportation)		γo
	(All Direct & indirect Cost	s. MR	
	TEC Escalation)	<i>>,</i> 14111,	\$1,086,113,674
	TDS /TES plus Soutingons: Of	OC-1	¢1,000,115,071

Project Total

	(All Direct & Indirect Costs, IVIR,	
TEC	Escalation)	\$1,086,113,674
TPC	(TEC plus Contingency, ODCs)	\$1,194,725,041
	All Capitol, Operation, Transportation,	
LCC	Escalation	\$1,194,725,041



STUDY 1 - ALTERNATIVE STORAGE SYSTEMS FOR DUAL PURPOSE CANISTERS

COST DETAILS

ALTERNATIVE 16 - C-AGV, EXPANDED, HIGH SEISMIC

LIFE CYCLE COST - 40 YEAR OPERATING LIFE



Expanded Storage Facility (10,000 MTU)

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

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

Separate CHB

Separa 40 Yea		erating life							An	nual Escalation 1.90%			Dis	scount Rate 3.40%
YEAR		Design/Const		O&M	C	ask Handling		D&D		Escalation	Λn	ınual Expense		Cumulative
1	\$	10,000,000	\$	UQIVI -		sk Handling	\$	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	\$	666,836,642	\$	24,539,498	\$	-	\$	-	\$	143,181,289	\$	834,557,430	\$	1,473,156,922
11			\$	25,012,938	\$	-	\$	-	\$	5,753,749	\$	30,766,687	\$	1,503,923,609
12	\$	-	\$	25,012,938	\$	12,836,230	\$	-	\$	9,591,036	\$	47,440,204	\$	1,551,363,813
13	\$	-	\$	25,012,938	\$	12,836,230	\$	-	\$	10,492,400	\$	48,341,568	\$	1,599,705,381
14	\$	-	\$	11,019,582	\$	12,836,230	\$	-	\$	7,192,127	\$	31,047,939	\$	1,630,753,319
15	\$	-	\$	11,019,582	\$	12,836,230	\$	-	\$	7,782,038	\$	31,637,850	\$	1,662,391,169
16	\$	-	\$	11,019,582	\$	12,836,230	\$	-	\$	8,383,157	\$	32,238,969	\$	1,694,630,138
17	\$	-	\$	11,019,582	\$	12,836,230	\$	-	\$	8,995,698	\$	32,851,509	\$	1,727,481,648
18	\$	-	\$	11,019,582	\$	-	\$	-	\$	4,443,656	\$	15,463,238	\$	1,742,944,886
19	\$	-	\$	11,019,582	\$	-	\$	-	\$	4,737,457	\$	15,757,040	\$	1,758,701,925
20	\$	-	\$	11,019,582	\$	-	\$	-	\$	5,036,841	\$	16,056,423	\$	1,774,758,349
21	\$	-	\$	11,019,582	\$	-	\$	-	\$	5,341,913	\$	16,361,495	\$	1,791,119,844
22	Ş ,	-	\$	11,019,582	Ş ,	-	\$	-	\$	5,652,782	\$	16,672,364	\$	1,807,792,208
23	\$ \$	-	\$	11,019,582	\$ \$	-	\$	-	\$	5,969,556	\$	16,989,139	\$	1,824,781,346
24	\$	-	\$	11,019,582	\$	-	\$	-	\$	6,292,350	\$	17,311,932	\$	1,842,093,279
25	\$ \$	-	\$ \$	11,019,582	\$ \$	-	\$ \$	-	\$ \$	6,621,277	\$ \$	17,640,859	\$ \$	1,859,734,138
26	\$ \$	-	\$ \$	11,019,582	\$ \$	-	\$ \$	-	\$ \$	6,956,453	\$ \$	17,976,035	\$ \$	1,877,710,173
27	\$ ¢	-	\$ ¢	11,019,582	\$	-	\$ ¢	-	\$ ¢	7,297,998	\$	18,317,580	\$ ¢	1,896,027,753
28	<u>۲</u>	-	<u>ې</u> د	11,019,582	<u>۲</u>	-	<u>خ</u>	-	ب	7,646,032	\$	18,665,614	خ	1,914,693,367
29	۶ خ	-	ې د	11,019,582	۶ خ	-	ې د	-	ې د	8,000,678	\$ ¢	19,020,261	ې د	1,933,713,628
30 31	ې د	-	ې د	11,019,582 11,019,582	ې د	-	ې د	-	ې د	8,362,063 8,730,315	\$ ¢	19,381,646 19,749,897	ې د	1,953,095,273
32	ې د	_	ې د	11,019,582	ې د	_	ې د	_	ې د	9,105,563	\$ \$	20,125,145	ې د	1,972,845,170 1,992,970,315
33	ب ذ		ب خ	11,019,582	٠ د	_	ب خ	_	ب خ	9,487,941	۶ \$	20,507,523	ب خ	2,013,477,838
34	٠ \$	_	ς ,	11,019,582	٠ \$	_	٠ \$	_	٠ \$	9,877,583	\$	20,897,166	ς ς	2,034,375,004
35	\$	_	\$	11,019,582	\$	_	\$	_	\$	10,274,630	\$	21,294,212	\$	2,055,669,215
36	\$	_	\$	11,019,582	\$	_	\$	_	\$	10,679,220	\$	21,698,802	\$	2,077,368,017
37	\$	_	\$	11,019,582	\$	_	\$	_	\$	11,091,497	\$	22,111,079	\$	2,099,479,096
38	\$	-	\$	11,019,582	\$	_	\$	_	\$	11,511,607	\$	22,531,190	\$	2,122,010,286
39	\$	-	\$	11,019,582	\$	-	\$	-	\$	11,939,700	\$	22,959,282	\$	2,144,969,568
40	\$	-	\$	11,019,582	\$	-	\$	-	\$	12,375,926	\$	23,395,509	\$	2,168,365,076
41	\$	-	\$	11,019,582	\$	-	\$	-	\$	12,820,441	\$	23,840,023	\$	2,192,205,100
42	\$	-	\$	11,019,582	\$	-	\$	-	\$	13,273,401	\$	24,292,984	\$	2,216,498,083
43	\$	-	\$	11,019,582	\$	-	\$	-	\$	13,734,968	\$	24,754,550	\$	2,241,252,634
44	\$	-	\$	11,019,582	\$	-	\$	-	\$	14,205,305	\$	25,224,887	\$	2,266,477,520
45	\$	-	\$	11,019,582	\$	-	\$	-	\$	14,684,577	\$	25,704,160	\$	2,292,181,680
46	\$	-	\$	11,019,582	\$	-	\$	-	\$	15,172,956	\$	26,192,539	\$	2,318,374,219
47	\$	-	\$	11,019,582	\$	-	\$	-	\$	15,670,615	\$	26,690,197	\$	2,345,064,415
48	\$	-	\$	11,019,582	\$	-	\$	-	\$	16,177,728	\$	27,197,311	\$	2,372,261,726
49	\$	-	\$	11,019,582	\$	-	\$	-	\$	16,694,477	\$	27,714,060	\$	2,399,975,785
50	\$	-	\$	11,019,582	\$	-	\$	-	\$	17,221,044	\$	28,240,627	\$	2,428,216,412
51	\$	-	\$	-	\$	-	\$	42,500,000	\$	68,487,052	\$	110,987,052	\$	2,539,203,464
52	\$	-	\$	-	\$	-	\$	40,000,000	\$	66,443,111	\$	106,443,111	\$	2,645,646,575
53	\$	-	\$	-	\$	-	\$	58,895,366	\$	100,807,562	\$	159,702,928	\$	2,805,349,503
54	\$	-	\$	-	\$	-	\$	58,895,366	\$	103,841,917	\$	162,737,283	\$	2,968,086,786
55	\$	-	\$	-	\$	-	\$	58,895,366	\$	106,933,926	\$	165,829,292	\$	3,133,916,078
56	Ş ,	-	\$	-	\$ _	-	\$	-	\$	-	\$	-	\$	3,133,916,078
57	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	3,133,916,078
58	\$	-	\$ •	-	\$ ^	-	\$	-	\$ •	-	\$ ^	-	\$ ^	3,133,916,078
59	\$ ^	-	\$ •	-	\$ ^	-	\$	-	\$ •	-	\$ ^	-	\$ ^	3,133,916,078
60	>	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	3,133,916,078
		Total		Total				Total		Total				Total
	г	Design/Const		O&M				D&D		Escalation				Life Cycle
		1,194,725,041	\$	532,376,272	\$	77,017,378	\$		\$				\$	3,133,916,078
	ب	±,±3 7 ,123,041	ب	JJ2,J10,Z1Z	ب	,,,017,376	ڔ	200,100,000	Ą	1,0,0,011,200			ب	3,133,310,070



STUDY 1 - ALTERNATIVE STORAGE SYSTEMS FOR DUAL PURPOSE CANISTERS

COST DETAILS

ALTERNATIVE 16 - C-AGV, EXPANDED, HIGH SEISMIC

LIFE CYCLE COST - 80 YEAR OPERATING LIFE



Expanded Storage Facility (10,000 MTU)

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

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

Separate CHB

80 Year Operating Life

80 Yea	гОр	perating Life							A	Annual Escalation 1.90%		Discount Rate 3.40%
											Annual	
YEAR		Design/Const		O&M		ask Handling		D&D		Escalation	Funding	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	\$ ¢	-	\$ د	-	\$ د	-	;	\$ 1,563,871	\$21,563,871	\$63,299,279
5 6	\$ \$	20,000,000 20,000,000	\$ \$	-	ې د	-	ې د	-		\$ 1,973,585 \$ 2,391,083	\$21,973,585 \$22,391,083	\$85,272,863 \$107,663,946
7	۶ \$	27,888,399	\$	_	ب خ	_	٠ ,	_		\$ 2,391,083	\$31,815,802	\$139,479,748
8	\$	200,000,000	\$	_	٠ \$	_	٠ \$	_	,	\$ 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	\$	666,836,642	\$	24,539,498	\$	-	\$	-		\$ 143,181,289	\$834,557,430	\$1,473,156,922
11	·	, ,	\$	25,012,938	\$	12,836,230	\$	-		\$ 8,706,478	\$46,555,646	\$1,519,712,568
12	\$	-	\$	25,012,938	\$	12,836,230	\$	-		\$ 9,591,036	\$47,440,204	\$1,567,152,772
13	\$	-	\$	25,012,938	\$	12,836,230	\$	-	:	\$ 10,492,400	\$48,341,568	\$1,615,494,340
14	\$	-	\$	11,019,582	\$	12,836,230	\$	-		\$ 7,192,127	\$31,047,939	\$1,646,542,279
15	\$	-	\$	11,019,582	\$	12,836,230	\$	-	:	\$ 7,782,038	\$31,637,850	\$1,678,180,128
16	\$	-	\$	11,019,582	\$	12,836,230	\$	-	:	\$ 8,383,157	\$32,238,969	\$1,710,419,097
17	\$	-	\$	11,019,582	\$	-	\$	-	:	\$ 4,155,332	\$15,174,915	\$1,725,594,012
18	\$	-	\$	11,019,582	\$	-	\$	-		\$ 4,443,656	\$15,463,238	\$1,741,057,250
19	\$	-	\$	11,019,582	\$	-	\$	-		\$ 4,737,457	\$15,757,040	\$1,756,814,290
20	\$	-	\$	11,019,582	\$	-	\$	-		\$ 5,036,841	\$16,056,423	\$1,772,870,713
21	\$ ¢	-	\$	11,019,582	\$	-	\$ د	-	:	\$ 5,341,913	\$16,361,495	\$1,789,232,208
22	۶ د	-	\$ \$	11,019,582	\$ ¢	-	\$ ¢	-	;	\$ 5,652,782	\$16,672,364	\$1,805,904,572
23 24	ې د	-	\$ \$	11,019,582 11,019,582	\$ ¢	-	ې د	-		\$ 5,969,556 \$ 6,292,350	\$16,989,139 \$17,311,932	\$1,822,893,711 \$1,840,205,643
25	٠ ۲	_	ب خ	11,019,582	ب خ	_	٠ ۲	_		\$ 6,621,277	\$17,640,859	\$1,840,203,043
26	\$	_	Ś	11,019,582	\$	_	\$	_	,	\$ 6,956,453	\$17,976,035	\$1,875,822,537
27	\$	-	\$	11,019,582	\$	_	\$	_		\$ 7,297,998	\$18,317,580	\$1,894,140,117
28	\$	-	\$	11,019,582	\$	_	\$	_		\$ 7,646,032	\$18,665,614	\$1,912,805,731
29	\$	-	\$	11,019,582	\$	_	\$	_		\$ 8,000,678	\$19,020,261	\$1,931,825,992
30	\$	-	\$	11,019,582	\$	-	\$	-		\$ 8,362,063	\$19,381,646	\$1,951,207,638
31	\$	-	\$	11,019,582	\$	-	\$	-		\$ 8,730,315	\$19,749,897	\$1,970,957,535
32	\$	-	\$	11,019,582	\$	-	\$	-	:	\$ 9,105,563	\$20,125,145	\$1,991,082,680
33	\$	-	\$	11,019,582	\$	-	\$	-	:	\$ 9,487,941	\$20,507,523	\$2,011,590,202
34	\$	-	\$	11,019,582	\$	-	\$	-	:	\$ 9,877,583	\$20,897,166	\$2,032,487,368
35	\$	-	\$	11,019,582	\$	-	\$	-	:	\$ 10,274,630	\$21,294,212	\$2,053,781,580
36	\$	-	\$	11,019,582	\$	-	\$	-		\$ 10,679,220	\$21,698,802	\$2,075,480,382
37	\$	-	\$	11,019,582	\$	-	\$	-		\$ 11,091,497	\$22,111,079	\$2,097,591,461
38	\$ ¢	-	\$	11,019,582	\$ د	-	>	-	:	\$ 11,511,607	\$22,531,190	\$2,120,122,650
39 40	ې د	-	\$ \$	11,019,582	ې د	-	ې د	-		\$ 11,939,700	\$22,959,282 \$23,395,509	\$2,143,081,932 \$2,166,477,441
41	ې د	-	۶ د	11,019,582 11,019,582	ې د	_	ې د	_		\$	\$23,840,023	\$2,190,317,464
42	٠ ۲	_	۶ \$	11,019,582	ب خ	_	٠ ۲	_		\$ 13,273,401	\$23,840,023	\$2,214,610,448
43	\$	-	\$	11,019,582	\$	_	\$	_		\$ 13,734,968	\$24,754,550	\$2,239,364,998
44	\$	-	\$	11,019,582	\$	-	\$	_		\$ 14,205,305	\$25,224,887	\$2,264,589,885
45	\$	-	\$	11,019,582	\$	_	\$	_		\$ 14,684,577	\$25,704,160	\$2,290,294,044
46	\$	-	\$	11,019,582	\$	-	\$	-		\$ 15,172,956	\$26,192,539	\$2,316,486,583
47	\$	-	\$	11,019,582	\$	-	\$	-	:	\$ 15,670,615	\$26,690,197	\$2,343,176,780
48	\$	-	\$	11,019,582	\$	-	\$	-	:	\$ 16,177,728	\$27,197,311	\$2,370,374,090
49	\$	-	\$	11,019,582	\$	-	\$	-		\$ 16,694,477	\$27,714,060	\$2,398,088,150
50	\$	-	\$	11,019,582	\$	-	\$	-	:	\$ 17,221,044	\$28,240,627	\$2,426,328,777
51	\$	-	\$	11,019,582	\$	-	\$	-		\$ 17,757,616	\$28,777,199	\$2,455,105,975
52	\$	-	\$	11,019,582	\$	-	\$	-		\$ 18,304,383	\$29,323,965	\$2,484,429,940
53 54	\$	-	\$ ^	11,019,582	\$ ^	-	\$ ^	-		\$ 18,861,538	\$29,881,121	\$2,514,311,061
54	> خ	-	<u>></u>	11,019,582	>	-	ب	-		\$ 19,429,280	\$30,448,862	\$2,544,759,923
55 56	ې د	-	ې د	11,019,582	ç	-	ې د	-	;	\$ 20,007,808 \$ 20,597,329	\$31,027,390	
56 57	\$ \$	-	\$ \$	11,019,582 11,019,582	\$ \$	- -	ې د	-		\$ 20,597,329 \$ 21,198,050	\$31,616,911 \$32,217,632	\$2,607,404,224 \$2,639,621,856
57 58	ب خ	-	\$ \$	11,019,582	\$ \$	-	ب خ	-		\$ 21,198,030 \$ 21,810,185	\$32,829,767	\$2,639,621,836
59	ب ج	- -	۶ \$	11,019,582	\$	-	ب ج	-	,	\$ 22,433,950	\$32,829,707	\$2,705,905,156
60	\$	-	\$	11,019,582	\$	_	\$	_	,	\$ 23,069,568	\$33,433,333	\$2,739,994,306
61	\$	-	\$	11,019,582	\$	-	\$	-	•	\$ 23,717,261	\$34,736,844	\$2,774,731,149
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\$1,194,725,041

\$973,159,561

\$77,017,378

\$259,186,098

\$3,121,513,471

\$5,625,601,548



62	\$ -	\$ 11,019,582	\$	-	\$	-	\$ 24,377,261	\$35,396,844	\$2,810,127,993
63	\$ -	\$ 11,019,582	\$	-	\$	-	\$ 25,049,801	\$36,069,384	\$2,846,197,377
64	\$ -	\$ 11,019,582	\$	-	\$	-	\$ 25,735,120	\$36,754,702	\$2,882,952,078
65	\$0	\$ 11,019,582	\$	-	\$	-	\$ 26,433,459	\$37,453,041	\$2,920,405,120
66	\$0	\$ 11,019,582	\$	-	\$	-	\$ 27,145,067	\$38,164,649	\$2,958,569,769
67	\$0	\$ 11,019,582	\$	-	\$	-	\$ 27,870,195	\$38,889,777	\$2,997,459,546
68	\$0	\$ 11,019,582	\$	-	\$	-	\$ 28,609,101	\$39,628,683	\$3,037,088,229
69	\$0	\$ 11,019,582	\$	-	\$	-	\$ 29,362,046	\$40,381,628	\$3,077,469,858
70	\$0	\$ 11,019,582	\$	-	\$	-	\$ 30,129,297	\$41,148,879	\$3,118,618,737
71	\$0	\$ 11,019,582	\$	-	\$	-	\$ 30,911,126	\$41,930,708	\$3,160,549,444
72	\$0	\$ 11,019,582	\$	-	\$	-	\$ 31,707,809	\$42,727,391	\$3,203,276,836
73	\$0	\$ 11,019,582	\$	-	\$	-	\$ 32,519,629	\$43,539,212	\$3,246,816,047
74	\$0	\$ 11,019,582	\$	-	\$	-	\$ 33,346,874	\$44,366,457	\$3,291,182,504
75	\$0	\$ 11,019,582	\$	-	\$	-	\$ 34,189,837	\$45,209,419	\$3,336,391,923
76	\$0	\$ 11,019,582	\$	-	\$	-	\$ 35,048,816	\$46,068,398	\$3,382,460,322
77	\$0	\$ 11,019,582	\$	-	\$	-	\$ 35,924,116	\$46,943,698	\$3,429,404,020
78	\$0	\$ 11,019,582	\$	-	\$	-	\$ 36,816,046	\$47,835,628	\$3,477,239,648
79	\$0	\$ 11,019,582	\$	-	\$	-	\$ 37,724,923	\$48,744,505	\$3,525,984,153
80	\$0	\$ 11,019,582	\$	-	\$	-	\$ 38,651,068	\$49,670,651	\$3,575,654,804
81	\$0	\$ 11,019,582	\$	-	\$	-	\$ 39,594,811	\$50,614,393	\$3,626,269,197
82	\$0	\$ 11,019,582	\$	-	\$	-	\$ 40,556,484	\$51,576,067	\$3,677,845,263
83	\$0	\$ 11,019,582	\$	-	\$	-	\$ 41,536,430	\$52,556,012	\$3,730,401,275
84	\$0	\$ 11,019,582	\$	-	\$	-	\$ 42,534,994	\$53,554,576	\$3,783,955,851
85	\$0	\$ 11,019,582	\$	-	\$	-	\$ 43,552,531	\$54,572,113	\$3,838,527,964
86	\$0	\$ 11,019,582	\$	-	\$	-	\$ 44,589,401	\$55,608,983	\$3,894,136,947
87	\$0	\$ 11,019,582	\$	-	\$	-	\$ 45,645,972	\$56,665,554	\$3,950,802,501
88	\$0	\$ 11,019,582	\$	-	\$	-	\$ 46,722,617	\$57,742,199	\$4,008,544,700
89	\$0	\$ 11,019,582	\$	-	\$	-	\$ 47,819,719	\$58,839,301	\$4,067,384,001
90	\$0	\$ 11,019,582	\$	-	\$	-	\$ 48,937,666	\$59,957,248	\$4,127,341,249
91			\$	-	\$	42,500,000	\$ 193,134,933	\$235,634,933	\$4,362,976,182
92			\$	-	\$	40,000,000	\$ 185,987,761	\$225,987,761	\$4,588,963,943
93			\$	-	\$	58,895,366	\$ 280,167,507	\$339,062,873	\$4,928,026,816
94			\$	-	\$	58,895,366	\$ 286,609,702	\$345,505,068	\$5,273,531,884
95			\$	-	\$	58,895,366	\$ 293,174,298	\$352,069,664	\$5,625,601,548
96					\$	-	\$ -	\$0	\$5,625,601,548
97					\$	-	\$ -	\$0	\$5,625,601,548
98							\$ -	\$0	\$5,625,601,548
99							\$ -	\$0	\$5,625,601,548
100							\$ -	\$0	\$5,625,601,548
	Total	Total	Total			Total	Total		Total
	Design/Const	0&M	Cask Handli	ng		D&D	Escalation		Life Cycle
	4	40-0 4-0 -64	4 04-		_		40 404 -40 4-4		4-60-604-40