

Unit 1 Valves

Equipment	Energy Loss (MWe)	Manufacturer	Model
Steam Valve 1 1-FMO-260 (L)	47.41	Lunkeheimer	1469XB7MOD-12I
Steam Valve 2 1-MRV-403	18.96	Copes-Vulcan	GS6
Steam Valve 3 1-MS-239	18.12	Velan Valve Corp.	B09-2074C-02TY
Steam Valve 4 1-CRV-224 (L)	16.37	Fisher Controls Co.	V300
Steam Valve 5 1-DRV-423	9.19	Fisher Controls Co.	ED
Steam Valve 6 1-CRV-224 (H)	6.01	Fisher Controls Co.	V300
Steam Valve 7 1-MSD-219L	2.11	Velan Valve Corp.	B12-2064C-02TY
Steam Valve 8 1-HRV-562	1.52	Hammel-Dahl	500THC82HBOG
Steam Valve 9 1-HRV-561	1.48	Hammel-Dahl	500THC82HBOG
Steam Valve 10 1-MRV-409	0.95	Fisher Controls Co.	EZ
			Averages

Replacement Materials Total	139,976.68 USD	(This is the FCI)
Replacement Maintenance Total	54,300.00 USD	(This is the WC)
Yearly Energy Loss	1,025,808 MWh	
Yearly Energy Loss Cash Value	28,722,624.00 USD	

Material Cost (USD)	Maintenance Cost (USD)	Total Repair Cost	Electricity Value:
\$13,997.67	\$17,000.00	\$30,997.67	Estimated Downtime:
\$14,042.00	\$5,430.00	\$19,472.00	
\$2,000.00	\$5,430.00	\$7,430.00	
\$16,972.00	\$5,430.00	\$22,402.00	
\$13,997.67	\$3,880.00	\$17,877.67	
\$16,972.00	\$5,430.00	\$22,402.00	
\$13,997.67	\$900.00	\$14,897.67	
\$17,000.00	\$1,500.00	\$18,500.00	
\$17,000.00	\$1,500.00	\$18,500.00	
\$13,997.67	\$7,800.00	\$21,797.67	
\$13,997.67	\$5,430.00	\$19,427.67	

Note: Holes in the data provided by Katelin were filled with average material or mai

28 USD/MWh
360 Hours/year

aintenance costs respectively

Unit 2 Valves

Equipment	Energy Loss (MWe)	Manufacturer	Model
Steam Valve 1 2-T-121-6	21.22	Armstrong	5133-1I
Steam Valve 2 2-FMO-260	8.31	Lunkeheimer	1469XB7MOD-12I
Steam Valve 3 2-T-121-5	8.01	Armstrong	5133-1I
Steam Valve 4 2-CRV-224	4.63	Fisher Controls Co.	8-U
Steam Valve 5 2-MS-239	3.75	Velan Valve Corp.	B10-2074C-02TS
Steam Valve 6 2-HRV-461	2.16	Fisher Controls Co.	V100
Steam Valve 7 2-HRV-462	1.73	Fisher Controls Co.	V100
Steam Valve 8 2-DRV-406	1.67	Hammel-Dahl	500LFK93HAEGZ
Steam Valve 9 2-HRV-557	1.62	Hammel-Dahl	500SHC82HAOGJ
Steam Valve 10 2-B-431	1.57	Lunkeheimer	

Averages

Replacement Materials Total	116,916.68 USD	(This is the FCI)
Replacement Maintenance Total	57,000.00 USD	(This is the WC)
Yearly Energy Loss	459,228 MWh	
Yearly Energy Loss Cash Value	12,858,384.00 USD	

Material Cost (USD)	Maintenance Cost (USD)	Total Repair Cost
\$11,691.67	\$7,800.00	\$19,491.67
\$11,691.67	\$17,000.00	\$28,691.67
\$11,691.67	\$7,800.00	\$19,491.67
\$14,000.00	\$1,800.00	\$15,800.00
\$2,000.00	\$5,700.00	\$7,700.00
\$7,500.00	\$3,000.00	\$10,500.00
\$17,050.00	\$4,000.00	\$21,050.00
\$5,600.00	\$5,000.00	\$10,600.00
\$24,000.00	\$4,000.00	\$28,000.00
\$11,691.67	\$900.00	\$12,591.67
\$11,691.67	\$5,700.00	\$17,391.67

Note: Holes in the data provided by Katelin were filled with average mate

Electricity Value:	28 USD/MWh
Estimated Downtime:	360 Hours/year

Material or maintenance costs respectively

MARR 5% (Covers the cost of inflation)
 Tax Rate 21%
 Reduction of Steam Losses 90% (Quantity of lost steam that stays in the system after new v

Year	FCI (\$)	WC (\$)	INC (\$)	EXP (\$)
0	139,976.68	54,300.00	0.00	0.00
1	0	0	25,850,361.60	2,926,562.40
2	0	0	25,850,361.60	2,926,562.40
3	0	0	25,850,361.60	2,926,562.40
4	0	0	25,850,361.60	2,926,562.40
5	0	-54,300.00	25,850,361.60	2,926,562.40

NPV 78,475,242.84 USD
 PBP 0.010717803 Years
 PBP 3.911997915 Days

valve installation)

DEP FRACT	BV (\$)	DEP (\$)	PROFIT (\$)	TAX (\$)	CF (\$)
0	139,976.68	0	0	0	-194,276.68
0.3333	93,322.45	46,654	22,877,144.97	4,804,200.44	18,119,598.76
0.4445	31,102.82	62,220	22,861,579.57	4,800,931.71	18,122,867.49
0.1481	10,372.27	20,731	22,903,068.65	4,809,644.42	18,114,154.78
0.0741	0.00	10,372	22,913,426.93	4,811,819.65	18,111,979.55
0	0.00	0	22,923,799.20	4,813,997.83	18,164,101.37

DF CASH	DISC CF (\$)
1	-194,276.68
0.952380952	17,256,760.72
0.907029478	16,437,975.05
0.863837599	15,647,687.97
0.822702475	14,900,770.40
0.783526166	14,232,048.71

MARR 5% (Covers the cost of inflation)
 Tax Rate 21%
 Reduction of Steam Losses 90% (Quantity of lost steam that stays in the system after new \

Year	FCI (\$)	WC (\$)	INC (\$)	EXP (\$)
0	116,916.68	57,000.00	0.00	0.00
1	0	0	11,572,545.60	1,342,838.40
2	0	0	11,572,545.60	1,342,838.40
3	0	0	11,572,545.60	1,342,838.40
4	0	0	11,572,545.60	1,342,838.40
5	0	-57,000.00	11,572,545.60	1,342,838.40

NPV 35,055,521.64 USD
 PBP 0.021477084 Years
 PBP 7.839135487 Days

/alve installation)

DEP FRACT	BV (\$)	DEP (\$)	PROFIT (\$)	TAX (\$)	CF (\$)
0	116,916.68	0	0	0	-173,916.68
0.3333	77,948.35	38,968	10,190,738.87	2,140,055	8,089,652.04
0.4445	25,978.89	51,969	10,177,737.74	2,137,325	8,092,382.28
0.1481	8,663.53	17,315	10,212,391.84	2,144,602	8,085,104.91
0.0741	0.00	8,664	10,221,043.67	2,146,419	8,083,288.03
0	0.00	0	10,229,707.20	2,148,239	8,138,468.69

DF CASH	DISC CF (\$)
1	-173,916.68
0.952380952	7,704,430.51
0.907029478	7,340,029.27
0.863837599	6,984,217.61
0.822702475	6,650,141.07
0.783526166	6,376,703.17

MARR 5% (Covers the cost of inflation)
 Tax Rate 21%
 Reduction of Steam Losses 55% (Quantity of lost steam that stays in the system after new v

Year	FCI (\$)	WC (\$)	INC (\$)	EXP (\$)
0	139,976.68	54,300.00	0.00	0.00
1	0	0	15,797,443.20	12,979,480.80
2	0	0	15,797,443.20	12,979,480.80
3	0	0	15,797,443.20	12,979,480.80
4	0	0	15,797,443.20	12,979,480.80
5	0	-54,300.00	15,797,443.20	12,979,480.80

NPV 9,707,519.26 USD
 PBP 0.086617389 Years
 PBP 31.6153468 Days

valve installation)

DEP FRACT	BV (\$)	DEP (\$)	PROFIT (\$)	TAX (\$)	CF (\$)
0	139,976.68	0	0	0	-194,276.68
0.3333	93,322.45	46,654	2,771,308.17	581,974.72	2,235,987.68
0.4445	31,102.82	62,220	2,755,742.77	578,705.98	2,239,256.42
0.1481	10,372.27	20,731	2,797,231.85	587,418.69	2,230,543.71
0.0741	0.00	10,372	2,807,590.13	589,593.93	2,228,368.47
0	0.00	0	2,817,962.40	591,772.10	2,280,490.30

DF CASH	DISC CF (\$)
1	-194,276.68
0.952380952	2,129,512.08
0.907029478	2,031,071.58
0.863837599	1,926,827.52
0.822702475	1,833,284.26
0.783526166	1,786,823.82

MARR 5% (Covers the cost of inflation)
 Tax Rate 21%
 Reduction of Steam Losses 55% (Quantity of lost steam that stays in the system after new \

Year	FCI (\$)	WC (\$)	INC (\$)	EXP (\$)
0	116,916.68	57,000.00	0.00	0.00
1	0	0	7,072,111.20	5,843,272.80
2	0	0	7,072,111.20	5,843,272.80
3	0	0	7,072,111.20	5,843,272.80
4	0	0	7,072,111.20	5,843,272.80
5	0	-57,000.00	7,072,111.20	5,843,272.80

NPV 4,269,970.96 USD
 PBP 0.176190803 Years
 PBP 64.30964328 Days

/alve installation)

DEP FRACT	BV (\$)	DEP (\$)	PROFIT (\$)	TAX (\$)	CF (\$)
0	116,916.68	0	0	0	-173,916.68
0.3333	77,948.35	38,968	1,189,870.07	249,873	978,965.69
0.4445	25,978.89	51,969	1,176,868.94	247,142	981,695.92
0.1481	8,663.53	17,315	1,211,523.04	254,420	974,418.56
0.0741	0.00	8,664	1,220,174.87	256,237	972,601.68
0	0.00	0	1,228,838.40	258,056	1,027,782.34

DF CASH	DISC CF (\$)
1	-173,916.68
0.952380952	932,348.27
0.907029478	890,427.14
0.863837599	841,739.39
0.822702475	800,161.81
0.783526166	805,294.35