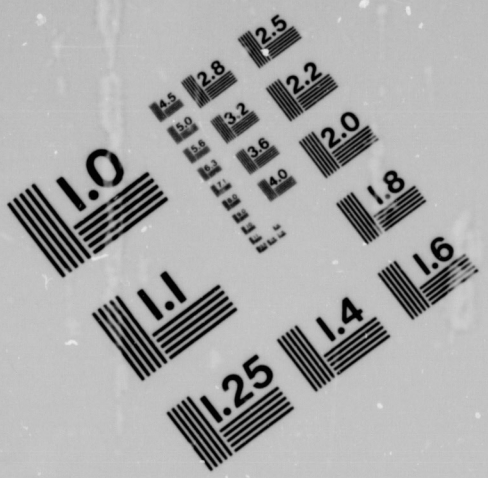
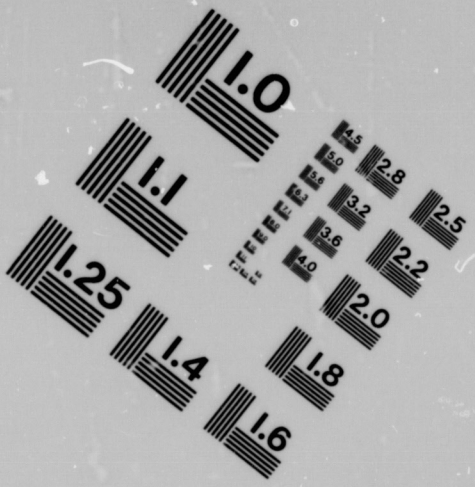
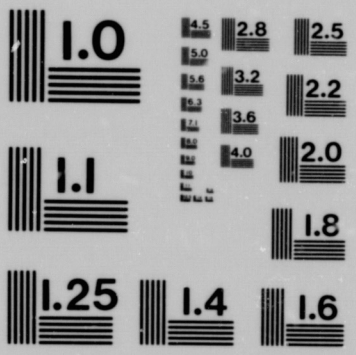
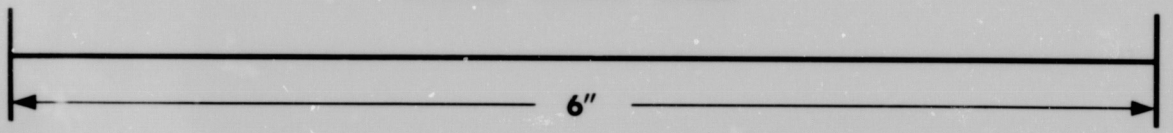
B INTEGRAL MONITORED RETRIEVABLE STORAGE (MRS) FACILITY. CONCEPTUAL DESIGN REPORT - VOLUME V (BOOK X) COST ESTIMATE. FICHE 660

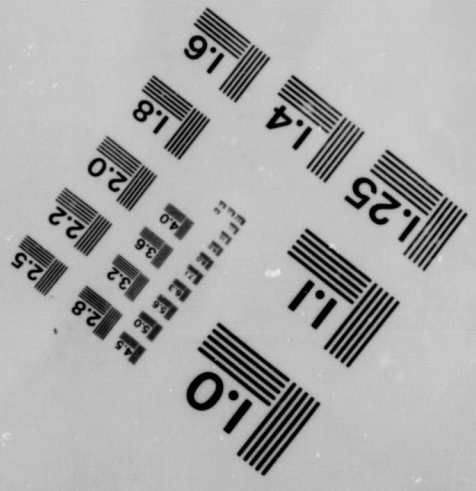
RESOLUTION TEST
TARGET (NE-1)

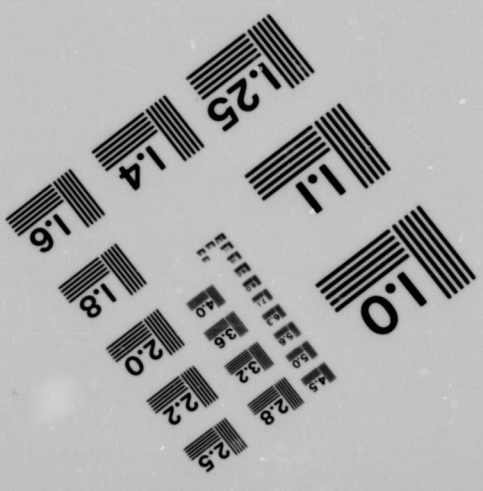












INTEGRAL MONITORED RETRIEVABLE STORAGE (MRS) FACILITY

CONCEPTUAL DESIGN REPORT

VOLUME V BOOK X – COST ESTIMATE

Prepared for

UNITED STATES DEPARTMENT OF ENERGY
Richland Operations Office

THE RALPH M. PARSONS COMPANY OF DELAWARE
Westinghouse Electric Corporation
Golder Associates

DISCLAIMER

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INTEGRAL MONITORED RETRIEVABLE STORAGE (MRS) FACILITY

CONCEPTUAL DESIGN REPORT

VOLUME V BOOK X – COST ESTIMATE

Prepared for

UNITED STATES DEPARTMENT OF ENERGY
Richland Operations Office

Report No. MRS 11
Contract No. DE-AC06-84RL 10436
September 1985

THE RALPH M. PARSONS COMPANY OF DELAWARE
Westinghouse Electric Corporation
Golder Associates

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HARTSVILLE SITE
PRIMARY CONCEPT

COST ESTIMATE SUMMARY

DD-1(1-79)

PREPARED BY:

MRS Facility Hartsville Base Case - Cask Storage

PROJECT COST ESTIMATE SUMMARY

TITLE	PREPARED FOR	PREPARED BY	CHECKED BY	PROJECT NO.	DATE
Project Cost Estimate	PNL/DOE	V. Mesec	CCE	6440-11	August 85

	TITLE I	TITLE II	TITLE III	($ TOTAL X 1000)
A. ENGINEERING				
ARCHITECT - ENGINEER	NA	49,500	23,600	73,100
OTHER ENGINEERING - SPECIFY	NA	4,800	0	4,800
SUBTOTAL	NA	54,300	23,600	77,900
ESCALATION (I: NA %, II: NA %, III: NA %)	NA	0	0	0
CONTINGENCY (I: NA %, II: 20 %, III: 20 %)	NA	10,700	4,400	15,100
SUBTOTAL ENGINEERING	NA	65,000	28,000	93,000
OPERATING CONTRACTOR				0
TOTAL A				93,000
B. CONSTRUCTION				
(1) IMPROVEMENTS TO LAND				61,754
(2) BUILDINGS				0
BUILDING NO. R&H Bldg 709,025 SQ. FT.				337,300
BUILDING NO. Suppt. Bldgs SQ. FT.				35,266
(3) OTHER (DETACHED) STRUCTURES CHTRU Bldg.				1,163
(4) SPECIAL FACILITIES AND INSTAL. Storage Area				25,053
(5) UTILITIES				4,453
(6) OPERATING EXPENSE CHARGES NA				0
(7) CONTRACT ADMINISTRATION NA				0
(8) Construction Management				45,240
SUBTOTAL				510,229
ESCALATION NA % @ NA YEARS				0
CONTINGENCY Varies %				105,141
TOTAL B				615,370
C. STANDARD EQUIPMENT				0
TOTAL C				0
D. TRANSFERRED CAPITAL PROP. OR EQUIPMENT NA				0

CURRENT ENR. COST INDEX — BUILDING _____ CONSTRUCTION _____

TOTAL PROJECT ESTIMATE $ 708,370

PROPOSED FUNDS ALLOCATION

FUNDS PURPOSE	OPER. CONTR.	DOE-RL
ENGINEERING		
PROCUREMENT		
CONSTRUCTION		
ESCALATION		
CONTINGENCY		
TCP/TCE		
WASH. STATE TAX		
TOTAL		

TYPE OF ESTIMATE:

APPROVALS	DATE
ESTIMATING	
PROJECT MANAGER	
CLIENT ENGINEER	

REMARKS:

(1) All cost 2nd quarter 1985.
(2) 85% productivity on labor is included in the estimate. Productivity factor furnished by DOE Oak Ridge.
(3) Escalation not included in estimate.
(4) NA = Not applicable

ESTIMATE SHEET ___ OF ___

PARSONS

HARTSVILLE- BASE CASE

ESTIMATE WORKSHEET

M.T.O. BY – PRICED BY DATE AUG. 85 SHEET ____ OF ____

JOB NO.: 6440-11 CLIENT: TVA/TPTL TYPE OF ESTIMATE ROM CHECKED BY

ACCNT	UNIT/AREA DESCRIPTION MRS FACILITY CAPACITY	QUANTITY	UNIT	COST OR M/HRS PER UNIT MATL	M/H	LAB $	MATERIAL EXPENSE	SUBCONTRACT M/HRS	SUBCONTRACT DOLLARS	LABOR M/HRS	LABOR DOLLARS	TOTAL DOLLARS
	CONTINGENCY FACTORS											
	R & H BUILDING (AREAS 1, 2, 3 & 4)	25%		337	300	K						84 330 000
	STORAGE (AREA 6)	15%		25	053	K						3 757 000
	SUPPORT BUILDING (PART AREA 5)			35	266	K						
	CH TRU "			1	163	K						
	UTILITIES "			4	453	K						
	IMPROVEMENTS TO LAND (" & AREA 7)			61	751	K						
		10%		102	636	K						10 264 000
	SUB-TOTAL											98 351 000
	CONTRUCTION MANAGEMENT	15%		45	240	K						6 790 000
	TOTAL											105 141 000
	ROUND OFF ADJUST USE											

CES-2000-0 (4/81)

PARSONS

ESTIMATE WORKSHEET

M.T.D. BY ENGINEERING PRICED BY V. MESA DATE Aug. 83 SHEET ___ OF ___

JOB NO.: 6440-11 CLIENT: DOE/PNL TYPE OF ESTIMATE ROM 35% CHECKED BY DJ

UNIT/AREA MRS

DESCRIPTION

CAPACITY ACCELERATED SCHEDULE

ACCNT		QUANTITY	UNIT	COST OR M/HRS PER UNIT MATL	M/H	LABS	MATERIAL EXPENSE	SUBCONTRACT M/HRS	SUBCONTRACT DOLLARS	LABOR M/HRS	LABOR DOLLARS	TOTAL DOLLARS	
	AREA #1-7			(WORK SHEET - REF ONLY)									
	TOTAL SUMMARY WITHOUT CONTINGENCIES -												
	R&H BUILDING - AREA I											12 234 000	
	II											23 261 000	
	III											161 004 000	
	IV											31 811 000	
(B)(2)	R/H TOTAL R&H	TOTAL W/O CONTINGENCY -										337 300 000	+
(B)(2)	SUPPORT BUILDINGS (PART OF AREAS)			26 735	+	PRODUCTIVITY (943) + OVER (7388)						35 266 000	+
(B)(3)	CUTRG do			193	+	(26)				264		1 116 000	+
(B)(4)	STORAGE AREA (PART OF AREAS)											25 053 000	+
(B)(5)	UTILITIES			3308	+	(213)				(959)		4 453 000	+
	AREA 7 (SITE)											48 446 000	
												13 308 000	
(B)(1)	TOTAL IMPROVE TO LAND											61 754 000	+
	TOTAL											464 969 000	

CES-2000-0 (4/81)

THE RALPH M. PARSONS COMPANY

OF J. ESRC

DATE 16 '85

SUBJECT Summary Sheet MAT. & LABOR

JOB NO. 6490-11

HARTSVILLE - BASE CASE

DIVISION	TITLE	AREA 01 TOTAL MHL (X 1000)	AREA 02 TOTAL MHL (X 1000)	AREA 03 TOTAL MHL (X 1000)	AREA 04 TOTAL MHL (X 1000)	AREA 05 TOTAL MHL (X 1000)	AREA 06 TOTAL MHL (X 1000)	AREA 07 TOTAL MHL (X 1000)	TOTAL MHL (X 1000)	CONST MONEY $	TOTAL $
2	SITE WORK	676	7	666	49	29168	8432	6211	45212		
3	CONCRETE	12882	11143	28004	5982		2491		53502		
4	MASONRY				34				34		
5	METALS	4955	4650	1195	3036				13836		
6	WOOD / PLASTICS			7	9				16		
7	THERM / MOIST PROTECTION			940	1592				2532		
8	DOORS / WINDOWS	3921		1475	278				5674		
9	FINISHES		215	1920	605				2740		
10	SPECIALTIES			11	189				200		
11	EQUIPMENT	6811	2262	80540	1087	21	6982		98183		
12	FURNISHINGS				214				214		
13	SPECIAL CONSTRUCTION			3574	1075		38		4687		
14	CONVEYING SYSTEMS			1019	708				1727		
15	MECHANICAL	4829	4659	37691	5946				92565		
16	ELECTRICAL	2959	1256	9176	2933	7998	1945	3583	29850		
17	INSTRUMENTATION	1560		11525		834			13319		
	S/TOTAL	93653	17192	110677	23227	36761	19248	10057	320815		
	PRODUCTIVITY ON LABOR	1512	876	4829	1405	2717	357	463	12438		
	SHIFT DIFFERENTIAL	584	321	1770	515	-			3190		
	S/TOTAL	95829	18388	127276	25147	39478	17805	10520	336443		
	CNTRL FACILITY					893			893		
	SUPPORT FACILITIES					26735			26735		
	UTILITIES					3308			3308		
	TOTAL DIRECT COST	95829	18388	127276	25147	70644	19805	10520	367579		
	CONTRACTOR OH & PROFIT	25715	4873	33728	6668	18714	5248	2788	97410		
	S/TOTAL	121544	23261	161004	31811	89328	25053	13308	464989	45240	56229
	CONTINGENCY	30308	5816	40253	7953	8933	3757	1331	98351	6790	105141
	TOTAL	151532	29077	201257	39764	98261	28810	14639	563340	52030	615370

THE RALPH M. PARSONS COMPANY

BY TEJEO DATE AUG. '85

SUBJECT Summary Sheet MATERIAL JOB NO. 6490-11

HARTSVILLE - BASE CASE

DIVISION	TITLE	AREA #1 MATL $ (X1000)	AREA #2 MATL $ (X1000)	AREA #3 MATL $ (X1000)	AREA #4 MATL $ (X1000)	AREA #5 MATL $ (X1000)	AREA #6 MATL $ (X1000)	AREA #7 MATL $ (X1000)	TOTAL MATL $ (X1000)
2	SITE WORK	600	5	585	39	22106	7019	4499	34853
3	CONCRETE	9287	3011	19602	3344		1773		37017
4	MASONRY				13				13
5	METALS	3525	3444	766	2264				9999
6	WOOD / PLASTICS			1	2				3
7	THERMAL / MOIST PROTECTION			707	1161				1868
8	DOORS / WINDOWS	3792		4331	243				8366
9	FINISHES		117	965	293				1375
10	SPECIALTIES			10	161				171
11	EQUIPMENT	60497	2155	19519	972	21	5812		88976
12	FURNISHINGS				239				239
13	SPECIAL CONSTRUCTION			3430	856		24		4310
14	CONVEYING SYSTEMS			837	657				1494
15	MECHANICAL	2982	2373	26706	3197				35258
16	ELECTRICAL	2539	1126	5704	1826	5736	1466	2934	21831
17	INSTRUMENTATION	1407		10150		199			11756
	S/TOTAL	84629	12231	93313	15267	28062	16094	7433	257029
	CHTRU FACILITY					743			743
	SUPPORT FACILITIES					21591			21591
	UTILITIES					2106			2106
	TOTAL DIRECT COST	84629	12231	93313	15267	52502	16094	7433	281469
	CONTRACTORS OH-PROFIT								
	S/TOTAL								
	CONTINGENCY								
	TOTAL								

THE RALPH M. PARSONS COMPANY

BY SEC DATE UG. '85

SUBJECT Summary Sheet LABOR (CONSTRUCTION) JOB NO. 6440-11

DH

HARTSVILLE - BASE CASE

DIVISION	TITLE	AREA #1 LABOR $ (x1000)	AREA #2 LABOR $ (x1000)	AREA #3 LABOR $ (x1000)	AREA #4 LABOR $ (x1000)	AREA #5 LABOR $ (x1000)	AREA #6 LABOR $ (x1000)	AREA #7 LABOR $ (x1000)	TOTAL LABOR $ (x1000)
2	SITE WORK	76	2	81	10	7062	1413	1715	10357
3	CONCRETE	3595	1132	8402	2638		718		16485
4	MASONRY				21				21
5	METALS	1430	1206	429	772				3837
6	WOOD / PLASTICS			6	7				13
7	THERMAL/MOIST PROTECTION			233	431				664
8	DOORS / WINDOWS	129		144	35				308
9	FINISHES		98	955	312				1365
10	SPECIALTIES			1	28				29
11	EQUIPMENT	1374	107	1021	115		530		3147
12	FURNISHINGS				5				5
13	SPECIAL CONSTRUCTION			144	179		14		337
14	CONVEYING SYSTEMS			176	51				227
15	MECHANICAL	1847	2286	10925	2249				17307
16	ELECTRICAL	420	130	3472	1107	1602	479	909	8119
17	INSTRUMENTATION	153		1375		35			1563
	S/TOTAL	9024	4961	27364	7960	8699	3154	2624	103786
	PRODUCTIVITY ON LABOR	1572	875	4829	1405	2717	557	463	12438
	SHIFT DIFFERENTIAL	584	321	1770	515	-			3190
	S/TOTAL	11200	6157	33963	9880	11416	3711	3087	77414
	CNTRU FACILITY					150			150
	SUPPORT FACILITIES					5344			5344
	UTILITIES					1202			1202
	TOTAL DIRECT COST	11200	6157	33963	9880	18112	3711	3087	86110
	CONTRACTORS ON PROFIT								
	S/TOTAL								
	CONTINGENCY								
	TOTAL								

THE RALPH M. PARSONS COMPANY

BY ESEC DATE AUG. '85

SUBJECT Summary Sheet CONSTRUCTION LABOR MAN Hours JOB NO. 6490-11

HARTSVILLE - BASE CASE

DH

DIVISION	TITLE	AREA #1	AREA #2	AREA #3	AREA #4	AREA #5	AREA #6	AREA #7	TOTAL
		Labor MH	Labor MH	Labor MH	Labor MH	Labor MH	Labor MH	Labor MH	Labor MH
2	SITE WORK	4711	106	5031	596	439205	87882	106649	644180
3	CONCRETE	233887	73676	526403	171127		46710		1072503
4	MASONRY				1301				1301
5	METALS	77574	65345	23262	41840				208071
6	WOOD / PLASTICS			346	397				743
7	THERMAL/MOIST PROTECTION			14121	26144				40265
8	DOORS / WINDOWS	7824		8707	2143				18674
9	FINISHES		6008	58490	19125				83623
10	SPECIALTIES			35	1616				1651
11	EQUIPMENT	73300	5125	54484	6119	16	28760		167904
12	FURNISHINGS				328				328
13	SPECIAL CONSTRUCTION			7690	9550		768		18008
14	CONVEYING SYSTEMS			9415	2695				12110
15	MECHANICAL	98543	122806	582957	119990				923896
16	ELECTRICAL	23533	7237	194520	61993	89720	66850	30930	474783
17	INSTRUMENTATION	8300		74812		1925			85037
	S/TOTAL	527672	280113	1580513	465464	530866	176470	137579	5732677
CNTRC FACILITY						9086			9086
SUPPORT FACILITIES						323845			323845
UTILITIES						68133			68133
	TOTAL DIRECT MHRS	527672	280113	1580513	465464	931730	176470	137579	4127741
PRODUCTIVITY		93119	49436	278914	82141	163752	33612	27808	728781
	TOTAL MAN HOURS CONSTRUCTION.	620791	329549	1859427	547605	1071682	224082	185387	4858522

HARTSVILLE BASE CASE

PARSONS

ESTIMATE WORKSHEET

M.T.O. BY | PRICED BY V. MESEC | DATE AUG. 85 | SHEET ____ OF ____

JOB NO. 6440-11 | CLIENT: DOE/PNL. | TYPE OF ESTIMATE ROM. | CHECKED BY RJ

UNIT/AREA | DESCRIPTION MRS FACILITY 28H-BLDG. | CAPACITY

ACCNT		QUANTITY.	UNIT	COST OR M/HRS PER UNIT MATL	M/H	LABS	MATERIAL EXPENSE	SUBCONTRACT M/HRS	SUBCONTRACT DOLLARS	LABOR M/HRS	LABOR DOLLARS	TOTAL DOLLARS
	SUMMARY AREA #1	FROM CLINCH RIVER BASE CASE										121 224 000
	SUMMARY AREA #2	"										23 261 000
	SUMMARY AREA #3	"										161 004 000
	SUMMARY AREA #4	"										31 811 000
	TOTAL AREAS 1, 2, 3 & 4											337 300 000

CES-2000-0 (4/81)

COST ESTIMATE SUMMARY
AREA 1, R&H BUILDING

PARSONS

ESTIMATE WORKSHEET

HARTSVILLE BASE CASE

M.T.O. BY ENGINEERING PRICED BY V. MESEC DATE AUG. 85 SHEET ____ OF ____

JOB NO.: 6440-11 CLIENT: TYPE OF ESTIMATE ROM. CHECKED BY [illegible]

UNIT/AREA MRS FACILITY

DESCRIPTION R&M BLDG.

CAPACITY

ACCNT		QUANTITY	UNIT	COST OR M/HRS PER UNIT MATL	M/H	LAB $	MATERIAL EXPENSE	SUBCONTRACT M/HRS	SUBCONTRACT DOLLARS	LABOR M/HRS	LABOR DOLLARS	TOTAL DOLLARS
	SUMMARY AREA #1											
	SUMMARY BY DIVISIONS						84 629 000			521672	9 024 000	93 653 000
	LABOR PRODUCTIVITY	85 %				17.10				93119	1 592 000	1 592 000
	S/TOTAL						84 629 000			620791	10 616 000	95 245 000
	SHIFT DIFFERENTIAL ($10,616,000/2 × 11%) -										980 000	684 000
	S/TOTAL						84 629 000			620791	11 200 000	95 829 000
	CONTRACTORS O&P - PROFIT	26.5 %										25 395 000
	TOTAL AREA #1 w/out CONTINGENCY											121 224 000

CES-2000-0 (4/81)

HARTSVILLE BASE CASE

PARSONS

ESTIMATE WORKSHEET

M.T.O. BY ENGINEERING PRICED BY V. NIESEC DATE AUG. 85 SHEET ____ OF ____

JOB NO.: 6440-11 CLIENT DOE/PNL TYPE OF ESTIMATE ROM. CHECKED BY bm

UNIT/AREA MRS FACILITY

DESCRIPTION F & H BUILDING

CAPACITY

ACCNT	Summary AREA (S) #1	QUANTITY	UNIT	COST OR M/HRS PER UNIT MATL	M/H	LAB $	MATERIAL EXPENSE	SUBCONTRACT M/HRS	SUBCONTRACT DOLLARS	LABOR M/HRS	LABOR DOLLARS	TOTAL DOLLARS
DIV 2	SITE WORK					16.84	600 000			4711	76 000	676 000
3	CONCRETE					15.11	9 287 000			233887	3 595 000	12 882 000
4	MASONARY					16.30	0			0	0	0
5	METALS					18.04	3 525 000			77574	1 430 000	4 955 000
6	WOOD & PLASTICS					16.30	0			0	0	0
7	THERMAL MOIST. PROTECTION					16.30	0			0	0	0
8	DOORS & WINDOWS					16.30	3 792 000			7824	129 000	3 921 000
9	FINISHES					16.30	0			0	0	0
10	SPECIALTIES					17.21	0			0	0	0
11	EQUIPMENT					18.74	60 447 000			73300	1 374 000	61 871 000
12	FURNISHINGS					16.30	0			0	0	0
13	SPECIAL CONSTRUCTION					18.74	0			0	0	0
14	CONVEYING SYSTEMS					18.74	0			0	0	0
15	MECHANICAL SYSTEMS					18.74	2 982 000			98543	1 847 000	4 829 000
16	ELECTRICAL					17.55	2 539 000			23533	420 000	2 959 000
17	INSTRUMENTATION					18.32	1 407 000			8300	153 000	1 560 000
	TOTAL AREA #1						84 629 000			527672	9 024 000	93 653 000

CES-2000-0 (4/81)

COST ESTIMATE SUMMARY
AREA 2, R&H BUILDING

X

HARTSVILLE BASE CASE

PARSONS

ESTIMATE WORKSHEET

M.T.O. BY ENGINEERING PRICED BY VM DATE AUG. 85 SHEET ____ OF ____

JOB NO.: 6440-11 CLIENT: DOE/PNL. TYPE OF ESTIMATE ROM CHECKED BY [illegible]

UNIT/AREA MRS FACILITY

DESCRIPTION R&H BLDG

CAPACITY

ACCNT		QUANTITY	UNIT	COST OR M/HRS PER UNIT MATL	M/H	LAB $	MATERIAL EXPENSE	SUBCONTRACT M/HRS	SUBCONTRACT DOLLARS	LABOR M/HRS	LABOR DOLLARS	TOTAL DOLLARS
	SUMMARY AREA #2											
	SUMMARY BY DIVISIONS					17.71	12 231 000			280113	4 961 000	17 192 000
	LABOR PRODUCTIVITY	85 %								49235	875 000	875 000
	S/TOTAL						12 231 000			329548	5 836 000	18 067 000
	SHIFT DIFFERENTIAL ($5,836000/2 x 11%) =										321 000	321 000
	S/TOTAL						12 231 000			329548	6 157 000	18 388 000
	CONTRACTORS OHD-PROFIT	26.5 %										4 873 000
	TOTAL AREA #2 W/out CONTINGENCY											23 261 000

CES-2000-0 (4/81)

2-1/0

PARSONS

HARTSVILLE BASE CASE

ESTIMATE WORKSHEET

M.T.O. BY ENGINEERING PRICED BY V. NIESEC DATE AUG. 85 SHEET ____ OF ____

JOB NO.: 6440-11 CLIENT DOE/PNL TYPE OF ESTIMATE ROM. CHECKED BY KCM

UNIT/AREA MRS FACILITY

DESCRIPTION R&H BLDG

CAPACITY

ACCNT	Summary Area (s) #2	QUANTITY	UNIT	COST OR M/HRS PER UNIT MATL	M/H	LAB $	MATERIAL EXPENSE	SUBCONTRACT M/HRS	SUBCONTRACT DOLLARS	LABOR M/HRS	LABOR DOLLARS	TOTAL DOLLARS
DIV 2	SITE WORK					16.08	5000			106.	2000	7000
3	CONCRETE	15880	CY			15.31	3011000			73636	1132000	4143000
4	MASONARY					16.30	0			0	0	0
5	METALS	1290	TN			18.93	344000			63395	1206000	1660000
6	WOOD & PLASTICS					16.30	0			0	0	0
7	THERMAL MOIST. PROTECTION					16.30	0			0	0	0
8	DOORS & WINDOWS					16.30	0			0	0	0
9	FINISHES					16.30	117000			6008	98000	215000
10	SPECIALTIES					17.61	0			0	0	0
11	EQUIPMENT					18.74	2166000			5725	107000	2262000
12	FURNISHINGS					16.30	0			0	0	0
13	SPECIAL CONSTRUCTION					18.74	0			0	0	0
14	CONVEYING SYSTEMS					18.74	0			0	0	0
15	MECHANICAL SYSTEMS					18.74	2373000			124006	2286000	4659000
16	ELECTRICAL					17.05	1126000			7237	136000	1256000
17	INSTRUMENTATION					18.92	0			0	0	0
	TOTAL AREA 2						12231000			280113	4961000	17192000

CES-2000-0 (4/81)

COST ESTIMATE SUMMARY
AREA 3, R&H BUILDING

HARTSVILLE BASE CASE

PARSONS

ESTIMATE WORKSHEET

M.T.O. BY ENGINEERING PRICED BY V. MESEC DATE Aug 85 SHEET ____ OF ____

JOB NO.: 6440-11 CLIENT: DOE/PNL TYPE OF ESTIMATE ROM. CHECKED BY LUF LRS

UNIT/AREA MRS FACILITY

DESCRIPTION R&H. BLDG.

CAPACITY

ACCNT		QUANTITY	UNIT	COST OR M/HRS PER UNIT MATL	M/H	LAB $	MATERIAL EXPENSE	SUBCONTRACT M/HRS	SUBCONTRACT DOLLARS	LABOR M/HRS	LABOR DOLLARS	TOTAL DOLLARS
	SUMMARY AREA # 3											
	SUMMARY BY DIVISIONS					17.31	93 313 000			1580513	27 364 000	120 677 000
	LABOR PRODUCTIVITY	85	%							278914	4 829 000	4 829 000
	S/TOTAL					17.31	93 313 000			1859427	32 193 000	125 506 000
	SHIFT DIFFERENTIAL ($32193000/2 x 11%)										1 770 000	1 770 000
	S/TOTAL										33 963 000	127 276 000
	CONTRACTORS OHD PROFIT	26.5	%									33 728 000
	TOTAL COST AREA # 3 W/OUT CONTINGENCY											161 004 000

CES-2000-0 (4/81)

HARTSVILLE BASE CASE

PARSONS

ESTIMATE WORKSHEET

M.T.O. BY ENGINEERING PRICED BY V MESEC DATE AUG. 85 SHEET ____ OF ____

JOB NO.: 6440-11 CLIENT: DOE/PNL TYPE OF ESTIMATE ROM. CHECKED BY JS

UNIT/AREA MRS FACILITY

DESCRIPTION R&H BLDG

CAPACITY

ACCNT	SUMMARY AREA(S) #3	QUANTITY	UNIT	COST OR M/HRS PER UNIT MATL	M/H	LAB $	MATERIAL EXPENSE	SUBCONTRACT M/HRS	SUBCONTRACT DOLLARS	LABOR M/HRS	LABOR DOLLARS	TOTAL DOLLARS
DIV 2	SITE WORK					16.08	585 000			5031	81 000	666 000
3	CONCRETE	96941	CY		-	15.39	19 602 000			546643	8 402 000	28 004 000
4	MASONARY				-	16.50	0			0	0	0
5	METALS	165	TN		-	18.44	766 000			23262	429 000	1 195 000
6	WOOD & PLASTICS					16.50	1 000			346	6 000	7 000
7	THERMAL MOIST. PROTECTION					16.50	707 000			14121	233 000	940 000
8	DOORS & WINDOWS					16.50	4 331 000			8707	144 000	4 475 000
9	FINISHES				-	16.32	965 000			58490	955 000	1 920 000
10	SPECIALTIES				-	17.01	10 000			35	1 000	11 000
11	EQUIPMENT			-	-	18.74	19 519 000			54484	1 021 000	20 540 000
12	FURNISHINGS				-	16.50	0			0	0	0
13	SPECIAL CONSTRUCTION					18.74	3 430 000			7690	144 000	3 574 000
14	CONVEYING SYSTEMS				-	18.74	837 000			9415	176 000	1 013 000
15	MECHANICAL SYSTEMS					18.74	26 706 000			582957	10 925 000	37 631 000
16	ELECTRICAL					17.85	5 704 000			194520	3 472 000	9 176 000
17	INSTRUMENTATION	1	LOT			18.39	10 150 000			74812	1 375 000	11 525 000
	TOTAL						93 313 000			1580513	27 364 000	120 677 000

CES-2000-0 (4/81)

COST ESTIMATE SUMMARY
AREA 4, R&H BUILDING

HARTSVILLE BASE CASE

PARSONS

ESTIMATE WORKSHEET

M.T.O. BY ENGINEERING PRICED BY V. MESEC DATE AUG. 85 SHEET ____ OF ____

JOB NO.: 6440-11 CLIENT: DOE/PNL TYPE OF ESTIMATE ROM CHECKED BY RJ/16

UNIT/AREA MRS FACILITY

DESCRIPTION R&H BLDG.

CAPACITY

ACCNT		QUANTITY	UNIT	COST OR M/HRS PER UNIT MATL	M/H	LAB $	MATERIAL EXPENSE	SUBCONTRACT M/HRS	SUBCONTRACT DOLLARS	LABOR M/HRS	LABOR DOLLARS	TOTAL DOLLARS
	SUMMARY AREA # 4											
	SUMMARY BY DIVISIONS						15 267 000			465464	7 960 000	23 227 000
	LABOR PRODUCTIVITY (BASE HOURS)			85%		17.10				82141	1 405 000	1 405 000
	S/TOTAL						15 267 000			547605	9 365 000	24 632 000
	SHIFT DIFFERENTIAL ($9365000/2 X 11%) =										515 000	515 000
	S/TOTAL						15 267 000			547605	9 880 000	25 147 000
	CONTRACTORS OHD/PROFIT	26.5%										6 664 000
	TOTAL COST AREA # 4 W/OUT CONTINGENCY											31 811 000

CES-2000-0 (4/81)

HARTSVILLE BASE CASE

PARSONS

ESTIMATE WORKSHEET

M.T.O. BY ENGINEERING PRICED BY V. NIESEL DATE AUG. 85 SHEET ____ OF ____

JOB NO.: 6440-11 CLIENT: DOE/PNL TYPE OF ESTIMATE ROM. CHECKED BY [illegible]

UNIT/AREA MRS FACILITY

DESCRIPTION R&H BLDG

CAPACITY

ACCNT		QUANTITY	UNIT	COST OR M/HRS PER UNIT MATL	M/H	LAB $	MATERIAL EXPENSE	SUBCONTRACT M/HRS	SUBCONTRACT DOLLARS	LABOR M/HRS	LABOR DOLLARS	TOTAL DOLLARS
	SUMMARY AREA (S) # 4											
DIV 2	SITE WORK					16.05	39000			596	10000	49000
3	CONCRETE	2286	CY			15.37	3844000			171631	2438000	5982000
4	MASONARY					16.50	13000			1301	21000	34000
5	METALS	1553	TN			18.00	2764000			41540	772000	3636000
6	WOOD & PLASTICS					16.50	2000			397	7000	9000
7	THERMAL MOIST. PROTECTION					16.50	1161000			26144	431000	1592000
8	DOORS & WINDOWS					16.02	243000			2193	35000	278000
9	FINISHES					16.37	293000			19125	312000	605000
10	SPECIALTIES					17.21	161000			1616	28000	189000
11	EQUIPMENT					18.14	972000			6119	115000	1087000
12	FURNISHINGS					16.59	239000			328	5000	244000
13	SPECIAL CONSTRUCTION					18.72	896000			9550	179000	1035000
14	CONVEYING SYSTEMS					18.72	657000			2695	51000	708000
15	MECHANICAL SYSTEMS					18.14	3197000			119990	2249000	5446000
16	ELECTRICAL					17.85	1826000			61993	1107000	2933000
17	INSTRUMENTATION					18.55	INCLUDED IN AREA 3			0	0	0
	TOTAL AREA # 4						16261000			465460	7960000	23127000

CES-2000-0 (4/81)

COST ESTIMATE SUMMARY
AREA 5, ONSITE IMPROVEMENTS

Hartsville
Base Case

PARSONS

ESTIMATE WORKSHEET

M.T.O. BY Engineering | PRICED BY V. Meser | DATE Aug. 85 | SHEET ____ OF ____
JOB NO.: 6440-11 | CLIENT: DOE/PNL | TYPE OF ESTIMATE Rom 35% | CHECKED BY DH
UNIT/AREA
DESCRIPTION MRS. Facility
CAPACITY

ACCNT / DIV.		QUANTITY	UNIT	COST OR M/HRS PER UNIT: MATL	M/H	LAB $	MATERIAL EXPENSE	SUBCONTRACT: M/HRS	DOLLARS	LABOR: M/HRS	DOLLARS	TOTAL DOLLARS
	Area # 5											
	Summary											
	Area #5											48446000
	Cntrls											1163000
	Support Facilities											35246000
	Utilities											4453000
	Total Area 5											89328000

CES-2000-0 (4/81)

PARSONS

ESTIMATE WORKSHEET

HARTSVILLE BASE CASE

M.T.O. BY | PRICED BY | DATE AUG 85 | SHEET ___ OF ___

JOB NO.: 6440-11 | CLIENT: DOE/PNL | TYPE OF ESTIMATE ROM | CHECKED BY Rem/PW

UNIT/AREA MRS FACILITY

DESCRIPTION

CAPACITY

ACCNT		QUANTITY	UNIT	COST OR M/HRS PER UNIT MATL	M/H	LAB $	MATERIAL EXPENSE	SUBCONTRACT M/HRS	SUBCONTRACT DOLLARS	LABOR M/HRS	LABOR DOLLARS	TOTAL DOLLARS
	SUMMARY AREA #5											
	SUMMARY BY DIVISIONS					16.39	28 062 000			590 866	8 699 000	36 761 000
	LABOR PRODUCTIVITY	85%								93 682	1 536 000	1 536 000
	S/TOTAL						28 062 000			624 548	10 235 000	38 297 000
	CONTRACTORS OH - PROFIT	26.6%										10 149 000
	TOTAL COST AREA 5 W/OUT CONTINGENCY											48 446 000

CES-2000-0 (4/81)

B-2

PARSONS

ESTIMATE WORKSHEET

HARTSVILLE - BASE CASE

M.T.O. BY V. MESEC PRICED BY V. MESEC DATE Aug. 85 SHEET ____ OF ____

JOB NO.: 6440-11 CLIENT: DOE/PNC TYPE OF ESTIMATE ROM CHECKED BY RE/Ron

UNIT/AREA MRS FACILITY

DESCRIPTION

CAPACITY AREA #5

ACCNT		QUANTITY	UNIT	COST OR M/HRS PER UNIT MATL	M/H	LAB $	MATERIAL EXPENSE	SUBCONTRACT M/HRS	SUBCONTRACT DOLLARS	LABOR M/HRS	LABOR DOLLARS	TOTAL DOLLARS
	SUMMARY CHTRU FACILITY											
	TOTAL DIRECT COST						743000			9086	150000	823000
	LABOR PRODUCTIVITY	85	%							1603	26000	26000
	S/TOTAL						743000			10689	176000	919000
	CONTRACTORS OH-PROFIT	26.5	%									244000
	TOTAL CHTRU FAC. W/OUT CONTINGENCY											1163000

CES-2000-0 (4/81)

CLINCH RIVER BASE CASE

PARSONS

ESTIMATE WORKSHEET

M.T.O. BY ENGINEERING PRICED BY ✓ Messec/[illegible] △ DATE Aug 85 SHEET ____ OF ____

JOB NO.: 6440-11 CLIENT: DOE/PNL TYPE OF ESTIMATE ROM CHECKED BY [illegible]

UNIT/AREA MRS FACILITY

DESCRIPTION

CAPACITY AREA #5

ACCNT		QUANTITY	UNIT	COST OR M/HRS PER UNIT MATL	M/H	LAB $	MATERIAL EXPENSE	SUBCONTRACT M/HRS	SUBCONTRACT DOLLARS	LABOR M/HRS	LABOR DOLLARS	TOTAL DOLLARS
	SUMMARY SUPPORT FACILITIES											
	TOTAL DIRECT COST					16.50	21591000			323845	5344000	26935000
	LABOR PRODUCTIVITY	85	%							57149	943000	943000
	S/TOTAL						21591000			380994	6287000	27878000
	CONTRACTORS OH&P	26.5	%									7388000
	TOTAL COST SUPPORT FACILITIES WITHOUT CONTINGENCY											35266000

CES-2000-0 (4/81)

PARSONS

HARTSVILLE – BASE CASE

ESTIMATE WORKSHEET

M.T.O. BY V. MESEC | PRICED BY V. MESEC | DATE Aug 85 | SHEET ____ OF ____

JOB NO.: 6440-11 | CLIENT: DOE/PNL. | TYPE OF ESTIMATE ROM | CHECKED BY [illegible]

UNIT/AREA MRS FACILITY

DESCRIPTION

CAPACITY AREA #5

ACCNT		QUANTITY	UNIT	COST OR M/HRS PER UNIT MATL	M/H	LAB $	MATERIAL EXPENSE	SUBCONTRACT M/HRS	SUBCONTRACT DOLLARS	LABOR M/HRS	LABOR DOLLARS	TOTAL DOLLARS
	SUMMARY UTILITIES											
	TOTAL DIRECT COST					18.75	2106000			64433	1202000	3308000
	LABOR PRODUCTIVITY	85 %								11318	212000	212000
	S/TOTAL						2106000			75451	1414000	3520000
	CONTRACTORS OH'D PROFIT	26.5%										933000
	TOTAL COST UTILITIES W/OUT CONTINGENCY											4453000

CES-2000-0 (4/81)

PARSONS

ESTIMATE WORKSHEET

HARTSVILLE BASE CASE

M.T.O. BY ENGINEERING PRICED BY V. MESEC DATE AUG. 85 SHEET ___ OF ___

JOB NO.: 6440-11 CLIENT: DOE/PNL TYPE OF ESTIMATE ROM. CHECKED BY RCW

UNIT/AREA MRS FACILITY

DESCRIPTION

CAPACITY

ACCNT	Summary AREA (S) # 5	QUANTITY	UNIT	COST OR M/HRS PER UNIT MATL	M/H	LAB $	MATERIAL EXPENSE	SUBCONTRACT M/HRS	SUBCONTRACT DOLLARS	LABOR M/HRS	LABOR DOLLARS	TOTAL DOLLARS
DIV 2	SITE WORK					16.08	22 106 000			439805	7 062 800	29 168 800
3	CONCRETE					15.31	0			0	0	0
4	MASONARY					16.50	0			0	0	0
5	METALS					18.74	0			0	0	0
6	WOOD & PLASTICS					4.50	0			0	0	0
7	THERMAL MOIST. PROTECTION					16.50	0			0	0	0
8	DOORS & WINDOWS					16.50	0			0	0	0
9	FINISHES					16.31	0			0	0	0
10	SPECIALTIES					17.41	0			0	0	0
11	EQUIPMENT					18.74	21 000			16	300	21 000
12	FURNISHINGS					16.50	0			0	0	0
13	SPECIAL CONSTRUCTION					18.74	0			0	0	0
14	CONVEYING SYSTEMS					18.74	0			0	0	0
15	MECHANICAL SYSTEMS					18.74	0			0	0	0
16	ELECTRICAL					17.85	5 736 000			89720	1 602 800	7 338 800
17	INSTRUMENTATION					18.38	199 000			1925	35 000	234 000
	TOTAL						28 082 000			530 846	8 699 900	36 761 800
										488	8 699 000	36 761 000

CES-2000-0 (4/81)

PARSONS

HARTSVILLE - BASE CASE

ESTIMATE WORKSHEET

M.T.O. BY ENGR. PRICED BY RUF DATE AUG. '85 SHEET ___ OF ___

JOB NO.: 6442 - 11 CLIENT: DOE / PNL TYPE OF ESTIMATE ROM CHECKED BY BH

UNIT/AREA MRS FACILITY DESCRIPTION CAPACITY ACCNT	QUANTITY	UNIT	COST OR M/HRS PER UNIT MATL	M/H	LAB $	MATERIAL EXPENSE	SUBCONTRACT M/HRS	DOLLARS	LABOR M/HRS	DOLLARS	TOTAL DOLLARS
SITE WORK AREA #5											
SITE WORK - AREA #5 (CLINCH RIVER - BASE CASE)						20 950 000			318568		
DELETE: - EARTHWORK (CLINCH RIVER - BASE CASE)						(14 538 600)			(207433)		
ADD: - EARTHWORK (HARTSVILLE - BASE CASE)						16 294 400			328070		
TOTAL SITE WORK (HARTSVILLE - BASE CASE)						22 105 800			439205		
				USE		22 106 000					

CES-2000-0 (4/81)

PARSONS

HARTSVILLE - BASE CASE

ESTIMATE WORKSHEET

M.T.O. BY ENGR. PRICED BY RUF DATE AUG. '85 SHEET ____ OF ____

JOB NO.: 6440-11 CLIENT: DOE / PNL TYPE OF ESTIMATE ROM CHECKED BY TM

UNIT/AREA MRS FACILITY

DESCRIPTION SITE LOCATION

CAPACITY

ACCNT		QUANTITY	UNIT	COST OR M/HRS PER UNIT			MATERIAL EXPENSE	SUBCONTRACT		LABOR		TOTAL DOLLARS
				MATL	M/H	LAB $		M/HRS	DOLLARS	M/HRS	DOLLARS	
DIV. 2	SITEWORK AREA #5											
2200	EARTHWORK											
10	FINE GRADING - EARTH (MACH)	-	AC	1878	48-							
11	EXCAVATION INCL. HAULING - EARTH	1361800	CY	1.09	.01		1 487 630			13648		
12	EMBANKMENT - COMPACTED FILL	1433040	CY	1.10	.02		1 576 340			28661		
13	ROCK EXCAV. & HAUL - BLASTING	2811200	CY	4.50	.10		12 650 400			281120		
14	ROCK EXCAV. & HAUL - RIPPABLE	-	CY	1.70	.02							
15	ROCK EMBANKMENT - COMP - HAUL	580060	CY	1.00	.008		580 060			4641		
16	CRUSHING & SCREENING & HAULING	-	CY	2.00	.016							
17	DIKE (EARTH FILL) POND	-	CY	1.10	.02							
18	EARTH FILL AT EXISTING TUNNEL & DIKES	-	CY	1.10	.02							
19	EXCAVATION AT PONDS	-	CY	1.09	.01							
	IMPORT	—	—									
	SUB TOTAL				1182		16 294 430 16 294 600			328010		

CFS 2000 0 (4/81)

PARSONS

ESTIMATE WORKSHEET

HARTSVILLE BASE CASE

M.T.O. BY | PRICED BY | DATE AUG 85 | SHEET ____ OF ____

JOB NO.: 6490-11 | CLIENT: DOE/PNL | TYPE OF ESTIMATE ROM | CHECKED BY JWJ

UNIT/AREA MRS FACILITY

DESCRIPTION

CAPACITY

ACCNT		QUANTITY	UNIT	COST OR M/HRS PER UNIT			MATERIAL EXPENSE	SUBCONTRACT		LABOR		TOTAL DOLLARS
				MATL	M/H	LAB $		M/HRS	DOLLARS	M/HRS	DOLLARS	
DIV. 11	SUMMARY AREA 5											
11550	EQUIPMENT (SAME AS CLINCH RIVER BASE CASE)						21,000			16		

CES-2000-0 (4/81)

PARSONS

HARTSVILLE BASE

ESTIMATE WORKSHEET

M.T.O. BY J.J. PRICED BY J.J. DATE AUG-15 SHEET 6 OF ____

JOB NO.: 6440-11 CLIENT: PNL-DOE TYPE OF ESTIMATE ROM CHECKED BY

ACCNT	UNIT/AREA / DESCRIPTION / CAPACITY	QUANTITY	UNIT	COST OR M/HRS PER UNIT: MATL	M/H	LAB $	MATERIAL EXPENSE	SUBCONTRACT: M/HRS	SUBCONTRACT: DOLLARS	LABOR: M/HRS	LABOR: DOLLARS	TOTAL DOLLARS
	ELECTRIC. AREA -	5										
	SUMMARY											
16110	161 KV. CONC. DUCT BANK						430,300			5280		
16110	69 KV. " " "						144,800			1960		
16500	STREET & AREA LIGHTING						573,220			7,666		
16500	SECURITY LIGHTING						161,000			2228		
16550	GROUNDING						45,990			1060		
16604	ALARM ZONE						515,340			9624		
							1,870,650			27,818		
16400	MAIN SUBSTATION (CLINCH RIVER)						881,480			1220		
16110	5 KV FEEDER "	"					2,063,760			44697		
16110	OUTDOOR CONTROL WIRING "	"					132,580			2749		
16110	HTR FEEDER "	"					84,960			1264		
16700	PHONE TRUNCK "	"					89,000			2720		
16400	SUPPORT BLDG XFMR CIR "	"					194,590			933		
16700	RADIO "	"					193,820			820		
16700	RADIO "	"					74,880			437		
16900	OUTSIDE INSTRUM. WIRING "	"					150,000			7062		
							3,865,070			61902		
							5,735,720			89,720		
						USE	5 736000					

CES-2000-0 (4/81)

HARTSVILLE BASE

PARSONS

ESTIMATE WORKSHEET

M.T.O. BY J. J PRICED BY J. J. DATE AUG-15 SHEET 7 OF

JOB NO.: 6440-11 CLIENT: PNL-DOE TYPE OF ESTIMATE ROM CHECKED BY Rem

UNIT/AREA 161KV UNDERGROUND DUCTBANK

DESCRIPTION BASE HARTSVILLE

CAPACITY MRS FACILITY

ACCNT		QUANTITY	UNIT	COST OR M/HRS PER UNIT MATL	M/H	LAB $	MATERIAL EXPENSE	SUBCONTRACT M/HRS	SUBCONTRACT DOLLARS	LABOR M/HRS	LABOR DOLLARS	TOTAL DOLLARS
	ELECTRICAL AREA-5											
16110	161 KV CONC DUCT BANK											
	EXCAVAT. 4000 x 2.5 x 4.5 / 27	1667	C.Y.	6	.15		10,000			250		
	CONC. 4000 x 2.5 x 1 / 27	370	CY	55	.5		20350			185		
	BACKFILL 1667-370 =	1297	CY	3.5	.07		4540			91		
	6"ϕ PVC. COND. 4000 x 3	12,000	LF	4.1	.20		49200			2400		
	FITTING & SUPPORT 25%	—	—	—	—		12300			600		
	161 KV. FEEDERS											
	500 MCM 4000 x 3 x 1.05 =	13,200	LF	20.86	.1		275,350			1320		
	4/0 GRND 4000 x 1.05 =	4,200	LF	3.9	.063		16,380			265		
	CABLE TERM. & SPLICING	8	E	22.5	4		180			32		
	POTHEAD	6	E	7000	20		42000			120		
	TESTING	—	—	—	—	—	—			17		
							430,300			5280		

CES-2000-0 (4/81)

HARTSVILLE BASE

PARSONS
ESTIMATE WORKSHEET

M.T.O. BY J.J. PRICED BY J.J. DATE AUG-15 SHEET 8 OF 3
JOB NO.: 6440-11 CLIENT: PNL-DOE TYPE OF ESTIMATE ROM CHECKED BY [illegible]
UNIT/AREA 69KV UNDERGRND DUCTBANK
DESCRIPTION BASE HARTSVILLE
CAPACITY MRS FACILITY

ACCNT		QUANTITY	UNIT	COST OR M/HRS PER UNIT MATL	M/H	LAB $	MATERIAL EXPENSE	SUBCONTRACT M/HRS	SUBCONTRACT DOLLARS	LABOR M/HRS	LABOR DOLLARS	TOTAL DOLLARS
	ELECTRICAL AREA-5											
16110	69KV CONC. DUCT											
	EXCAVATION 1500 x 2.5 x 4.5 / 27	625	C.Y	6	.15		3750			94		
	CONC. 1500 x 2.5 x 1 / 27	139	C.Y	55	.5		7650			70		
	BACKFILL 625 - 139 =	486	C.Y	3.5	.07		1700			34		
	6" ϕ PVC. PIPE 1500 x 3 =	4500	LF	4.1	.2		18450			900		
	FITTING & SUPPORT 25%	-	-	-	-		4610			225		
	69KV FEEDER											
	500MCM 1500 x 3 x 1.05	4725	LF	20.86	.1		98560			473		
	4/0 GRND 1500 x 1.05	1575	LF	3.9	.066	[illegible]	6140			104		
	CABLE TERM. & SPLICING	8	E	20	4		160			32		
	POTHEADS	3	E	1260	5		3780			15		
	TESTING	-	-	-	-	-	-			13		
							144,800			1960		

CES-2000-0 (4/81)

HARTSVILL BASE

PARSONS

ESTIMATE WORKSHEET

M.T.O. BY J.J. PRICED BY J.J. DATE AUG-15 SHEET 9 OF ____

JOB NO.: 6440-11 CLIENT: PNL-DOE TYPE OF ESTIMATE ROM CHECKED BY Rem O.K.

UNIT/AREA BASE HARTSVILLE

DESCRIPTION STEET & AREA LIGHTING

CAPACITY

ACCNT		QUANTITY	UNIT	COST OR M/HRS PER UNIT MATL	M/H	LAB $	MATERIAL EXPENSE	SUBCONTRACT M/HRS	SUBCONTRACT DOLLARS	LABOR M/HRS	LABOR DOLLARS	TOTAL DOLLARS
	ELECTRICAL AREA-5											
16500	BASE HARTSVILLE LIGHTING STREET & OUTSIDE AREA											
	13 X 200 = 2600											
	14.5 X 200 = 2900											
	AREA . 2600 X 2900 = 7,540,000	0 SF										
	USING CLINCH RIVER ESTIM.											
	# 798250 X 7,540,000 / 10,500,000 =						573,220			7666		
	10676 X 7,540,000 / 10,500,000 =											

CES-2000-0 (4/81)

573

HARTSVILLE BASE

PARSONS

ESTIMATE WORKSHEET

M.T.O. BY JJ. PRICED BY JJ DATE AUG-15 SHEET 10 OF ___

JOB NO.: 6440-11 CLIENT: PNL-DOE TYPE OF ESTIMATE ROM CHECKED BY Ron [illegible]

UNIT/AREA SECURITY LIGHTING

DESCRIPTION

CAPACITY

ACCNT		QUANTITY	UNIT	COST OR M/HRS PER UNIT MATL	M/H	LAB $	MATERIAL EXPENSE	SUBCONTRACT M/HRS	SUBCONTRACT DOLLARS	LABOR M/HRS	LABOR DOLLARS	TOTAL DOLLARS
	ELECTICAL. AREA - 5											
16,500	SECURITY AREA LIGHTING											
	$\frac{226,340 \times 7,540,000}{10,600,000} =$						161,000			2228		
	$\frac{3132 \times 7,540,000}{10,600,000} =$											
	SEE BACK-UP AREA - 6											

CES-2000-0 (4/81)

HARTSVILLE BASE

PARSONS

ESTIMATE WORKSHEET

M.T.O. BY J.J. PRICED BY J.J. DATE AUG-15 SHEET 11 OF ____

JOB NO.: 6440-11 CLIENT: PNL-DOE TYPE OF ESTIMATE ROM CHECKED BY Rem P/A

UNIT/AREA BASE HARTSVILLE

DESCRIPTION GROUND'G

CAPACITY

ACCNT		QUANTITY	UNIT	COST OR M/HRS PER UNIT MATL	M/H	LAB $	MATERIAL EXPENSE	SUBCONTRACT M/HRS	SUBCONTRACT DOLLARS	LABOR M/HRS	LABOR DOLLARS	TOTAL DOLLARS
	ELECTRICAL AREA-5											
16550	BASE HARTSVILLE GRND'G											
	14.5 x 200 = 2900											
	13 x 200 = 2600											
	2600 x 2900 =	7,540,000		.006099			45,990			1060		
		7,540,000		.0001405								

CES-2000-0 (4/81)

HARTSVILLE BASE

PARSONS

ESTIMATE WORKSHEET

M.T.O. BY J.J. PRICED BY J.J. DATE AUG-15 SHEET 12 OF ____

JOB NO.: 6440-11 CLIENT: PNL-DOE TYPE OF ESTIMATE ROM CHECKED BY [illegible]

UNIT/AREA BASE HARTSVILLE

DESCRIPTION ALARM ZONE

CAPACITY

ACCNT		QUANTITY	UNIT	COST OR M/HRS PER UNIT MATL	M/H	LAB $	MATERIAL EXPENSE	SUBCONTRACT M/HRS	SUBCONTRACT DOLLARS	LABOR M/HRS	LABOR DOLLARS	TOTAL DOLLARS
	ELECTRICAL AREA	- 5										
16604	BASE HARTSVILLE ALARM ZONE											
	12+12+8.25 = X200 =	6450	LF									
	USING PREVIOUS ESTIMAT. CALCULATION											
	11,000 LF FOR #533,400											
	THE PRICE OF THE BASE											
	$\frac{533,400 \times 6450}{11,000} = 312,770$											
	USING ONE TO THREE RATIO											
	312,720 ÷ 4 = 78,180											
	÷ 17.85 =											
	- 171,780 =						515340			9624		

CES-2000-0 (4/81)

PARSONS

HARTSVILLE BASE CASE

ESTIMATE WORKSHEET

M.T.O. BY CBW/BH PRICED BY DATE AUG 85 SHEET 1 OF 4

JOB NO.: 6440-41 CLIENT: PNL/DOE TYPE OF ESTIMATE ROM CHECKED BY

UNIT/AREA RFH BUILDING

DESCRIPTION ONSITE BAL OF PLANT

CAPACITY

ACCNT		QUANTITY	UNIT	COST OR M/HRS PER UNIT			MATERIAL EXPENSE	SUBCONTRACT		LABOR		TOTAL DOLLARS
				MATL	M/H	LAB $		M/HRS	DOLLARS	M/HRS	DOLLARS	
DIV. 17	INSTRUMENTATION AREA 5											
	SUMMARY											
1712	ANALYZERS	1	LOT				126600			500		
1714	MISCELLANEOUS INSTRUMENTS	1	LOT				60000			1000		
1718	INSTRUMENT INSTALLATION MATERIAL	1	LOT				7000			225		
1719	CALIBRATION	1	LOT							200		
	SUBTOTAL						193600			1925		
	INLAND FREIGHT ALLOWANCE @ ~3%	1	LOT				5400					
	TOTAL						199000			1925		

CES 2000-0 (4/81)

AREA 5
CHTRU FACILITY

PARSONS

ESTIMATE WORKSHEET

HARTSVILLE - BASE CASE

M.T.O. BY ESTG. / ENGRG. PRICED BY RUF DATE AUG 85 SHEET ____ OF ____

JOB NO.: 6440 - 11 CLIENT: DOE / PNL TYPE OF ESTIMATE ROM CHECKED BY [illegible]

UNIT/AREA MRS FACILITIES

DESCRIPTION ON SITE BAL OF PLANT

CAPACITY

ACCNT		QUANTITY	UNIT	COST OR M/HRS PER UNIT MATL	M/H	LAB $	MATERIAL EXPENSE	SUBCONTRACT M/HRS	SUBCONTRACT DOLLARS	LABOR M/HRS	LABOR DOLLARS	TOTAL DOLLARS
	SUMMARY AREA 5	AREA (SF)			VOLUME (CF)							
	CHTRU STORAGE FACILITY	2400	SF		58008		713500			9086		
	From 2A ESTIMATE											
						16.50				9086	149900	863000
	2Q 1984 TO 2Q 1985 LABASIN						713000					
											19000	
	= 1.042% x $713500			=			743500					
					USE		743000				150000	893000

CES-2000-0 (4/81)

HARTSVILLE
BASE CASE

PARSONS
ESTIMATE WORKSHEET

M.T.O. BY ENGINEERING PRICED BY V MESSEC/[illegible] DATE AUG 85 SHEET 1 OF 2
JOB NO.: 6440-11 CLIENT: DOE/PNL TYPE OF ESTIMATE ROM CHECKED BY [illegible]
UNIT/AREA MRS FACILITY
DESCRIPTION ON SITE - BAL OF PLANT
CAPACITY AREA 5

ACCNT		QUANTITY	UNIT	COST OR M/HRS PER UNIT MATL	M/H	LAB $	MATERIAL EXPENSE	SUBCONTRACT M/HRS	SUBCONTRACT DOLLARS	LABOR M/HRS	LABOR DOLLARS	TOTAL DOLLARS
	Summary	AREA	SF	VOLUME	CF					LABOR RATE @$16.00/HR		
	Support Facilities											
	Admin Building	19100	SF	286500			1505800			32420	535900	
	Fire Station	9000	SF	150660			1672800			13027	214900	
	Security Building	9800	SF	122500			1299000			25354	418300	
	Main Gate - Badge House	1500	SF	21300			153700			4291	70800	
	Gate House & Inspect Station	1200	SF	27800			208000			8765	144600	
	Roof Canopy	10310	SF									
	Protected Area Gate Station	6470	SF	168673			1384500			23980	395700	
	Vehicle Maintenance Bldg	17710	SF	456564			1015500			20900	344800	
	Site Services Building	75450	SF	2347380			8590000			98306	1622000	
	Warehouse	38750	SF	968750			1102000			24432	403100	
	Heliport	1	EA				20600			355	5800	

CES-2000-0 (4/81)

HARTSVILLE
BASE CASE

PARSONS
ESTIMATE WORKSHEET

M.T.O. BY ENGINEERING PRICED BY V MESSEC/[illegible] DATE AUG 85 SHEET 2 OF 2
JOB NO.: 6440-11 CLIENT: DOE/PNL TYPE OF ESTIMATE ROM CHECKED BY [illegible]
UNIT/AREA MRS FACILITY
DESCRIPTION ON SITE BAL OF PLANT
CAPACITY AREA 5

ACCNT		QUANTITY	UNIT	COST OR M/HRS PER UNIT MATL	M/H	LAB $	MATERIAL EXPENSE	SUBCONTRACT M/HRS	SUBCONTRACT DOLLARS	LABOR M/HRS	LABOR DOLLARS	TOTAL DOLLARS
	Summary	AREA	SF	VOLUME	CF							
	STANDBY GENERATOR BLDG	11250	SF	405.000			2523600			29152	481000	
	WATER TREATMENT FACILITY	1360	SF	20400			175300			2063	34000	
	SEWAGE TREATMENT FACILITY	3840	SF	57600			346100			7397	122000	
	STEAM GENERATOR BLDG	9600	SF	345600			1394400			33403	551100	
	TOTAL DIRECT COST (2Q85)						21591300			323845	5344000	
	USE						21591000			323845	5344000	26935000

CES-2000-0 (4/81)

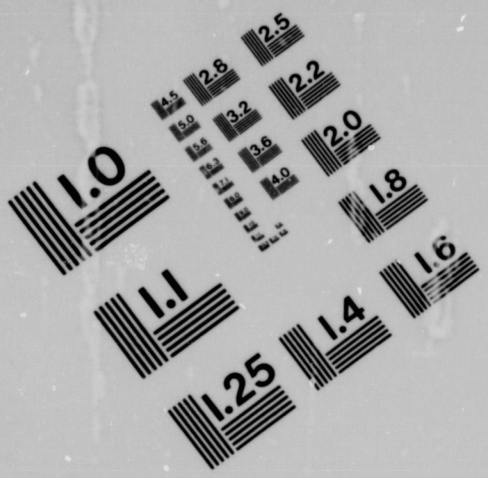
5.20

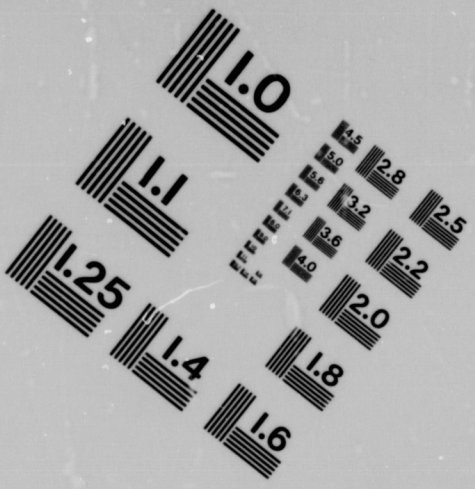
AREA 5
UTILITIES

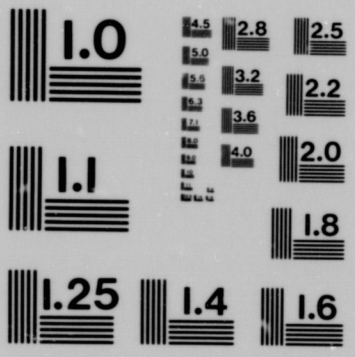
CONTINUED

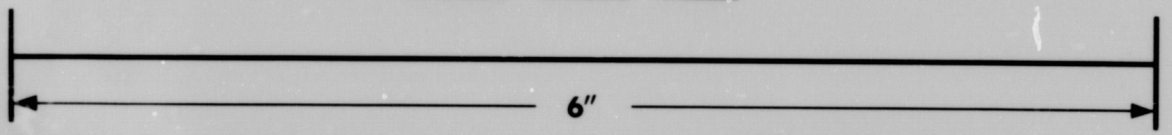
B INTEGRAL MONITORED RETRIEVABLE STORAGE (MRS) FACILITY. CONCEPTUAL DESIGN REPORT - VOLUME V (BOOK X) COST ESTIMATE. FICHE 661

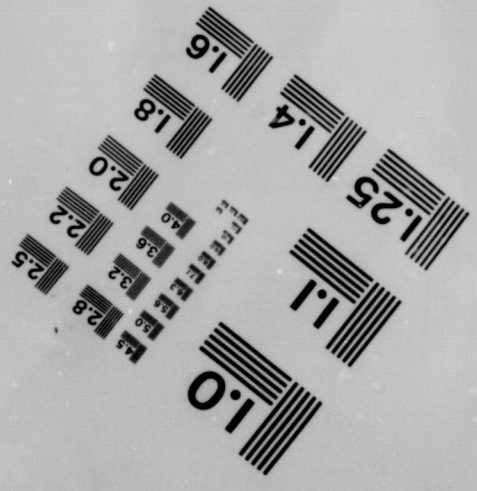
RESOLUTION TEST
TARGET (NE-1)

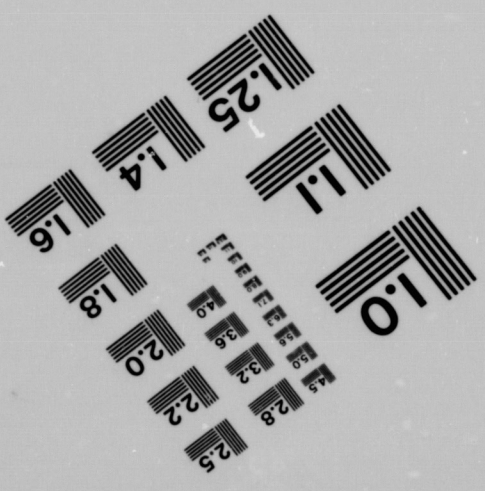












PARSONS

HARTSVILLE - BASE CASE

ESTIMATE WORKSHEET

M.T.O. BY | PRICED BY | DATE AUG. '85 | SHEET 1 OF 1

JOB NO.: 6440-11 | CLIENT: DOE IPNL | TYPE OF ESTIMATE ROM | CHECKED BY RWT/[illegible]

UNIT/AREA MRS FACILITY
DESCRIPTION BAL OF PLANT
CAPACITY AREA # 5

ACCNT		QUANTITY	UNIT	COST OR M/HRS PER UNIT MATL	M/H	LAB $	MATERIAL EXPENSE	SUBCONTRACT M/HRS	SUBCONTRACT DOLLARS	LABOR M/HRS	LABOR DOLLARS	TOTAL DOLLARS
	SUMMARY											
	UTILITIES											
2560	PROCESS SEWER SYSTEM						191100			4904		5/4 3.0 a
2565	WATER STORAGE SYSTEM						708220			21868		5/4 30 c
2566	OILY SEWER SYSTEM						51100			2114		5/4 30 e
2576	DIESEL FUEL SYSTEM						283500			7212		30 d
2580	NATURAL GAS SYSTEM						213880			11799		30 i
2582	COOLING TOWER						658630			16236		30 f
							—			—		—
						18%				64733	1202000	
	TOTAL DIRECT COST						2106430					
					USE		2106000					3308000

CES-2000-0 (4/81)

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COST ESTIMATE SUMMARY
AREA 6, WASTE STORAGE

HARTSVILLE
BASE CASE

PARSONS
ESTIMATE WORKSHEET

M.T.O. BY ENGINEERING PRICED BY ✓ MESSEC/[illegible] △ DATE AUG 85 SHEET ___ OF ___
JOB NO.: 6440-11 CLIENT: DOE/PNL TYPE OF ESTIMATE ROM CHECKED BY DH
UNIT/AREA MRS FACILITY
DESCRIPTION
CAPACITY

ACCNT		QUANTITY	UNIT	COST OR M/HRS PER UNIT MATL	M/H	LAB $	MATERIAL EXPENSE	SUBCONTRACT M/HRS	SUBCONTRACT DOLLARS	LABOR M/HRS	LABOR DOLLARS	TOTAL DOLLARS
	TOTAL SUMMARY AREA 6											
	TOTAL BY DIVISION					16.56	16094000			190470	3154000	19248000
	PRODUCTIVITY	85	%							33612	557000	557000
	S/TOTAL						16094000			224082	3711000	19805000
	CONTR OH&P	26.5	%									5248000
	TOTAL											25053000

CES-2000-0 (4/81)

6-1/15

HARTSVILLE

BASE CASE

PARSONS

ESTIMATE WORKSHEET

M.T.O. BY ENGINEERING PRICED BY V. MESEC DATE AUG. 85 SHEET ___ OF ___

JOB NO.: 6440-11 CLIENT DOE/PNL TYPE OF ESTIMATE ROM. CHECKED BY DH

UNIT/AREA MRS FACILITY

DESCRIPTION

CAPACITY

ACCNT		QUANTITY	UNIT	COST OR M/HRS PER UNIT MATL	M/H	LABS	MATERIAL EXPENSE	SUBCONTRACT M/HRS	SUBCONTRACT DOLLARS	LABOR M/HRS	LABOR DOLLARS	TOTAL DOLLARS
	SUMMARY AREA (S) #1											
DIV 2	SITE WORK					16.06	701900			87882	1413000	8432000
3	CONCRETE					15.31	177300			46710	718000	2491000
4	MASONARY					16.50						
5	METALS					18.71						
6	WOOD & PLASTICS					16.50						
7	THERMAL MOIST. PROTECTION					16.50						
8	DOORS & WINDOWS					16.50						
9	FINISHES					16.32						
10	SPECIALTIES					17.51						
11	EQUIPMENT					18.71	581200			28960	530000	6342000
12	FURNISHINGS					16.50						
13	SPECIAL CONSTRUCTION					18.71	24000			768	14000	38000
14	CONVEYING SYSTEMS					18.71						
15	MECHANICAL SYSTEMS					18.71						
16	ELECTRICAL					17.85	144600			26460	479000	1945000
17	INSTRUMENTATION					18.38						
	TOTAL					16.56	1609900			190470	3154000	19248000

CES-2000-0 (4/81)

HARTSVILLE
BASE CASE

PARSONS
ESTIMATE WORKSHEET

M.T.O. BY ENGINEERING PRICED BY ✓ MESSEC/[illegible] △ DATE AUG 85 SHEET ___ OF ___
JOB NO.: 6440-11 CLIENT: DOE/PNL TYPE OF ESTIMATE ROM CHECKED BY DH
UNIT/AREA MRS FACILITY
DESCRIPTION
CAPACITY

ACCNT		QUANTITY	UNIT	COST OR M/HRS PER UNIT MATL	M/H	LAB $	MATERIAL EXPENSE	SUBCONTRACT M/HRS	SUBCONTRACT DOLLARS	LABOR M/HRS	LABOR DOLLARS	TOTAL DOLLARS
DIV 2	SITE WORK AREA #6											
	SUMMARY											
2100	CLEARING PG 1						133930			3192		
2200	EARTHWORK 2						5625500			64875		
2220	TRENCH & BACKFILL 4						368610			10911		
2500	SITE DRAINAGE 7						88490			1937		
2577	MEMBRANE LINER 8						1750			125		
2600	ROADS & PAVING 9						589340			3971		
2700	SITE IMPROVEMENTS 10						204700			2790		
2800	LANDSCAPING 12						6460			81		
	TOTAL AREA 6 SITE WORK						7018780					
				USE			7019000			87882		

CES-2000-0 (4/81)

PARSONS

HARTSVILLE - BASE CASE

ESTIMATE WORKSHEET

M.T.O. BY EIGR. PRICED BY RJF DATE AUG. '85 SHEET ____ OF ____

JOB NO.: 6440-11 CLIENT: DOE / PHL TYPE OF ESTIMATE ROM CHECKED BY DM

UNIT/AREA MRS FACILITY

DESCRIPTION SITE LOCATION

CAPACITY

ACCNT		QUANTITY	UNIT	COST OR M/HRS PER UNIT			MATERIAL EXPENSE	SUBCONTRACT		LABOR		TOTAL DOLLARS
				MATL	M/H	LABS		M/HRS	DOLLARS	M/HRS	DOLLARS	
DIV. 2	SITEWORK . AREA # 6											
2200	EARTHWORK											
10	FINE GRADING - EARTH (MACH)	-	AC	1878	48							
11	EXCAVATION INCL. HAULING. EARTH	255600	CY	1.09	.01		278,600			2556		
12	EMBANKMENT - COMPACTED FILL	268280	CY	1.10	.02		295,200			5368		
13	ROCK EXCAV. & HAUL - BLASTING	258400	CY	4.50	.10		1,162,800			25840		
14	ROCK EXCAV. & HAUL - RIPPABLE	-	CY	1.70	.02							
16	ROCK EMBANKMENT - COMP - HAUL	3888895	CY	1.00	.008		3,888,900			31111		
16	CRUSHING & SCREENING & HAULING	-	CY	2.00	.016							
17	DIKE (EARTH FILL) POND	-	CY	1.10	.02							
18	EARTH FILL AT EXISTING TUNNEL & DIKES	-	CY	1.10	.02							
19	EXCAVATION AT PONDS	-	CY	1.09	.01							
	IMPORT	-	-									
	SUB TOTAL						5,685,500			64875		

CFS 2000 0 (4/81)

HARTSVILLE

BASE CASE

PARSONS

ESTIMATE WORKSHEET

M.T.O. BY ENGINEERING PRICED BY V MESSEC DATE AUG 85 SHEET ___ OF ___

JOB NO.: 6440-11 CLIENT: DOE/PNL TYPE OF ESTIMATE RCM CHECKED BY DH

UNIT/AREA MRS FACILITY

DESCRIPTION CASK STORAGE

CAPACITY

ACCNT		QUANTITY	UNIT	COST OR M/HRS PER UNIT MATL	M/H	LAB $	MATERIAL EXPENSE	SUBCONTRACT M/HRS	SUBCONTRACT DOLLARS	LABOR M/HRS	LABOR DOLLARS	TOTAL DOLLARS
DIV 3	CONCRETE AREA 6											
3341	CONCRETE.											
	CAT I STRUCTURE CONCRETE SUPPORT PADS-REINF. FOR CASKS- 30,260 X 1/3	10080	CY	168	4.3		1693440			43344		
	STRUCTS-CONCRETE CAT I 1330 X 1/3	440	CY	163	6.8		71720			2992		
	1/4" S/S LINER W/NELSON STUDS 2200SF X 1/3	733	SF	11.00	.51		8060			374		
3341	SUB TOTAL.						1773220					
		USE					1773000			46710		

CES-2000-0 (4/81)

PARSONS

HARTSVILLE BASE CASE

ESTIMATE WORKSHEET

M.T.O. BY | PRICED BY | DATE AUG 85 | SHEET ____ OF ____

JOB NO.: 6440-11 | CLIENT: DOE/PNL | TYPE OF ESTIMATE ROM | CHECKED BY JWF BM

ACCNT	UNIT/AREA DESCRIPTION CAPACITY	QUANTITY	UNIT	COST OR M/HRS PER UNIT MATL	M/H	LAB $	MATERIAL EXPENSE	SUBCONTRACT M/HRS	SUBCONTRACT DOLLARS	LABOR M/HRS	LABOR DOLLARS	TOTAL DOLLARS
DIV. 11	SUMMARY AREA 6											
11866	EQUIPMENT (SAME AS CLINCH RIVER BASE CASE)						5812000			28260		

CES-2000-0 (4/81)

PARSONS

ESTIMATE WORKSHEET

CLINCH RIVER BASE CASE

M.T.O. BY ENGINEERING PRICED BY √ Mosser/Roth △ DATE Aug 85 SHEET ____ OF ____

JOB NO.: 6440-11 CLIENT: DOE/PNL TYPE OF ESTIMATE Rom CHECKED BY DH

UNIT/AREA MRS FACILITY

DESCRIPTION

CAPACITY

ACCNT		QUANTITY	UNIT	COST OR M/HRS PER UNIT			MATERIAL EXPENSE			SUBCONTRACT				LABOR				TOTAL DOLLARS		
				MATL	M/H	LAB $				M/HRS	DOLLARS			M/HRS	DOLLARS					
DV13	SPECIAL CONSTRUCTION - AREA 6																			
13610	STORAGE FACILITY GATE STATION	1	LOT				2/kw							768						

CES-2000-0 (4/81)

PARSONS

HARTSVILLE BASE

ESTIMATE WORKSHEET

M.T.O. BY JJ | PRICED BY JJ. | DATE AUG-85 | SHEET 1 OF ____

JOB NO.: 6440-11 | CLIENT: PNL-DOE | TYPE OF ESTIMATE ROM | CHECKED BY

ACCNT	UNIT/AREA / DESCRIPTION / CAPACITY	QUANTITY	UNIT	COST OR M/HRS PER UNIT: MATL	M/H	LAB $	MATERIAL EXPENSE	SUBCONTRACT: M/HRS	SUBCONTRACT: DOLLARS	LABOR: M/HRS	LABOR: DOLLARS	TOTAL DOLLARS
	ELECTRIC. AREA - 6											
	SUMMARY											
16400	SERVICE DISTRIBUTION						242000			1690		
16500	STREET & STORAGE LIGHT'G						332980			4453		
16566	SECURITY LIGHTING						93530			1294		
16580	GROUND'G						26710			615		
16604	ALARM ZONE						269120			5026		
16900	INSTRUMENT						502000			14274		
			SAY =				1,466,000			26850		

CES-2000-0 (4/81)

PARSONS

HARTSVILLE BASE

ESTIMATE WORKSHEET

M.T.O. BY JJ | PRICED BY JJ | DATE AUG-85 | SHEET 2 OF ___

JOB NO.: 6440-11 | CLIENT: PNL-DOE | TYPE OF ESTIMATE ROM | CHECKED BY Ken Dill

UNIT/AREA MRS FACILITY

DESCRIPTION

CAPACITY

ACCNT		QUANTITY	UNIT	COST OR M/HRS PER UNIT			MATERIAL EXPENSE	SUBCONTRACT		LABOR		TOTAL DOLLARS
				MATL	M/H	LAB $		M/HRS	DOLLARS	M/HRS	DOLLARS	
	ELECTRICAL AREA-	6										
16,400	SUMMARY						242,000			1190		
	(FROM CLINCH RIVER ESTIM)											

CES-2000-0 (4/81)

HARTSVILLE BASE

PARSONS

ESTIMATE WORKSHEET

M.T.O. BY J.J. PRICED BY J.J. DATE AUG-85 SHEET 3 OF ___

JOB NO.: 6440-11 CLIENT: PNL-DOE TYPE OF ESTIMATE ROM CHECKED BY Rcm B/V

UNIT/AREA BASE HARTSVILLE

DESCRIPTION STREET & AREA LIGHTING

CAPACITY

ACCNT		QUANTITY	UNIT	COST OR M/HRS PER UNIT MATL	M/H	LAB $	MATERIAL EXPENSE	SUBCONTRACT M/HRS	SUBCONTRACT DOLLARS	LABOR M/HRS	LABOR DOLLARS	TOTAL DOLLARS
	ELECTRICAL AREA-6											
16500	BASE HARTSVILLE LIGHTING CASK STORAGE											
	5X200 = 1000											
	7.5X200 = 1500											
	1000 X 1500 = 1,500,000 ☐											
	6X200 = 1200											
	12 X 200 = 2400											
	1200X 2400 = 2,880,000 ☐											
	2,880,000 + 1,500,000 = 4,380,000 ☐ SF											
	$\frac{\$798,250 \times 4380,000}{10,500,000} =$						332,980			4,453		
	$\frac{10676 \times 4,380,000}{10,500,000} =$											

CES-2000-0 (4/81)

PARSONS

HARTSVILLE BASE

ESTIMATE WORKSHEET

M.T.O. BY JJ | PRICED BY JJ | DATE AUG-95 | SHEET 4 OF ____

JOB NO.: 6440-11 | CLIENT: PNL-DOE | TYPE OF ESTIMATE ROM | CHECKED BY RCM OH

UNIT/AREA SECURITY LIGHTING

DESCRIPTION

CAPACITY

ACCNT		QUANTITY	UNIT	COST OR M/HRS PER UNIT			MATERIAL EXPENSE			SUBCONTRACT				LABOR				TOTAL DOLLARS		
				MATL	M/H	LAB $				M/HRS	DOLLARS			M/HRS	DOLLARS					
	ELECTRIC. AREA-6																			
16500	SECURITY LIGHTING STORAGE AREA																			
	226,340 × 4380000 / 10,600,000 =						93,530							1294						
	3132 × 4380000 / 10,600,000 =																			

CES-2000-0 (4/81)

6-11

PARSONS

ESTIMATE WORKSHEET

M.T.O. BY J.J. PRICED BY J.J. DATE AUG-85 SHEET 5 OF 3

JOB NO.: 6440-11 CLIENT: PNL-DOE TYPE OF ESTIMATE ROM CHECKED BY T.B.H.

UNIT/AREA CLINCH RIVER ESTIM.

DESCRIPTION SECURITY LIGHTING

CAPACITY

ACCNT		QUANTITY	UNIT	COST OR M/HRS PER UNIT			MATERIAL EXPENSE	SUBCONTRACT		LABOR		TOTAL DOLLARS
				MATL	M/H	LAB $		M/HRS	DOLLARS	M/HRS	DOLLARS	
	ELECTRICAL AREA-5 & 6											
16500	SECURITY LIGHTING (11-14)											
	FLOODLIGHT 1000W. HPS. 277V. HOLOPHANE #VFLDC10HP277	140	E	671	3		93940			420		
	10 FT ROUND STEEL POLE	130	E	402	2		52260			260		
	DIRECT BARIAL CABLE	14000	LF	25	.037		35000			518		
	1000 W. H.PRESS. SOD. LAMP	140	E	126	.1		17640			14		
	TRENCHING & BACK FILL	14000	LF	1.5	.1		21000			1400		
	CONCRETE FOUNDATION	130	E	50	½		6500			520		
							226,340			3132		

REFERENCE BACK-UP ONLY

CES-2000-0 (4/81)

6-12

HARTSVILLE BASE

PARSONS

ESTIMATE WORKSHEET

M.T.O. BY J.J. PRICED BY J.J. DATE AUG-85 SHEET 6 OF

JOB NO.: 6440-11 CLIENT: PNL-DOE TYPE OF ESTIMATE ROM CHECKED BY Rem

UNIT/AREA CASK STORAGE

DESCRIPTION GROUND'G GRID

CAPACITY

ACCNT		QUANTITY	UNIT	COST OR M/HRS PER UNIT MATL	M/H	LAB $	MATERIAL EXPENSE	SUBCONTRACT M/HRS	SUBCONTRACT DOLLARS	LABOR M/HRS	LABOR DOLLARS	TOTAL DOLLARS
	ELECTRICAL AREA-6											
16550	BASE HARTSVILL GROUNDING											
	5X200 = 1000 X 1500 =	1,500,000	Ø									
	7.5X200 = 1500											
	6X200 = 1200 X 2400 =	2,880,000	Ø									
	12X200 = 2400											
		4,380	000	Ø	.006	099	26,710			615		
		4,380	000		.000	1405						

CES-2000-0 (4/81)

HARTSVILLE BASE

PARSONS

ESTIMATE WORKSHEET

M.T.O. BY J. J. PRICED BY J. J. DATE AUG-85 SHEET 7 OF ___

JOB NO.: 6440-11 CLIENT: PNL-DOE TYPE OF ESTIMATE ROM CHECKED BY Rcm 0/4

UNIT/AREA BASE HARTSVILLE CASK STOR

DESCRIPTION ALARM ZONE

CAPACITY

ACCNT		QUANTITY	UNIT	COST OR M/HRS PER UNIT MATL	M/H	LAB $	MATERIAL EXPENSE	SUBCONTRACT M/HRS	SUBCONTRACT DOLLARS	LABOR M/HRS	LABOR DOLLARS	TOTAL DOLLARS
	ELECTRICAL AREA - 6											
	ALARM ZONE											
16604	BASE HARTSVILLE CASK STOR.											
	(11+11+10½+3½+1)×200 =	7400	LF									
	533,400 × 7400 / 11,000 = 358,830											
	USING ONE TO THREE RATIO											
	358,830 ÷ 4 = 89,710											
	89,710 ÷ 5,026						269,120			5026		
	358,830 − 89,710 = 269,120											

CES-2000-0 (4/81)

PARSONS

HARTSVILLE BASE

ESTIMATE WORKSHEET

M.T.O. BY JJ PRICED BY JJ DATE AUG-85 SHEET 8 OF ____

JOB NO.: 6440-11 CLIENT: PNL-DOE TYPE OF ESTIMATE ROM CHECKED BY Rm 8/11

UNIT/AREA MRS FACILITY

DESCRIPTION

CAPACITY

ACCNT		QUANTITY	UNIT	COST OR M/HRS PER UNIT			MATERIAL EXPENSE	SUBCONTRACT		LABOR		TOTAL DOLLARS
				MATL	M/H	LAB $		M/HRS	DOLLARS	M/HRS	DOLLARS	
	ELECTRICAL AREA-	6										
16900	INST/CONTROL WIRING						502,000			14274		
	(FROM CLINCH RIVER ESTIM)											

CES-2000-0 (4/81)

COST ESTIMATE SUMMARY
AREA 7, OFFSITE IMPROVEMENTS

PARSONS

ESTIMATE WORKSHEET

HARTSVILLE BASE CASE

M.T.O. BY ENGR. PRICED BY RUF DATE AUGUST SHEET ____ OF ____

JOB NO.: 6440-11 CLIENT: DOE/PNL TYPE OF ESTIMATE ROM CHECKED BY Ram PM

UNIT/AREA MRS FACILITY

DESCRIPTION

CAPACITY

ACCNT		QUANTITY	UNIT	COST OR M/HRS PER UNIT MATL	M/H	LAB $	MATERIAL EXPENSE	SUBCONTRACT M/HRS	SUBCONTRACT DOLLARS	LABOR M/HRS	LABOR DOLLARS	TOTAL DOLLARS
	TOTAL SUMMARY AREA 7											
	TOTAL BY DIVISION					16.65	7 433 000			157579	2 684 000	10 057 000
	LABOR PRODUCTIVITY	85%								27808	463 000	463 000
	S/TOTAL						7 433 000			185387	3 087 000	10 520 000
	CONTRACTORS OH-PROFIT	26.5%										2 788 000
	TOTAL AREA 7 W/OUT CONTINGENCY											13 308 000

CES-2000-0 (4/81)

7-Via

PARSONS

ESTIMATE WORKSHEET

HARTSVILLE BASE CASE

M.T.O. BY ENGINEERING PRICED BY V. NIESEC DATE AUG. 85 SHEET ____ OF ____

JOB NO.: 6440-11 CLIENT: DOE/PNC TYPE OF ESTIMATE ROM. CHECKED BY

UNIT/AREA MRS FACILITY

DESCRIPTION

CAPACITY

ACCNT		QUANTITY	UNIT	COST OR M/HRS PER UNIT MATL	M/H	LAB $	MATERIAL EXPENSE	SUBCONTRACT M/HRS	SUBCONTRACT DOLLARS	LABOR M/HRS	LABOR DOLLARS	TOTAL DOLLARS
	SUMMARY AREA(S) #7											
DIV 2	SITE WORK					16.08	1 189 000			106 019	1 715 000	2 904 000
3	CONCRETE					15.31	0			0	0	0
4	MASONRY					16.50	0			0	0	0
5	METALS					18.74	0			0	0	0
6	WOOD & PLASTICS					14.50	0			0	0	0
7	THERMAL MOIST. PROTECTION					16.50	0			0	0	0
8	DOORS & WINDOWS					16.50	0			0	0	0
9	FINISHES					16.35	0			0	0	0
10	SPECIALTIES					17.61	0			0	0	0
11	EQUIPMENT					18.74	0			0	0	0
12	FURNISHINGS					16.50	0			0	0	0
13	SPECIAL CONSTRUCTION					18.74	0			0	0	0
14	CONVEYING SYSTEMS					18.74	0			0	0	0
15	MECHANICAL SYSTEMS					18.74	0			0	0	0
16	ELECTRICAL					17.85	2 934 000			50 930	909 000	3 843 000
17	INSTRUMENTATION					18.38	0			0	0	0
	TOTAL						7 483 000			157 519	2 624 000	10 057 000

CES-2000-0 (4/81)

PARSONS

HARTSVILLE BASE CASE

ESTIMATE WORKSHEET

M.T.O. BY | PRICED BY | DATE AUG 85 | SHEET 1 OF 1

JOB NO.: 6440-11 | CLIENT: DOE/PNL | TYPE OF ESTIMATE ROM | CHECKED BY Rem B/L

UNIT/AREA MRS FACILITY
DESCRIPTION SITE LOCATION2
CAPACITY

ACCNT		QUANTITY	UNIT	COST OR M/HRS PER UNIT			MATERIAL EXPENSE	SUBCONTRACT		LABOR		TOTAL DOLLARS
				MATL	M/H	LAB $		M/HRS	DOLLARS	M/HRS	DOLLARS	
DIV 2	SUMMARY AREA #7											
2100	CLEARING						128 390			3060		
2200	EARTHWORK						1 114 700			17528		
2220	TRENCHING & BACKFILL						60 540			1018		
2520	DRAINAGE PIPE						33 790			452		
2550	SITE UTILITIES						132 000			7200		
2580	NATURAL GAS SYSTEM						66 000			3900		
2600	ROADS & PAVING						445 240			4712		
2800	LANDSCAPING						2 517 860			68779		
DIV 2	TOTAL SITE WORK AREA #7						4 498 540			106649		
						USE	4 449 000					

CES-2000-0 (4/81)

HARTSVILLE
AREA #7
BASE CASE

PARSONS

ESTIMATE WORKSHEET

M.T.O. BY ENGR. PRICED BY RUF DATE AUG. '85 SHEET 1 OF

JOB NO.: 6440-11 CLIENT: DOE / PNL TYPE OF ESTIMATE ROM CHECKED BY

UNIT/AREA MRS FACILITY
DESCRIPTION SITE LOCATION
CAPACITY

ACCNT		QUANTITY	UNIT	COST OR M/HRS PER UNIT			MATERIAL EXPENSE			SUBCONTRACT				LABOR				TOTAL DOLLARS		
				MATL	M/H	LAB $				M/HRS	DOLLARS			M/HRS	DOLLARS					
DIV. 2	SITEWORK AREA #7																			
2010	SUBSURFACE																			
2100	CLEARING																			
2102	CLEARING AND GRUBBING	187.5	AC	1007	4H			128	390					3060						
2110	DEMOLITION	1	LOT	LS	LS															
2110	TOTAL CLEARING							128	390					3060						

CES-2000-0 (4/81)

HARTSVILLE
AREA #7
BASE CASE

PARSONS

ESTIMATE WORKSHEET

M.T.O. BY ENGR. PRICED BY RLF DATE AUG. '85 SHEET 1 OF

JOB NO.: 6440-11 CLIENT: DOE / PNL TYPE OF ESTIMATE ROM CHECKED BY

UNIT/AREA MRS FACILITY

DESCRIPTION SITE LOCATION

CAPACITY

ACCNT		QUANTITY	UNIT	COST OR M/HRS PER UNIT MATL	M/H	LAB $	MATERIAL EXPENSE	SUBCONTRACT M/HRS	SUBCONTRACT DOLLARS	LABOR M/HRS	LABOR DOLLARS	TOTAL DOLLARS
DIV. 2	SITEWORK											
2200	EARTHWORK											
10	FINE GRADING - EARTH (MACH)	0	AC	1878.	48.							
11	EXCAVATION INCL. HAULING - EARTH	321700	CY	1.09	.01		350 700			3217.		
12	EMBANKMENT - COMPACTED FILL	337785	CY	1.10	.02		371 600			6756		
13	ROCK EXCAV. & HAUL - BLASTING	69000	CY	4.50	.10		310 500			6900.		
14	ROCK EXCAV. & HAUL - RIPPABLE	0	CY	1.70	.02							
16	ROCK EMBANKMENT - COMP - HAUL	81915	CY	1.00	.008		81 900			655		
16	CRUSHING & SCREENING & HAULING		CY	2.00	.016							
17	DIKE (EARTH FILL) POND		CY	1.10	.02							
18	EARTH FILL AT EXISTING TUNNEL & DIKES	0	CY	1.10	.02							
19	EXCAVATION AT PONDS	0	CY	1.09	.01							
2200	TOTAL EARTHWORK						1 911 600			17528		

CES-2000-0 (4/81)

HARTSVILLE
AREA #7
BASE CASE

PARSONS

ESTIMATE WORKSHEET

M.T.O. BY ENGR. PRICED BY RUE DATE AUG. 86 SHEET 3 OF ____

JOB NO.: 6440-11 CLIENT: DOE/PNL TYPE OF ESTIMATE ROM CHECKED BY [illegible]

UNIT/AREA MRS FACILITY
DESCRIPTION SITE LOCATION
CAPACITY

ACCNT		QUANTITY	UNIT	COST OR M/HRS PER UNIT			MATERIAL EXPENSE	SUBCONTRACT		LABOR		TOTAL DOLLARS
				MATL	M/H	LAB $		M/HRS	DOLLARS	M/HRS	DOLLARS	
DIV 2	SITEWORK											
2220	TRENCHING - Incl. DITCHES											
21	EXCAV. AND HAUL - EARTH	0	CY	1.90	.08							
22	EXCAV. AND HAUL - ROCK TRENCHES	0	CY	6.00	.15							
22.1	1 FT DEEP FOR FOUNDATIONS	0	CY	6.00	.15							
22.2	2 " " " "	0	CY	6.00	.15							
22.5	VARIOUS " " ELEC. POWER LINES	0	CY	6.00	.15							
22.6	6 FT " " PIPE, DRAINS, ETC	11460	CY	6.00	.16		26 760			669		
2220	SUB TOTAL TRENCHING						26 760			669		
	TRANS TO SHT 4											

CES-2000-0 (4/81)

HARTSVILLE
AREA #7
BASE CASE

PARSONS

ESTIMATE WORKSHEET

M.T.O. BY ENGR. PRICED BY RMF DATE AUG. '86 SHEET 4 OF ____

JOB NO.: 6440-11 CLIENT: DOE/PNL TYPE OF ESTIMATE ROM CHECKED BY JWP

UNIT/AREA MRS FACILITY
DESCRIPTION SITE LOCATION
CAPACITY

ACCNT		QUANTITY	UNIT	COST OR M/HRS PER UNIT			MATERIAL EXPENSE	SUBCONTRACT		LABOR		TOTAL DOLLARS
				MATL	M/H	LAB $		M/HRS	DOLLARS	M/HRS	DOLLARS	
DIV. 2	SITEWORK											
2223	BACKFILL	2640	CY	3.48	.07		9190.			185.		
24	GRAVEL BEDDING	1820	CY	13.51	.09		24580.			164		
25	SHORING. EARTH TRENCH WALLS	0	SF	0.60	.06							
26	SAND (PONDS)	0	CY	17.40	.05							
	TRENCHING & T Fm SHT 3						26760			669		
2220	TOTAL TRENCHING & BACKFILL						60510.			1018.		

CES-2000-0 (4/81)

HARTSVILLE
AREA #7
BASE CASE

PARSONS

ESTIMATE WORKSHEET

M.T.O. BY ENGR. PRICED BY RUF DATE AUG. '85 SHEET 5 OF 4

JOB NO.: GW10-11 CLIENT: DOE/PNL TYPE OF ESTIMATE ROM CHECKED BY [illegible]

UNIT/AREA MRS FACILITY

DESCRIPTION SITE LOCATION

CAPACITY

ACCNT		QUANTITY	UNIT	COST OR M/HRS PER UNIT MATL	M/H	LAB $	MATERIAL EXPENSE	SUBCONTRACT M/HRS	SUBCONTRACT DOLLARS	LABOR M/HRS	LABOR DOLLARS	TOTAL DOLLARS
DIV. 2	SITEWORK											
2522	CORRUGATED METAL PIPE											
2522.15	15" DIA	0	LF	8.60	.14							
.18	18"	0		9.30	.15							
.21	21"	0		13.20	.18							
.24	24"	0		15.10	.18							
.30	30"	0		18.50	.24							
.36	36"	72		29.40	.47		2120			34		
.42	42"	0		37.10	.56							
.48	48"	250		41.80	.56		10450			140		
.60	60"	240		65.00	.75		15600			180		
.38	36" PERFORATED	0		32.40	.50							
2520	SUB TOTAL CORR METAL PIPE TRANS TO SHT 6						28170			354		

CES 2000 0 (4/81)

HARTSVILLE
AREA #7
BASE CASE

PARSONS
ESTIMATE WORKSHEET

M.T.O. BY | PRICED BY | DATE AUG. '85 | SHEET 6 OF
JOB NO.: 6440-11 | CLIENT: DOE/PNL | TYPE OF ESTIMATE ROM | CHECKED BY
UNIT/AREA MRS FACILITY
DESCRIPTION SITE LOCATION
CAPACITY

ACCNT		QUANTITY	UNIT	COST OR M/HRS PER UNIT MATL	M/H	LAB $	MATERIAL EXPENSE	SUBCONTRACT M/HRS	SUBCONTRACT DOLLARS	LABOR M/HRS	LABOR DOLLARS	TOTAL DOLLARS
DIV. 2	SITEWORK											
	DRAINAGE PIPE (CONT)											
2523	CMP END SECTIONS											
2523.15	15" DIA.	0	EA	44.00	1.6							
.18	18"	0	EA	58.00	1.7							
.21	21"	0	EA	68.00	2.0							
.24	24"	0	EA	103.00	2.2							
.30	30"	0	EA	127.00	2.8							
.36	36"	4	EA	184.00	3.8		740.			11.		
.42	42"	0	EA	215.00	3.5							
.48	48"	10	EA	246.00	4.7		2 480.			47.		
.60	60"	8	EA	300.00	5.0		2 400.			40.		
2524	PVC PERFORATED PIPE											
2524.6	6" DIA		LF	1.40	0.06							
.8	8" "		LF	2.00	0.07							
	CORR METAL PIPE S/T FM SHT 5						28 170.			354.		
2520	TOTAL DRAINAGE PIPE						33 790.			452.		

CES-2000-0 (4/81)

HARTSVILLE
AREA #7
BASE CASE

PARSONS

ESTIMATE WORKSHEET

M.T.O. BY ESVOR. PRICED BY RUF DATE AUG. '85 SHEET 7 OF ___

JOB NO.: 6111D-11 CLIENT: DOE | PNL TYPE OF ESTIMATE ROM CHECKED BY

UNIT/AREA MRS FACILITY

DESCRIPTION SITE LOCATION

CAPACITY

ACCNT		QUANTITY	UNIT	COST OR M/HRS PER UNIT MATL	M/H	LAB $	MATERIAL EXPENSE	SUBCONTRACT M/HRS	SUBCONTRACT DOLLARS	LABOR M/HRS	LABOR DOLLARS	TOTAL DOLLARS
DIV. 2	SITEWORK											
2550	SITE UTILITIES											
2551	WATER SYSTEM											
2551.4	4" PVC PIPE		LF	3.50	.33							
.6	6"		LF	5.50	.5							
.8	8"		LF	9.00	.55							
.10	10"		LF	13.00	.6							
.12	12"		LF	15.00	.7							
2551.99	CS FITTINGS (25% OF PVC)	1	LOT									
2552.6	6" CAST IRON PIPE		LF	12.00	.8							
.8	8" DUCTILE IRON CEMENT LINED	8000	LF	15.00	.9		120000.			7200		
.9	FITTINGS - 10%	1	LOT				12000					
2555.6	6" GATE VALVES		EA.	180.	10.							
.8	8"		EA.	200.	12							
.10	10"		EA.	700.	15							
.12	12"		EA.	1000.	20							
2556	VALVE BOXES		EA.	15.	5.0							
2557	POST INDICATOR		EA.	190.	6.0							
2558	CONC. THRUST BLOCKS		CY	60.	0.5							
2559	FIRE HYDRANTS		EA.	500.	20.							
2550	TOTAL SITE UTILITIES						132000.			7200.		

CES-2000 0 (4/81)

74C

HARTSVILLE
AREA #7
BASE CASE

PARSONS
ESTIMATE WORKSHEET

M.T.O. BY ENGR. PRICED BY RUF DATE AUG. '85 SHEET 8 OF ___
JOB NO.: 6410-11 CLIENT: DOE/PNL TYPE OF ESTIMATE ROM CHECKED BY [illegible]
UNIT/AREA MRS FACILITY
DESCRIPTION
CAPACITY

ACCNT		QUANTITY	UNIT	COST OR M/HRS PER UNIT MATL	M/H	LAB $	MATERIAL EXPENSE	SUBCONTRACT M/HRS	SUBCONTRACT DOLLARS	LABOR M/HRS	LABOR DOLLARS	TOTAL DOLLARS
2580	NATURAL GAS SYSTEM											
	C.S. PIPE CTD/W 1"Ø		LF	2.80	.32							
	1½"Ø			3.00	.40							
	2"Ø			4.00	.40							
	3"Ø			5.00	.48							
	4"Ø	6000		11.00	.65		66,000			3900		
	6"Ø			25.00	.80							
	PRE-CAST CONC. METER BOX & COVER		EA.	490-	9							
	4" METER & PRESSURE REDUCER		EA	1000-	2							
2580	TOTAL - NAT GAS SYS						66,000			3900		

CES 2000 0 (4/81)

HARTSVILLE
AREA #7
BASE CASE

PARSONS

ESTIMATE WORKSHEET

M.T.O. BY _____ PRICED BY _____ DATE AUG 1985 SHEET 7 OF _____

JOB NO.: 6440-11 CLIENT: DOE/PNL TYPE OF ESTIMATE RUM 35% CHECKED BY _____

UNIT/AREA MRS FACILITY

DESCRIPTION SITE LOCATION -

CAPACITY AREA -

ACCNT		QUANTITY	UNIT	COST OR M/HRS PER UNIT MATL	M/H	LAB $	MATERIAL EXPENSE	SUBCONTRACT M/HRS	SUBCONTRACT DOLLARS	LABOR M/HRS	LABOR DOLLARS	TOTAL DOLLARS
DU2	SITE WORK											
2600	ROADS & PAVING											
2612	ASPHALT CONC PAVING	—										
2612.03	3" THK	0	SY	4.80	.06							
2612.05	5" THK	316667	SY	8.70	.09		277340			3120		
2613	CONCRETE PAVING	—										
2613.04	4" THK		SY	7.00	.05							
.08	8" (		SY	15.00	.07							
.09	9")		SY	15.70	.07							
2613.12	12" THK		SY	19.00	.09							
2614	CRUSHED ROCK (GRAVEL) PAVING		CY	15.00	.06							
2614.2	2" THK		SY	.80	.01							
.12	12" (		SY	5.00	.02							
.13	13")		SY	5.50	.03							
2619.15	15" THK		SY	6.30	.03							
2615.09	9" GRAVEL BASE		SY	3.90	.02							
2615.12	12" THK GRAVEL BASE		SY	4.95	.02							
	13") GRAVEL BASE		SY	5.50	.03							
2616	SUB BASE - COMPACTED GRAVEL	—										
2616.06	6" THK	52000	SY	2.50	.01		130000			520		
	12" THK		SY	9.39	.02							
2617	SUBGRADE PREP	—										
2617.06	6" (SEE 2241)		SY	.36	.01							
2617.12	12" (")	54600	SY	.63	.01		34400			546		
2600	SUB TOTAL ROADS & PAVING						441740			4186		

CES-2000-0 (4/81) TRANS TO CNT 10

HARTSVILLE
AREA #7
BASE CAMP

PARSONS

ESTIMATE WORKSHEET

M.T.O. BY BNGR. PRICED BY RUF DATE AUG 1985 SHEET 10 OF —

JOB NO.: 6440-11 CLIENT: DOE/PNL TYPE OF ESTIMATE ROM 35% CHECKED BY

UNIT/AREA MRS FACILITY

DESCRIPTION SITE LOCATION –

CAPACITY AREA –

ACCNT		QUANTITY	UNIT	COST OR M/HRS PER UNIT			MATERIAL EXPENSE		SUBCONTRACT		LABOR		TOTAL DOLLARS
				MATL	M/H	LAB $			M/HRS	DOLLARS	M/HRS	DOLLARS	
DIV 2	SITE WORK												
	ROADS & PAVING (CONT)												
2618	CONC CURBS		LF	5.40	.21								
2619	CONC CURB & GUTTER		LF	6.35	.42								
2620	CONC STAIRS		CY	129.00	16.9								
2622	PAVEMENT STRIPING	52000	LF	.06	.01			3120			520		
2623	PAVEMENT MARKINGS		SY	9.45	.72								
2626	SIGNS	8	EA	48.00	.79			380			6		
2628	PRECAST CONC BUMPERS	—											
2628.4	4 FT		EA	12.00	.33								
.6	6 FT		EA	24.00	.41								
2628.12	12 FT		EA	36.00	.50								
	ROADS & PAVING S/T FM SHT 9							441740			4186		
2600	TOTAL ROADS & PAVING							445240			4712		

CES-2000-0 (4/81)

HARTSVILLE
AREA #7
BASE CASE

PARSONS

ESTIMATE WORKSHEET

M.T.O. BY ENGR. PRICED BY RUF DATE AUG 1985 SHEET 11 OF ____

JOB NO.: 6440-11 CLIENT: DOE/PNL TYPE OF ESTIMATE ROM 35% CHECKED BY

UNIT/AREA MRS FACILITY

DESCRIPTION SITE LOCATION -

CAPACITY AREA -

ACCNT	DESCRIPTION	QUANTITY	UNIT	COST OR M/HRS PER UNIT MATL	M/H	LABS	MATERIAL EXPENSE	SUBCONTRACT M/HRS	SUBCONTRACT DOLLARS	LABOR M/HRS	LABOR DOLLARS	TOTAL DOLLARS
DIV 2	SITE WORK											
2800	LANDSCAPING		SY	9.45	.28							
2801	LANDSCAPING & IRRIGATION		SY	10.00	.36							
	GRASS SEEDING		SY	0.08	.001							
2850	RAILROAD WORK											
2851	RAIL - SINGLE	64800	LF	10.75	.42		696,600			27216		
2852	TIES	19440	EA	16.35	.53		317,840			10302		
2853	BALLAST	72500	CY	13.95	.06		313,880			1350		
2854	SUB BALLAST	9563	CY	13.19	.05		125,560			478		
2855	SUB GRADE PREP 6"	86400	SY	.36	.01		31,100			864		
2856	SWITCH	2	EA	12110	96.0		24,220			192		
2857	RAIL CROSSING (RAIL)	5	EA	113.00	132.0		56,500			660		
2858	RAIL CROSSING (ROAD) 9'-0 WIDTH	72	LF	30.00	3.0		2,160			216		
2859	WHEEL STOPS		EA	205.00	8.0							
2852.1	RAILROAD BRIDGE (16' WIDE)	300	LF	1000.	5.0		300,000			1500		
2852.2	REFURBISH EXISTING ABANDONED RAILROAD TRACKS	13	MI	50K	2000		650,000			26000		
2800	TOTAL LANDSCAPING						2,517,860			68779		

CES-2000-0 (4/81)

PARSONS

HARTSVILLE BASE

ESTIMATE WORKSHEET

M.T.O. BY JT . PRICED BY JT . DATE AUG-15 SHEET 1 OF ____

JOB NO.: 6440-11 CLIENT: PNL-DOE TYPE OF ESTIMATE ROM CHECKED BY Rem/JT

UNIT/AREA / DESCRIPTION / CAPACITY / ACCNT		QUANTITY	UNIT	COST OR M/HRS PER UNIT			MATERIAL EXPENSE	SUBCONTRACT		LABOR		TOTAL DOLLARS
				MATL	M/H	LAB $		M/HRS	DOLLARS	M/HRS	DOLLARS	
	ELECTRIC. AREA-7											
	SUMMARY											
16350	HIGH PWR OVERHED LINE						2,786,500			48,490		
16700	PHONE TRUNK LINES						147,000	✓		2490	✓	
							2,933,500			50,930		
						LSC	2934000					

CES-2000-0 (4/81)

PARSONS

HARTSVILLE BASE

ESTIMATE WORKSHEET

M.T.O. BY J.J. PRICED BY J.J. DATE AUG-15 SHEET 2 OF 4

JOB NO.: 6440-11 CLIENT: PNL-DOE TYPE OF ESTIMATE ROM CHECKED BY Rem/RJ

UNIT/AREA BASE HARTSVILLE

DESCRIPTION

CAPACITY MRS FACILITY

ACCNT		QUANTITY	UNIT	COST OR M/HRS PER UNIT MATL	M/H	LAB $	MATERIAL EXPENSE	SUBCONTRACT M/HRS	SUBCONTRACT DOLLARS	LABOR M/HRS	LABOR DOLLARS	TOTAL DOLLARS
	ELECTERICAL AREA - 7											
16300	HIGH POWER OVERHEAD LINE & DUCT BANK											
	SUBTOTAL SH # 2						2,736,100			47,230		
	3						50,400			1260		
	TOTAL						2,786,500			48,490		

CES-2000-0 (4/81)

HARTSVILLE BASE

PARSONS
ESTIMATE WORKSHEET

M.T.O. BY J.J. PRICED BY J.J. DATE AUG-15 SHEET 3 OF —
JOB NO.: 6440-11 CLIENT: PNL-DOE TYPE OF ESTIMATE ROM CHECKED BY MJ/BJ
UNIT/AREA 161 KVA O.HEAD POWER LINE
DESCRIPTION BASE HARTSVILLE
CAPACITY MOS FACILITY

ACCNT		QUANTITY	UNIT	COST OR M/HRS PER UNIT MATL	M/H	LAB$	MATERIAL EXPENSE	SUBCONTRACT M/HRS	SUBCONTRACT DOLLARS	LABOR M/HRS	LABOR DOLLARS	TOTAL DOLLARS
	ELECTRICAL AREA-7											
16300												
	TAP TO EXIST POWER LINE	1	LS	5000	60		5000			60		
	52,800 ÷ 800 = 66+1 TRANSM. TOWER	67	E	5000	160		335,000			10720		
	INSULATORS 54 E PER TOWER x67	3618	E	21.15	.15		76,520			543		
	CABLE 52,800x9x1.15 500MCM	546500	LF	3.98	.05		2,175,070			27,325		
	#2 GRND 52,800x2x1.15	121,500	LF	.666	.05		80,920			6075		
	TRANS. TOWER FOUNDATIONS											
	67x4x1.85 C.Y = 496x20% PIER	100	C.Y	234	7		23400			700		
	496x80% PAD	396	C.Y	72	3		28,510			1188		
	SUSPENSION CLAMPS. 67x3	201	E	8.18	.20		1,650			40		
	STRAIN CLAMP OHIO BRASS	201	E	6.10	.20		1,230			40		
	TRIANGLE CABLE SPACERS 52,800x1.15 ÷ 100 =	610	E	10	.33		6100			201		
	GUY ASSEMBLY	4	E	675	77		2700			308		
	TESTING	1	LS	-	-		-			30		
							2,736,100			47,230		

REFERENCE BACK-UP

CES-2000-0 (4/81)

HARTSVILLE BASE

PARSONS
ESTIMATE WORKSHEET

M.T.O. BY J.J. PRICED BY J.J. DATE AUG-15 SHEET 4 OF 4

JOB NO.: 6440-11 CLIENT: PNL-DOE TYPE OF ESTIMATE ROM CHECKED BY JMG/RJ

UNIT/AREA 69 KVA O.HEAD POWER LINE
DESCRIPTION BASE HARTSVILLE
CAPACITY MRS FACILITY

ACCNT		QUANTITY	UNIT	COST OR M/HRS PER UNIT			MATERIAL EXPENSE	SUBCONTRACT		LABOR		TOTAL DOLLARS
				MATL	M/H	LAB $		M/HRS	DOLLARS	M/HRS	DOLLARS	
	ELECTRICAL AREA-7											
16300												
	TAP TO EXIST POWER LINE	1	E	5000	60		5000			60		
	1500 ÷ 800 = 2+1 = TRANS. TOWER	3	E	5000	160		15000			480		
	INSULATORS 54X3 =	162	E	21.15	.15		3430			24		
	CABLE 1500 X 3 X 1.15 500 MCM.	5200	LF	3.98	.05		20,700			260		
	#2 GRND 1500 X 2 X 1.15	3500	LF	.66	.05		2,330			175		
	TRANSM. TOWER FOUND.											
	3 X 4 X 1.85 = 22.2 X 20% PIER	5	CY	234	7		1170			35		
	22.2 X 80% PAD	18	CY	72	3		1300			54		
	GUY ASSEMBLY	2	E	670	77		1340			154		
	SUSPENSION CLAMP 3 X 3	9	E	8.15	.2		70			2		
	STRAIN CLAMPS 3 X 3	9	E	6.10	.2		60			2		
	TESTING						-			14		
							50,400			1260		

REFERENCE BACK-UP

CES-2000-0 (4/81)

HARTSVILLE BASE

PARSONS

ESTIMATE WORKSHEET

M.T.O. BY JJ | PRICED BY JJ | DATE AUG-15 | SHEET 5 OF

JOB NO.: 6440-11 | CLIENT: PNL-DOE | TYPE OF ESTIMATE ROM | CHECKED BY [illegible]

UNIT/AREA MRS FACILITY

DESCRIPTION

CAPACITY

ACCNT		QUANTITY	UNIT	COST OR M/HRS PER UNIT MATL	M/H	LAB $	MATERIAL EXPENSE	SUBCONTRACT M/HRS	SUBCONTRACT DOLLARS	LABOR M/HRS	LABOR DOLLARS	TOTAL DOLLARS
	ELECTRICAL AREA-7											
16100	SUMMARY						147,000			2440		
	(FROM CLINCHRIVER ESTIM)											

CES-2000-0 (4/81)

HARTSVILLE SITE
ALTERNATE CONCEPT

COST ESTIMATE SUMMARY

ES-1(1-79)

PREPARED BY:

MRS Facility Hartsville Alternate Case (Drywells)

PROJECT COST ESTIMATE SUMMARY

TITLE	PREPARED FOR	PREPARED BY	CHECKED BY	PROJECT NO.	DATE
Project Cost Estimate	PNL/DOE	V. Mesec	CCE	6440-11	August 85

	TITLE I	TITLE II	TITLE III	($ TOTAL X 1000)
A. ENGINEERING				
ARCHITECT - ENGINEER	NA	49,500	23,600	73,100
OTHER ENGINEERING - SPECIFY	NA	4,800	0	4,800
SUBTOTAL	NA	54,300	23,600	77,900
ESCALATION I: NA % II: NA % III: NA %	NA	0	0	0
CONTINGENCY I: NA % II: 20 % III: 20 %	NA	10,700	4,400	15,100
SUBTOTAL ENGINEERING	NA	65,000	28,000	93,000
OPERATING CONTRACTOR				0
TOTAL A				93,000
B. CONSTRUCTION				
(1) IMPROVEMENTS TO LAND				60,748
(2) BUILDINGS				0
BUILDING NO. R&H Bldg 709,025 SQ. FT.				337,300
BUILDING NO. Suppt. Bldgs SQ. FT.				35,248
(3) OTHER (DETACHED) STRUCTURES CHTRU Bldg.				1,163
(4) SPECIAL FACILITIES AND INSTAL. Storage Area				83,140
(5) UTILITIES				3,360
(6) OPERATING EXPENSE CHARGES NA				0
(7) CONTRACT ADMINISTRATION NA				0
(8) Construction Management				45,240
SUBTOTAL				566,199
ESCALATION NA % @ NA YEARS				0
CONTINGENCY Varies %				113,641
TOTAL B				679,840
C. STANDARD EQUIPMENT				0
TOTAL C				0
D. TRANSFERRED CAPITAL PROP. OR EQUIPMENT NA				0
CURRENT ENR. COST INDEX BUILDING _____ CONSTRUCTION _____			TOTAL PROJECT ESTIMATE	$ 772,840

PROPOSED FUNDS ALLOCATION

FUNDS PURPOSE	OPER. CONTR.	DOE-RL
ENGINEERING		
PROCUREMENT		
CONSTRUCTION		
ESCALATION		
CONTINGENCY		
TCP/TCE		
WASH. STATE TAX		
TOTAL		

TYPE OF ESTIMATE:

APPROVALS	DATE
ESTIMATING	
PROJECT MANAGER	
CLIENT ENGINEER	

REMARKS:

(1) All cost 2nd quarter 1985.
(2) 85% productivity on labor is included in the estimate. Productivity factor furnished by DOE Oak Ridge.
(3) Escalation not included in estimate.
(4) NA = Not applicable

ESTIMATE SHEET ___ OF ___

PARSONS

HARTSVILLE ALTERNATE CASE

ESTIMATE WORKSHEET

M.T.O. BY — PRICED BY DATE AUG. 85 SHEET ____ OF ____

JOB NO.: 6440-11 CLIENT: DOE/PMC TYPE OF ESTIMATE ROM CHECKED BY

UNIT/AREA

DESCRIPTION MRS FACILITY

CAPACITY

ACCNT		QUANTITY	UNIT	COST OR M/HRS PER UNIT MATL	M/H	LAB $	MATERIAL EXPENSE	SUBCONTRACT M/HRS	SUBCONTRACT DOLLARS	LABOR M/HRS	LABOR DOLLARS	TOTAL DOLLARS
	CONTINGENCY FACTORS											
	R&W BUILDING (AREAS 1, 2, 3 & 4)	25%		337	300	K						84 320 000
	STORAGE (AREA 6)	15%		83	140	K						12 471 000
	SUPPORT BUILDING (PART AREA 5)			35	248	K						
	CAFTRU "			1	163	K						
	UTILITIES "			8	360	K						
	IMPROVEMENTS TO LAND (" " AREA 7)			60	748	K						
		10%		100	519	K						10 052 000
	SUB-TOTAL											106 852 000
	CONTRUCTION MANAGEMENT	15%		45	240	K						6 786 000
	TOTAL											113 689 000
	ROUND OFF PROJECT USE											+2 000
												113 691 000

CES-2000-0 (4/81)

PARSONS

HARTSVILLE - ALTERNATE CASE

ESTIMATE WORKSHEET

M.T.O. BY | PRICED BY | DATE AUG. 85 | SHEET ____ OF ____

JOB NO.: 6440-11 | CLIENT: TVA/PTL | TYPE OF ESTIMATE ROM | CHECKED BY

UNIT/AREA | DESCRIPTION MRS FACILITY | CAPACITY

ACCNT		QUANTITY	UNIT	COST OR M/HRS PER UNIT MATL	M/H	LAB $	MATERIAL EXPENSE	SUBCONTRACT M/HRS	SUBCONTRACT DOLLARS	LABOR M/HRS	LABOR DOLLARS	TOTAL DOLLARS
	TOTAL SUMMARY BY AREAS											
	R & H BUILDING - AREA 1											121 124 000
	" " 2											23 261 000
	" " 3											161 004 000
	" " 4											31 811 000
	R & H											337 300 000
	SUPPORT BUILDING (PART OF AREA 5)			26922 +	PRODUCTIVITY		(942) + OH & P		(7884)			35 248 000
	CHTRU "			893			(26)		(244)			1 163 000
	STORAGE (AREA 6)											83 140 000
	UTILITIES (PART OF AREA 5)			2512			(444)		(704)			3 360 000
	AREA 5 SITE											47 440 000
	" 7 "											13 308 000
	TOTAL IMPROVE TO LAND											60 748 000
	TOTAL											520 959 000

CES-2000-0 (4/81)

BY VIVIESEC THE RALPH M. PARSONS COMPANY

SUBJECT Summary Sheet MATL. & LABOR DATE 16. '85

JOB NO. 6490-11

HARTSVILLE - ALTERNATE CASE

DIVISION	TITLE	AREA #1 TOTAL M&L $ (X 1000)	AREA #2 TOTAL M&L $ (X 1000)	AREA #3 TOTAL M&L $ (X 1000)	AREA #4 TOTAL M&L $ (X 1000)	AREA #5 TOTAL M&L $ (X 1000)	AREA #6 TOTAL M&L $ (X 1000)	AREA #7 TOTAL M&L $ (X 1000)	TOTAL M&L $ (X 1000)	CONSTR. MGMT	TOTAL CONSTR.
2	SITE WORK	676	7	666	49	28915	50869	6214	87396		
3	CONCRETE	12882	4143	28004	5982				51011		
4	MASONRY				34				34		
5	METALS	4955	4650	1195	3036				13836		
6	WOOD / PLASTICS			7	9				16		
7	THERMAL/MOIST PROTECTION			940	1592				2532		
8	DOORS / WINDOWS	3921		4475	278				8674		
9	FINISHES		215	1920	605				2740		
10	SPECIALTIES			11	189				200		
11	EQUIPMENT	61871	2262	20540	1087	21	7377		93158		
12	FURNISHINGS				244				244		
13	SPECIAL CONSTRUCTION			3574	1035		38		4647		
14	CONVEYING SYSTEMS			1013	708				1721		
15	MECHANICAL	4829	4659	37631	5446				52565		
16	ELECTRICAL	2959	1256	9176	2933	6815	5107	3843	32089		
17	INSTRUMENTATION	1560		11525		234			13319		
	S/TOTAL	93653	17192	120677	23227	35985	63391	10057	364182		
	PRODUCTIVITY ON LABOR	1592	875	4829	1405	2629	2333	463	14126		
	SHIFT DIFFERENTIAL	584	321	1770	515	-			3190		
	S/TOTAL	95829	18388	127276	25147	38614	65724	10520	381498		
	CNTRU FACILITY					893			893		
	Support FACILITIES					26922			26922		
	UTILITIES					2512			2512		
	TOTAL DIRECT COST	95829	18388	127276	25147	68941	65724	10520	411825		
	CONTRACTORS OH & PROFIT	25395	4873	33728	6664	18270	17416	2788	109134		
	S/TOTAL	121224	23261	161004	31811	87211	83140	13308	520959	45240	566199
	CONTINGENCY	30308	5816	40252	7954	8722	12471	1331	106854	6787	113641
	TOTAL	151532	29077	201256	39765	95933	95611	14639	627813	52027	679840

BY [illegible] DATE UG. 85

SUBJECT Summary Sheet MATERIAL JOB NO. 6490-11

HARTSVILLE - ALTERNATE CASE

DIVISION	TITLE	AREA #1 MATL # (X1000)	AREA #2 MATL # (X1000)	AREA #3 MATL # (X1000)	AREA #4 MATL # (X1000)	AREA #5 MATL # (X1000)	AREA #6 MATL # (X1000)	AREA #7 MATL # (X1000)	TOTAL MATL # (X1000)
2	SITE WORK	600	5	585	39	21825	37675	4499	67228
3	CONCRETE	9287	3011	19602	3344				35244
4	MASONRY				13				13
5	METALS	3585	3444	766	2264				9999
6	WOOD / PLASTICS			1	2				3
7	THERMAL/MOIST PROTECTION			707	1161				1868
8	DOORS / WINDOWS	3792		4331	243				8366
9	FINISHES		117	965	293				1375
10	SPECIALTIES			10	161				171
11	EQUIPMENT	60497	2155	19519	972	21	7339		90503
12	FURNISHINGS				239				239
13	SPECIAL CONSTRUCTION			3430	856		24		4310
14	CONVEYING SYSTEMS			837	657				1494
15	MECHANICAL	2982	2373	26706	3197				35258
16	ELECTRICAL	2539	1126	5704	1826	5344	3131	2934	22604
17	INSTRUMENTATION	1407		10150		199			11756
	S/TOTAL	84629	12231	93313	15267	27389	50169	7433	290431
	CHTRU FACILITY					743			743
	SUPPORT FACILITIES					21584			21584
	UTILITIES					1699			1699
	TOTAL DIRECT COST	84629	12231	93313	15267	51415	50169	7433	314457
	CONTRACTORS OH-PROFIT.								
	S/TOTAL								
	CONTINGENCY								
	TOTAL								

BY SEC DATE VG. 85

SUBJECT Summary Sheet LABOR (CONSTRUCTION) JOB NO. 6490-11

HARTSVILLE - ALTERNATE CASE

D/H

DIVISION	TITLE	AREA #1 LABOR $ (x1000)	AREA #2 LABOR $ (x1000)	AREA #3 LABOR $ (x1000)	AREA #4 LABOR $ (x1000)	AREA #5 LABOR $ (x1000)	AREA #6 LABOR $ (x1000)	AREA #7 LABOR $ (x1000)	TOTAL LABOR $ (x1000)
2	SITE WORK	76	2	81	10	7090	11194	1715	20168
3	CONCRETE	3595	1132	8402	2638		—		15767
4	MASONRY				21				21
5	METALS	1430	1206	429	772				3837
6	WOOD / PLASTICS			6	7				13
7	THERMAL/MOIST PROTECTION			233	431				664
8	DOORS / WINDOWS	129		144	35				308
9	FINISHES		98	955	312				1365
10	SPECIALTIES			1	28				29
11	EQUIPMENT	1374	107	1021	115		38		2655
12	FURNISHINGS				5				5
13	SPECIAL CONSTRUCTION			144	179		14		337
14	CONVEYING SYSTEMS			176	51				227
15	MECHANICAL	1847	2286	10925	2249				17307
16	ELECTRICAL	420	130	3472	1107	1471	1976	909	9486
17	INSTRUMENTATION	153		1375		35			1563
	S/TOTAL	9024	4961	27364	7960	8596	13222	2624	73751
PRODUCTIVITY ON LABOR		1592	875	4829	1405	2629	2333	463	14126
SHIFT DIFFERENTIAL		584	321	1770	515	-			3190
	S/TOTAL	11200	6157	33963	9880	11225	15555	3087	91067
CNTRL FACILITY						150			150
SUPPORT FACILITIES						5338			5338
UTILITIES						813			813
	TOTAL DIRECT COST	11200	6157	33963	9880	17526	15555	3087	97368
CONTRACTORS ON PROFIT									
	S/TOTAL								
CONTINGENCY									
	TOTAL								

BY ESEC DATE 06.05

SUBJECT: Summary Sheet CONSTRUCTION LABOR MAN HOURS JOB NO. 6990-11

DH

HARTSVILLE - ALTERNATE CASE

DIVISION	TITLE	AREA #1 Labor MH	AREA #2 Labor MH	AREA #3 Labor MH	AREA #4 Labor MH	AREA #5 Labor MH	AREA #6 Labor MH	AREA #7 Labor MH	TOTAL Labor MH.
2	SITE WORK	4711	106	5031	896	440885	496148	106649	1254126
3	CONCRETE	233887	73636	546643	171027		—		1025773
4	MASONRY				1301				1301
5	METALS	77594	64945	23262	41840				208071
6	WOOD / PLASTICS			346	397				743
7	THERM./MOIST PROTECTION			14121	26144				40265
8	DOORS / WINDOWS	7824		8707	2143				18674
9	FINISHES		6008	58490	19125				83623
10	SPECIALTIES			35	1616				1651
11	EQUIPMENT	73300	5126	54484	619	11	2010		135609
12	FURNISHINGS				328				328
13	SPECIAL CONSTRUCTION			7690	9550		760		18000
14	CONVEYING SYSTEMS			9415	2695				12110
15	MECHANICAL	98543	122806	582957	119990				923496
16	ELECTRICAL	23533	7297	154520	61993	82377	10680	50430	531270
17	INSTRUMENTATION	8300		76812		1925			85037
	S/TOTAL	527672	280113	1580513	465464	525198	509606	157579	4346145
	CNTRL FACILITY					9086			9086
	SUPPORT FACILITIES					323507			323507
	UTILITIES					43381			43381
	TOTAL DIRECT MHS	527672	280113	1580513	465464	901172	509606	157579	4732119
	PRODUCTIVITY	99119	49935	278914	82141	159031	142872	27808	833920
	TOTAL MAN HOURS CONSTRUCTION	620791	330048	1859427	547605	1060203	952478	185387	5565839

PARSONS

HARTSVILLE ALTERNATE CASE ESTIMATE WORKSHEET

M.T.O. BY V. MESEC | PRICED BY V. MESEC | DATE AUG. 85 | SHEET ____ OF ____

JOB NO. 6440-11 | CLIENT: DOE/PHL | TYPE OF ESTIMATE ROM. | CHECKED BY DJ

UNIT/AREA MRS FACILITY

DESCRIPTION REF. BLDG.

CAPACITY

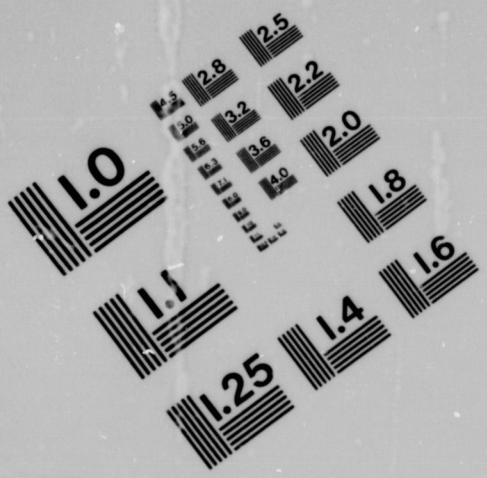
ACCNT		QUANTITY	UNIT	COST OR M/HRS PER UNIT MATL	M/H	LABS	MATERIAL EXPENSE	SUBCONTRACT M/HRS	SUBCONTRACT DOLLARS	LABOR M/HRS	LABOR DOLLARS	TOTAL DOLLARS
	SUMMARY AREA #1 FROM CLINCH RIVER CASE											121 724 000
	SUMMARY AREA #2											23 261 000
	SUMMARY AREA #3											161 004 000
	SUMMARY AREA #4											31 811 000
	TOTAL AREAS 1, 2, 3 & 4											337 300 000

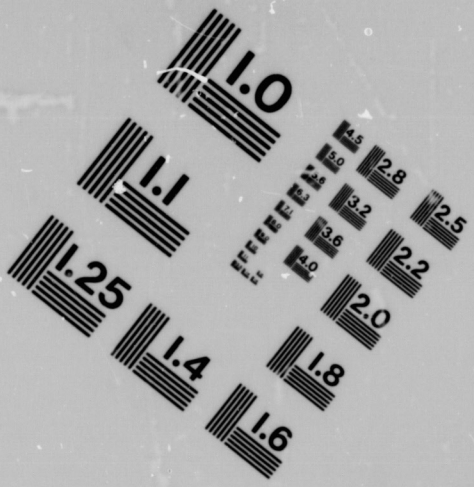
CES-2000-0 (4/81)

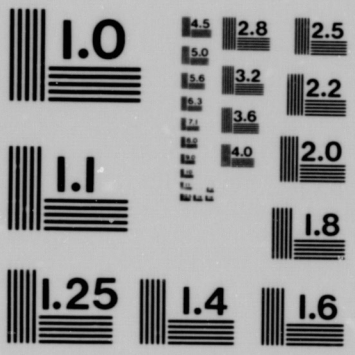
CONTINUED

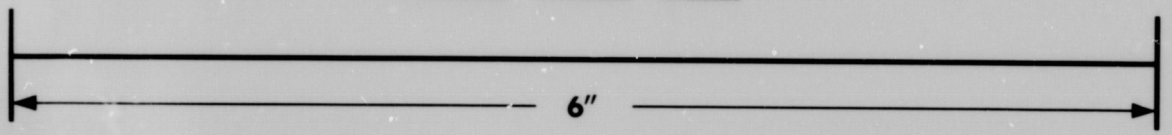
B INTEGRAL MONITORED RETRIEVABLE STORAGE (MRS) FACILITY. CONCEPTUAL DESIGN REPORT - VOLUME V (BOOK X) COST ESTIMATE. FICHE 662

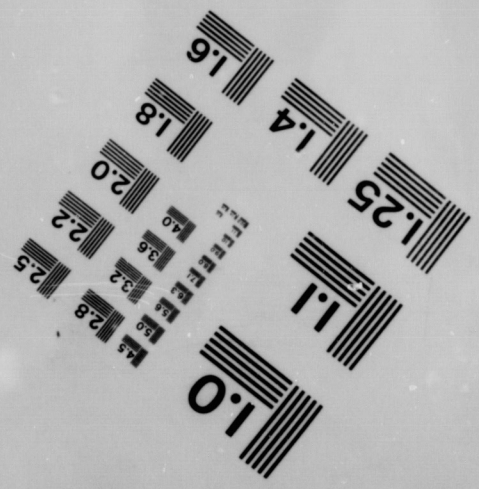
RESOLUTION TEST
TARGET (NE-1)

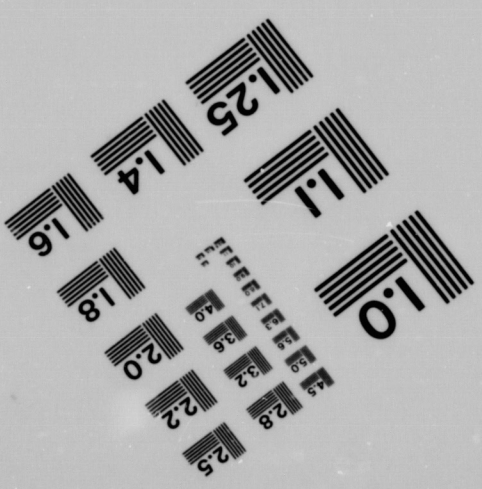












COST ESTIMATE SUMMARY
AREA 1, R&H BUILDING

PARSONS

HARTSVILLE ALTERNATE CASE ESTIMATE WORKSHEET

M.T.O. BY ENGINEERING PRICED BY V. MESEC DATE Aug. 85 SHEET ___ OF ___

JOB NO.: 6440-11 CLIENT: TYPE OF ESTIMATE ROM. CHECKED BY [illegible]

UNIT/AREA MRS FACILITY

DESCRIPTION R&H BLDG.

CAPACITY

ACCNT		QUANTITY	UNIT	COST OR M/HRS PER UNIT MATL	M/H	LAB $	MATERIAL EXPENSE	SUBCONTRACT M/HRS	SUBCONTRACT DOLLARS	LABOR M/HRS	LABOR DOLLARS	TOTAL DOLLARS
	SUMMARY AREA #1											
	SUMMARY BY DIVISIONS						84 689 000			521672	9 024 000	93 653 000
	LABOR PRODUCTIVITY	85 %				17.10				93119	1 592 000	1 592 000
	S/TOTAL						84 689 000			620791	10 616 000	95 245 000
	SHIFT DIFFERENTIAL ($10,616,000/2 × 11%) -										584 000	584 000
	S/TOTAL						84 689 000			620791	11 200 000	95 829 000
	CONTRACTORS O&P - PROFIT	22.5 %										25 395 000
	TOTAL AREA #1 w/out CONTINGENCY											121 224 000

CES-2000-0 (4/81)

1-1/2

PARSONS

HARTSVILLE ALTERNATE CASE ESTIMATE WORKSHEET

M.T.O. BY ENGINEERING PRICED BY V. MESEC DATE AUG. 85 SHEET ____ OF ____

JOB NO.: 6440-11 CLIENT DOE/PNL TYPE OF ESTIMATE CDM. CHECKED BY [illegible]

UNIT/AREA M2S FACILITY

DESCRIPTION R & H BUILDING

CAPACITY

ACCNT	Summary AREA (S) #1	QUANTITY	UNIT	COST OR M/HRS PER UNIT MATL	M/H	LAB $	MATERIAL EXPENSE	SUBCONTRACT M/HRS	SUBCONTRACT DOLLARS	LABOR M/HRS	LABOR DOLLARS	TOTAL DOLLARS
DIV 2	SITE WORK					16.84	600 000			4711	76 000	676 000
3	CONCRETE					15.11	9 387 000			233887	3 595 000	12 882 000
4	MASONARY					16.30	0			0	0	0
5	METALS					18.44	3 525 000			77374	1 430 000	4 955 000
6	WOOD & PLASTICS					16.30	0			0	0	0
7	THERMAL MOIST. PROTECTION					16.30	0			0	0	0
8	DOORS & WINDOWS					16.30	3 792 000			7824	129 000	3 921 000
9	FINISHES					16.30	0			0	0	0
10	SPECIALTIES					17.62	0			0	0	0
11	EQUIPMENT					18.71	40 447 000			73300	1 374 000	61 871 000
12	FURNISHINGS					16.30	0			0	0	0
13	SPECIAL CONSTRUCTION					18.44	0			0	0	0
14	CONVEYING SYSTEMS					18.44	0			0	0	0
15	MECHANICAL SYSTEMS					18.44	2 982 000			98543	1 847 000	4 829 000
16	ELECTRICAL					17.55	2 539 000			23633	420 000	2 959 000
17	INSTRUMENTATION					18.32	1 407 000			8300	153 000	1 560 000
	TOTAL AREA #1						84 629 000			527672	9 102 000	93 653 000

CES-2000-0 (4/81)

COST ESTIMATE SUMMARY
AREA 2, R&H BUILDING

HARTSVILLE ALTERNATE CASE

PARSONS

ESTIMATE WORKSHEET

M.T.O. BY ENGINEERING PRICED BY VM DATE AUG. 85 SHEET ____ OF ____

JOB NO.: 6440-11 CLIENT: DOE/PNL TYPE OF ESTIMATE ROM CHECKED BY Rom/15/RW

UNIT/AREA MES FACILITY

DESCRIPTION R&H. BLDG

CAPACITY

ACCNT		QUANTITY	UNIT	COST OR M/HRS PER UNIT MATL	M/H	LAB $	MATERIAL EXPENSE	SUBCONTRACT M/HRS	SUBCONTRACT DOLLARS	LABOR M/HRS	LABOR DOLLARS	TOTAL DOLLARS
	SUMMARY AREA #2											
	SUMMARY BY DIVISIONS					17.71	12 231 000			280113	4 961 000	17 192 000
	LABOR PRODUCTIVITY	85 %								49035	875 000	875 000
	S/TOTAL						12 231 000			329548	5 836 000	18 067 000
	SHIFT DIFFERENTIAL ($5836000/2 x 11%) =										321 000	321 000
	S/TOTAL						12 231 000			329548	6 157 000	18 388 000
	CONTRACTORS OHD-PROFIT	26.5 %										4 873 000
	TOTAL AREA #2 W/out CONTINGENCY											23 261 000

CES-2000-0 (4/81)

PARSONS

HABTSVILLE ALTGWATE CASE

ESTIMATE WORKSHEET

M.T.O. BY ENGINEERING PRICED BY V. MESEC DATE AUG. 85 SHEET ____ OF ____

JOB NO.: 6440-11 CLIENT DOE/PNC TYPE OF ESTIMATE ROM. CHECKED BY [illegible]

UNIT/AREA MRS FACILITY

DESCRIPTION R&H BLDG

CAPACITY

ACCNT	Summary Area (s) #2	QUANTITY	UNIT	COST OR M/HRS PER UNIT MATL	M/H	LAB $	MATERIAL EXPENSE	SUBCONTRACT M/HRS	SUBCONTRACT DOLLARS	LABOR M/HRS	LABOR DOLLARS	TOTAL DOLLARS
DIV 2	SITE WORK					16.00	5000			106.	2000	7000
3	CONCRETE	15880	CY			15.37	3011000			73636	1432000	4443000
4	MASONRY					16.50	0			0	0	0
5	METALS	1290	TN			18.93	344000			63395	1206000	1550000
6	WOOD & PLASTICS					16.50	0			0	0	0
7	THERMAL MOIST. PROTECTION					16.50	0			0	0	0
8	DOORS & WINDOWS					16.50	0			0	0	0
9	FINISHES					16.50	117000			6008	98000	215000
10	SPECIALTIES					17.00	0			0	0	0
11	EQUIPMENT					18.44	2166000			5765	107000	2262000
12	FURNISHINGS					16.50	0			0	0	0
13	SPECIAL CONSTRUCTION					18.00	0			0	0	0
14	CONVEYING SYSTEMS					18.44	0			0	0	0
15	MECHANICAL SYSTEMS					18.44	2373000			121006	2286000	4659000
16	ELECTRICAL					17.05	1126000			7237	130000	1256000
17	INSTRUMENTATION					18.50	0			0	0	0
	TOTAL AREA 2						12231000			280113	4961000	17192000

CES-2000-0 (4/81)

COST ESTIMATE SUMMARY
AREA 3, R&H BUILDING

HARTSVILLE ALTERNATE CASE

PARSONS

ESTIMATE WORKSHEET

M.T.O. BY ENGINEERING PRICED BY V. NIESEC DATE AUG 85 SHEET ____ OF ____

JOB NO.: 6440-11 CLIENT: DOE/PNL TYPE OF ESTIMATE ROM. CHECKED BY LUF LRS/RW

UNIT/AREA MRS FACILITY

DESCRIPTION R&H. BLDG.

CAPACITY

ACCNT		QUANTITY	UNIT	COST OR M/HRS PER UNIT MATL	M/H	LAB $	MATERIAL EXPENSE	SUBCONTRACT M/HRS	SUBCONTRACT DOLLARS	LABOR M/HRS	LABOR DOLLARS	TOTAL DOLLARS
	SUMMARY AREA # 3											
	SUMMARY BY DIVISIONS					17.31	93 313 000			1580513	27 364 000	120 677 000
	LABOR PRODUCTIVITY	85	%							278914	4 829 000	4 829 000
	S/TOTAL					17.31	93 313 000			1859427	32 193 000	125 506 000
	SHIFT DIFFERENTIAL (32193000/2 x 11%)										1 770 000	1 770 000
	S/TOTAL										33 963 000	127 276 000
	CONTRACTORS OHD PROFIT	26.5	%									33 728 000
	TOTAL COST AREA # 3 W/OUT CONTINGENCY											161 004 000

CES-2000-0 (4/81)

PARSONS

HARTSVILLE ALTERNATE CASE

ESTIMATE WORKSHEET

M.T.O. BY ENGINEERING PRICED BY V. MESEC DATE AUG. 85 SHEET ____ OF ____

JOB NO.: 6440-11 CLIENT: DOE/PNL TYPE OF ESTIMATE ROM. CHECKED BY JS

UNIT/AREA MRS FACILITY

DESCRIPTION R&H BLDG

CAPACITY

ACCNT	SUMMARY AREA(S) #3	QUANTITY	UNIT	COST OR M/HRS PER UNIT MATL	M/H	LAB $	MATERIAL EXPENSE	SUBCONTRACT M/HRS	SUBCONTRACT DOLLARS	LABOR M/HRS	LABOR DOLLARS	TOTAL DOLLARS
DIV 2	SITE WORK					16.08	585 000			5031	81 000	666 000
3	CONCRETE	96941	CY			15.39	19 602 000			546643	8 402 000	28 004 000
4	MASONARY					16.50	0			0	0	0
5	METALS	165	TN			18.44	766 000			23262	429 000	1 195 000
6	WOOD & PLASTICS					16.50	1 000			346	6 000	7 000
7	THERMAL MOIST. PROTECTION					16.50	707 000			14121	233 000	940 000
8	DOORS & WINDOWS					16.50	4 331 000			8707	144 000	4 475 000
9	FINISHES					16.32	965 000			58490	955 000	1 920 000
10	SPECIALTIES					17.81	10 000			35	1 000	11 000
11	EQUIPMENT					18.74	19 519 000			54484	1 021 000	20 540 000
12	FURNISHINGS					16.50	0			0	0	0
13	SPECIAL CONSTRUCTION					18.74	3 430 000			7690	144 000	3 574 000
14	CONVEYING SYSTEMS					18.74	837 000			9415	176 000	1 013 000
15	MECHANICAL SYSTEMS					18.74	26 706 000			582957	10 925 000	37 631 000
16	ELECTRICAL					17.85	5 704 000			194520	3 472 000	9 176 000
17	INSTRUMENTATION	1	LOT			18.30	10 150 000			74812	1 375 000	11 525 000
	TOTAL						93 313 000			1580513	27 364 000	120 677 000

CES-2000-0 (4/81)

COST ESTIMATE SUMMARY
AREA 4, R&H BUILDING

HARTSVILLE ALTERNATE CASE

PARSONS

ESTIMATE WORKSHEET

M.T.O. BY ENGINEERING PRICED BY V. MESEC DATE AUG. 85 SHEET ____ OF ____

JOB NO.: 6440-11 CLIENT: DOE/PNL. TYPE OF ESTIMATE ROM CHECKED BY R.S. 16

UNIT/AREA MRS FACILITY

DESCRIPTION R&H. BLDG.

CAPACITY

ACCNT		QUANTITY	UNIT	COST OR M/HRS PER UNIT MATL	M/H	LAB $	MATERIAL EXPENSE	SUBCONTRACT M/HRS	SUBCONTRACT DOLLARS	LABOR M/HRS	LABOR DOLLARS	TOTAL DOLLARS
	SUMMARY AREA # 4											
	SUMMARY BY DIVISIONS						15 267 000			465464	7 960 000	23 227 000
	LABOR PRODUCTIVITY (BASE HOURS)			85%		17.10				82141	1 405 000	1 405 000
	S/TOTAL						15 267 000			547605	9 365 000	24 632 000
	SHIFT DIFFERENTIAL ($9365000/2 X 11%) =										515 000	515 000
	S/TOTAL						15 267 000			547605	9 880 000	25 147 000
	CONTRACTORS OHD/PROFIT	26.5%										6 664 000
	TOTAL COST AREA # 4 W/OUT CONTINGENCY											31 811 000

CES-2000-0 (4/81)

PARSONS

ESTIMATE WORKSHEET

M.T.O. BY ENGINEERING PRICED BY V. MESEC DATE AUG. 85 SHEET ____ OF ____

JOB NO.: 6440-11 CLIENT DOE/PNL TYPE OF ESTIMATE ROM. CHECKED BY [illegible]

UNIT/AREA MRS FACILITY

DESCRIPTION R&H BLDG

CAPACITY

ACCNT	Summary Area(s) #4	QUANTITY	UNIT	COST OR M/HRS PER UNIT MATL	M/H	LAB $	MATERIAL EXPENSE	SUBCONTRACT M/HRS	SUBCONTRACT DOLLARS	LABOR M/HRS	LABOR DOLLARS	TOTAL DOLLARS
DIV 2	SITE WORK					16.08	39 000			596	10 000	49 000
3	CONCRETE	2286	CY			153.77	3 344 000			171627	2 638 000	5 982 000
4	MASONARY					16.50	13 000			1301	21 000	34 000
5	METALS	1553	TN			18.00	2 264 000			41540	772 000	3 036 000
6	WOOD & PLASTICS					16.50	2 000			397	7 000	9 000
7	THERMAL MOIST. PROTECTION					16.50	161 000			26144	431 000	1 592 000
8	DOORS & WINDOWS					16.50	243 000			2493	35 000	278 000
9	FINISHES					16.50	293 000			19125	312 000	605 000
10	SPECIALTIES					17.00	161 000			1616	28 000	189 000
11	EQUIPMENT					18.00	972 000			6119	115 000	1 087 000
12	FURNISHINGS					16.50	239 000			328	5 000	244 000
13	SPECIAL CONSTRUCTION					18.00	856 000			9550	179 000	1 035 000
14	CONVEYING SYSTEMS					18.00	651 000			2695	51 000	708 000
15	MECHANICAL SYSTEMS					18.00	3 197 000			119990	2 249 000	5 446 000
16	ELECTRICAL					17.00	1 896 000			61993	1 167 000	2 933 000
17	INSTRUMENTATION					18.00	INCLUDED IN HVAC #3			0	0	0
	TOTAL AREA #4						16 267 000			465460	7 960 000	23 227 000

CES-2000-0 (4/81)

COST ESTIMATE SUMMARY
AREA 5, ONSITE IMPROVEMENTS

PARSONS

ESTIMATE WORKSHEET

HARTSVILLE ALTERNATE CASE

M.T.O. BY _____ PRICED BY _____ DATE AUG 85 SHEET ____ OF ____

JOB NO.: 6440-11 CLIENT: DOE/PNL TYPE OF ESTIMATE DOM CHECKED BY RLM/RJ

UNIT/AREA MRS FACILITY

DESCRIPTION

CAPACITY

ACCNT		QUANTITY	UNIT	COST OR M/HRS PER UNIT MATL	M/H	LAB $	MATERIAL EXPENSE	SUBCONTRACT M/HRS	SUBCONTRACT DOLLARS	LABOR M/HRS	LABOR DOLLARS	TOTAL DOLLARS
	TOTAL SUMMARY AREA 5											
	AREA 5											47 440 000
	CHTRU											1 163 000
	SUPPORT FACILITIES											35 248 000
	UTILITIES											3 360 000
	TOTAL AREA 5 W/o CONTINGENCY											87 211 000

CES-2000-0 (4/81)

E-1/14

PARSONS

ESTIMATE WORKSHEET

HARTSVILLE ALTERNATE CASE

M.T.O. BY ENGR. PRICED BY RUF DATE AUG 85 SHEET ____ OF ____

JOB NO.: 6440-11 CLIENT: DOE/PNL TYPE OF ESTIMATE ROM CHECKED BY RCAM/PJ

UNIT/AREA MRS FACILITY

DESCRIPTION

CAPACITY

ACCNT		QUANTITY	UNIT	COST OR M/HRS PER UNIT MATL	M/H	LAB $	MATERIAL EXPENSE	SUBCONTRACT M/HRS	SUBCONTRACT DOLLARS	LABOR M/HRS	LABOR DOLLARS	TOTAL DOLLARS
	SUMMARY AREA 5											
	SUMMARY BY DIVISIONS					16.37	27 389 000			585 103	8 596 900	35 985 000
	LABOR PRODUCTIVITY	85%								92 683	1 517 000	1 517 000
	S/TOTAL						27 389 000			677 886	10 113 900	37 502 000
	CONTRACTORS OH-PROFIT	26.5%										9 938 000
	TOTAL COST AREA 5 w/o CONTINGENCY											47 440 000

CES-2000-0 (4/81)

5-2

PARSONS

ESTIMATE WORKSHEET

HARTSVILLE ALTERNATE CASE

M.T.O. BY EAGR PRICED BY RUF DATE AUG 85 SHEET ____ OF ____

JOB NO.: G44011 CLIENT: DOE/PNL TYPE OF ESTIMATE ROM CHECKED BY Rom/RJ

UNIT/AREA MRS FACILITY

DESCRIPTION

CAPACITY AREA 5

ACCNT		QUANTITY	UNIT	COST OR M/HRS PER UNIT MATL	COST OR M/HRS PER UNIT M/H	COST OR M/HRS PER UNIT LAB $	MATERIAL EXPENSE	SUBCONTRACT M/HRS	SUBCONTRACT DOLLARS	LABOR M/HRS	LABOR DOLLARS	TOTAL DOLLARS
	SUMMARY CHTRU FACILITY											
	TOTAL DIRECT COST					16.50	743 000			9086	150 000	893 000
	LABOR PRODUCTIVITY	85%								1603	26 000	26 000
	S/TOTAL						743 000			10689	176 000	919 000
	CONTRACTORS OH-PROFIT	26.5%										244 000
	TOTAL CHTRU FAC W/O CONTINGENCY											1 163 000

CES-2000-0 (4/81)

PARSONS

ESTIMATE WORKSHEET

HARTSVILLE ALTERNATE CASE

M.T.O. BY RUE PRICED BY RUF DATE AUG 81 SHEET ____ OF ____

JOB NO.: 6440-11 CLIENT: DOE/PNL TYPE OF ESTIMATE ROM CHECKED BY RUM

UNIT/AREA MRS FACILITY

DESCRIPTION

CAPACITY AREAS

ACCNT		QUANTITY	UNIT	COST OR M/HRS PER UNIT			MATERIAL EXPENSE	SUBCONTRACT		LABOR		TOTAL DOLLARS
				MATL	M/H	LAB $		M/HRS	DOLLARS	M/HRS	DOLLARS	
	SUMMARY SUPPORT FACILITIES											
	TOTAL DIRECT COST					16.5	21 584 000			323 507	5 338 000	26 922 000
	LABOR PRODUCTIVITY	85%								57 090	942 000	942 000
	S/TOTAL						21 584 000			380 597	6 280 000	27 864 000
	CONTRACTORS OH-PROFIT	26.5%										7 384 000
	TOTAL SUPPORT FACILITIES W/O CONTINGENCY											35 248 000

CES-2000-0 (4/81)

PARSONS

HARTSVILLE ALTERNATE CASE

ESTIMATE WORKSHEET

M.T.O. BY RUF PRICED BY RUF DATE AUG 85 SHEET ____ OF ____

JOB NO.: 6440-11 CLIENT: DOE/PNL TYPE OF ESTIMATE ROM CHECKED BY RCM/PWL

UNIT/AREA MRS FACILITY

DESCRIPTION

CAPACITY AREA 5

ACCNT		QUANTITY	UNIT	COST OR M/HRS PER UNIT MATL	M/H	LAB $	MATERIAL EXPENSE	SUBCONTRACT M/HRS	SUBCONTRACT DOLLARS	LABOR M/HRS	LABOR DOLLARS	TOTAL DOLLARS
	SUMMARY UTILITIES											
	TOTAL DIRECT COST					1875	1 699 000			43381	813 000	2 512 000
	LABOR PRODUCTIVITY	85%								7653	144 000	144 000
	S/TOTAL						1 699 000			51036	957 000	2 656 000
	CONTRACTORS OH-PROFIT	26.6%										704 000
	TOTAL COST UTILITIES W/o CONTINGENCY											3 360 000

CES-2000-0 (4/81)

PARSONS

ESTIMATE WORKSHEET

HARTSVILLE ALTERNATE CASE

M.T.O. BY ENGINEERING PRICED BY V. MESEC DATE AUG. 85 SHEET ____ OF ____

JOB NO.: 6440-11 CLIENT: DOE/PNL TYPE OF ESTIMATE ROM. CHECKED BY RCM/BR

UNIT/AREA MRS FACILITY

DESCRIPTION

CAPACITY

ACCNT		QUANTITY	UNIT	COST OR M/HRS PER UNIT MATL	M/H	LAB $	MATERIAL EXPENSE	SUBCONTRACT M/HRS	SUBCONTRACT DOLLARS	LABOR M/HRS	LABOR DOLLARS	TOTAL DOLLARS
	Summary Area (s) 5											
Div 2	SITE WORK					16.08	21 825 000			440 885	7 090 000	28 915 000
3	CONCRETE					15.31	⊖			⊖	⊖	⊖
4	MASONARY					16.30	⊖			⊖	⊖	⊖
5	METALS					18.74	⊖			⊖	⊖	⊖
6	WOOD & PLASTICS					15.50	⊖			⊖	⊖	⊖
7	THERMAL MOIST. PROTECTION					16.50	⊖			⊖	⊖	⊖
8	DOORS & WINDOWS					16.50	⊖			⊖	⊖	⊖
9	FINISHES					16.32	⊖			⊖	⊖	⊖
10	SPECIALTIES					17.51	⊖			⊖	⊖	⊖
11	EQUIPMENT					18.74	21 000			16	300	21 000
12	FURNISHINGS					16.50	⊖			⊖	⊖	⊖
13	SPECIAL CONSTRUCTION					18.74	⊖			⊖	⊖	⊖
14	CONVEYING SYSTEMS					18.74	⊖			⊖	⊖	⊖
15	MECHANICAL SYSTEMS					18.74	⊖			⊖	⊖	⊖
16	ELECTRICAL					17.85	5 334 000			82 377	1 474 000	6 815 000
17	INSTRUMENTATION					18.38	199 000			1925	35 000	234 000
	TOTAL						27 389 000			525 203	8 896 000	35 985 000

CES-2000-0 (4/81)

PARSONS

ESTIMATE WORKSHEET

HARTSVILLE ALTERNATE CASE

M.T.O. BY ENGR. PRICED BY RUF DATE AUG 85 SHEET ____ OF 1

JOB NO.: 6440-11 CLIENT: DOE/PNL TYPE OF ESTIMATE ROM CHECKED BY RJ

UNIT/AREA MRS FACILITY

DESCRIPTION

CAPACITY

ACCNT		QUANTITY	UNIT	COST OR M/HRS PER UNIT MATL	M/H	LAB $	MATERIAL EXPENSE	SUBCONTRACT M/HRS	SUBCONTRACT DOLLARS	LABOR M/HRS	LABOR DOLLARS	TOTAL DOLLARS
	SUMMARY AREA 5											
DIV 2	SITEWORK											
	TOTAL SITEWORK (CLINCH RIVER ALTERNATE CASE)						21 458 000			306015		
	DELETE EARTHWORK (CLINCH RIVER ALTERNATE CASE)						(15 708 000)			(190443)		
	ADD EARTHWORK (HARTSVILLE ALTERNATE CASE)						16 075 000			324313		
	TOTAL						21 825 000			440 885		

CES-2000-0 (4/81)

HARTSVILLE - ALTERNATE CASE

PARSONS

ESTIMATE WORKSHEET

M.T.O. BY ENGR. PRICED BY RUF DATE AUG. '85 SHEET ___ OF ___

JOB NO.: 6440-11 CLIENT: DOE / PNL TYPE OF ESTIMATE ROM CHECKED BY RJ

UNIT/AREA MRS FACILITY

DESCRIPTION SITE LOCATION

CAPACITY

ACCNT		QUANTITY	UNIT	COST OR M/HRS PER UNIT MATL	M/H	LAB $	MATERIAL EXPENSE	SUBCONTRACT M/HRS	SUBCONTRACT DOLLARS	LABOR M/HRS	LABOR DOLLARS	TOTAL DOLLARS
DIV. 2	SITEWORK AREA #5											
2200	EARTHWORK											
10	FINE GRADING - EARTH (MACH)	-	AC	1878	48							
11	EXCAVATION INCL. HAULING - EARTH	1364800	CY	1.09	.01		1 487 630			13648		
12	EMBANKMENT - COMPACTED FILL	1433040	CY	1.10	.02		1 576 340			28661		
13	ROCK EXCAV. & HAUL - BLASTING	2,811,200	CY	4.50	.10		12 650 400			281120		
14	ROCK EXCAV. & HAUL - RIPPABLE	-	CY	1.70	.02							
15	ROCK EMBANKMENT - COMP - HAUL	360560	CY	1.00	.008		360 560			2884		
16	CRUSHING & SCREENING & HAULING	-	CY	2.00	.016							
17	DIKE (EARTH FILL) POND	-	CY	1.10	.02							
18	EARTH FILL AT EXISTING TUNNEL & DIKES	-	CY	1.10	.02							
19A	EXCAVATION AT PONDS	-	CY	1.09	.01							
19B	IMPORT	—	—	—								
	SUB TOTAL						16 074 930			326313		
					USE		16 075 000					

CES 2000 0 (4/81)

PARSONS

HARTSVILLE ALTERNATE CASE

ESTIMATE WORKSHEET

M.T.O. BY | PRICED BY | DATE AUG 85 | SHEET ___ OF 1

JOB NO.: 6440-11 | CLIENT: DOE/PNL | TYPE OF ESTIMATE ROM | CHECKED BY Penn/RT

UNIT/AREA MRS FACILITY

DESCRIPTION

CAPACITY

ACCNT		QUANTITY	UNIT	COST OR M/HRS PER UNIT			MATERIAL EXPENSE	SUBCONTRACT		LABOR		TOTAL DOLLARS
				MATL	M/H	LAB $		M/HRS	DOLLARS	M/HRS	DOLLARS	
DIV. 11	SUMMARY AREA 5											
11550	EQUIPMENT											
	(SAME AS CLINCH RIVER ALTERNATE CASE)						21 00			16		

CES-2000-0 (4/81)

PARSONS

HARTSVILLE ALTERNATE **ESTIMATE WORKSHEET**

M.T.O. BY JJ PRICED BY JJ DATE AUG-85 SHEET 2 OF

JOB NO.: 6440-11 CLIENT: PNL-DOE TYPE OF ESTIMATE ROM CHECKED BY

UNIT/AREA / DESCRIPTION / CAPACITY		QUANTITY	UNIT	COST OR M/HRS PER UNIT			MATERIAL EXPENSE	SUBCONTRACT		LABOR		TOTAL DOLLARS
				MATL	M/H	LAB $		M/HRS	DOLLARS	M/HRS	DOLLARS	
ACCNT DIV. 16	ELECTRIC. AREA-5											
	SUMMARY											
16100	TOTAL ELECTRICAL (SAME AS CLINCH RIVER ALTERNATE CASE)						5334000			82377		

CES-2000-0 (4/81)

HARTSVILLE ALTERNATE CASE

7/22/85

PARSONS

ESTIMATE WORKSHEET

M.T.O. BY: CEN/BH | PRICED BY: | DATE: AUG 85 | SHEET 1 OF 4

JOB NO.: 6440-11 | CLIENT: PNL/DOE | TYPE OF ESTIMATE: ROM | CHECKED BY: [illegible]

UNIT/AREA: R&H BUILDING

DESCRIPTION: ONSITE BAL OF PLANT

CAPACITY:

ACCNT		QUANTITY	UNIT	COST OR M/HRS PER UNIT: MATL	M/H	LAB $	MATERIAL EXPENSE	SUBCONTRACT: M/HRS	DOLLARS	LABOR: M/HRS	DOLLARS	TOTAL DOLLARS
DIV. 17	INSTRUMENTATION AREA 5											
	SUMMARY											
1712	ANALYZERS	1	LOT				126600			500		
1714	MISCELLANEOUS INSTRUMENTS	1	LOT				60000			1000		
1718	INSTRUMENT INSTALLATION MATERIAL	1	LOT				7000			225		
1719	CALIBRATION	1	LOT							200		
	SUBTOTAL						193600			1925		
	INLAND FREIGHT ALLOWANCE @ ~3%	1	LOT				5400					
	TOTAL						199000			1925		

CES-2000-0 (4/81)

PARSONS

HARTSVILLE ALTERNATE CASE

ESTIMATE WORKSHEET

M.T.O. BY | PRICED BY | DATE AUG 85 | SHEET ____ OF ____

JOB NO.: 6440-11 | CLIENT: DOE/PNL | TYPE OF ESTIMATE ROM | CHECKED BY Rem/RJ

UNIT/AREA MRS FACILITIES

DESCRIPTION

CAPACITY

ACCNT		QUANTITY	UNIT	COST OR M/HRS PER UNIT			MATERIAL EXPENSE	SUBCONTRACT		LABOR		TOTAL DOLLARS
				MATL	M/H	LAB $		M/HRS	DOLLARS	M/HRS	DOLLARS	
	SUMMARY AREA 5											
	CHTRU FACILITY (SAME AS CLINCH RIVER ALTERNATE CASE)						743000			9086		

CES-2000-0 (4/81)

HARTSVILLE ALTERNATE CASE

PARSONS

ESTIMATE WORKSHEET

M.T.O. BY | PRICED BY | DATE AUG 85 | SHEET ____ OF ____

JOB NO.: 6440-11 | CLIENT: DOE/PNL | TYPE OF ESTIMATE ROM | CHECKED BY Ram/RW

UNIT/AREA MRS FACILITY

DESCRIPTION

CAPACITY

ACCNT		QUANTITY	UNIT	COST OR M/HRS PER UNIT MATL	M/H	LAB $	MATERIAL EXPENSE	SUBCONTRACT M/HRS	SUBCONTRACT DOLLARS	LABOR M/HRS	LABOR DOLLARS	TOTAL DOLLARS
	SUMMARY AREA 5											
	SUPPORT FACILITIES (SAME AS CLINCH RIVER ALTERNATE CASE)						21 584 000			323507	5 338 000	26 922 000

CES-2000-0 (4/81)

AREA 5
UTILITIES

PARSONS

HARTSVILLE ALTERNATE CASE

ESTIMATE WORKSHEET

M.T.O. BY | PRICED BY | DATE AUG 85 | SHEET ___ OF ___

JOB NO.: 6440-11 | CLIENT: DOE / PNL | TYPE OF ESTIMATE ROM | CHECKED BY Rom/RW

UNIT/AREA MRS FACILITY
DESCRIPTION
CAPACITY

ACCNT		QUANTITY	UNIT	COST OR M/HRS PER UNIT			MATERIAL EXPENSE	SUBCONTRACT		LABOR		TOTAL DOLLARS
				MATL	M/H	LAB $		M/HRS	DOLLARS	M/HRS	DOLLARS	
	SUMMARY AREA 5											
	UTILITIES											
	(SAME AS CLINCH RIVER ALTERNATE CASE)						1699000			43381		

CES-2000-0 (4/81)

COST ESTIMATE SUMMARY
AREA 6, WASTE STORAGE

PARSONS

ESTIMATE WORKSHEET

M.T.O. BY ENGINEERING PRICED BY V. MESA DATE AUG. 85 SHEET ____ OF ____

JOB NO.: 6440-11 CLIENT: DOE/PNL TYPE OF ESTIMATE ROM 35% CHECKED BY DH

UNIT/AREA MRS.

DESCRIPTION

CAPACITY

ACCNT DIV.		QUANTITY	UNIT	COST OR M/HRS PER UNIT MATL	M/H	LAB $	MATERIAL EXPENSE	SUBCONTRACT M/HRS	SUBCONTRACT DOLLARS	LABOR M/HRS	LABOR DOLLARS	TOTAL DOLLARS
	TOTAL AREA #6											
	SUMMARY											
	TOTAL BY DIVISIONS					16.33	50 169 000			209606	13 222 000	63 391 000
	LABOR PRODUCTIVITY	85 %								142572	2 333 000	2 333 000
	S/TOTAL						50 169 000			352178	15 555 000	65 724 000
	CONTR OH&P	26½ %									4446	17 416 000
	TOTAL											83 140 000

CES-2000-0 (4/81)

6-140

HARTSVILLE

ALT CASE

PARSONS

ESTIMATE WORKSHEET

M.T.O. BY ENGINEERING PRICED BY V. MESEC DATE AUG. 85 SHEET ___ OF ___

JOB NO.: 6440-11 CLIENT DOE/PNC TYPE OF ESTIMATE ROM. CHECKED BY DH

UNIT/AREA MRS FACILITY

DESCRIPTION

CAPACITY

ACCNT		QUANTITY	UNIT	COST OR M/HRS PER UNIT MATL	M/H	LAB $	MATERIAL EXPENSE	SUBCONTRACT M/HRS	SUBCONTRACT DOLLARS	LABOR M/HRS	LABOR DOLLARS	TOTAL DOLLARS
	SUMMARY AREA (S) 6											
DIV 2	SITE WORK					16.08	3967500			696148	11194000	15086900
3	CONCRETE					15.31	--			—		
4	MASONARY					16.50						
5	METALS					18.74						
6	WOOD & PLASTICS					4.50						
7	THERMAL MOIST. PROTECTION					16.50						
8	DOORS & WINDOWS					16.50						
9	FINISHES					16.31						
10	SPECIALTIES					17.61						
11	EQUIPMENT					18.74	733400			2010	38000	771400
12	FURNISHINGS					16.50						
13	SPECIAL CONSTRUCTION					18.74	24000			768	14000	38000
14	CONVEYING SYSTEMS					18.74						
15	MECHANICAL SYSTEMS					18.74						
16	ELECTRICAL					17.85	3131000			110680	1976000	5107000
17	INSTRUMENTATION					18.38						
	TOTAL						5016900			809606	13282000	63391000

CES-2000-0 (4/81)

PARSONS

ESTIMATE WORKSHEET

CASE

M.T.O. BY ENGINEERING PRICED BY ✓ MESSEC/[illegible] △ DATE AUG 85 SHEET ____ OF ____

JOB NO.: 6440-11 CLIENT: DOE/PNL TYPE OF ESTIMATE ROM CHECKED BY [illegible]

UNIT/AREA MRS FACILITY

DESCRIPTION

CAPACITY

ACCNT		QUANTITY	UNIT	COST OR M/HRS PER UNIT MATL	M/H	LAB $	MATERIAL EXPENSE	SUBCONTRACT M/HRS	SUBCONTRACT DOLLARS	LABOR M/HRS	LABOR DOLLARS	TOTAL DOLLARS
DIV 2	SITE WORK AREA 6											
	SUMMARY											
2100	CLEARING						281 960			6720		
2200	EARTHWORK						7 354 000			84333		
2220	TRENCHING & BACKFILLING						258 560			7143		
2500	SITE DRAINAGE						188 750			2991		
2600	ROADS & PAVING						3 102 000			11388		
2700	SITE IMPROVEMENTS						280 700			3530		
2795	DRYWELLS,						28 196 000			579881		
2800	LANDSCAPING						12 930			162		
DIV 2	TOTAL SITEWORK						39 674 900			696148		
	Use						39 675 000					

CES-2000-0 (4/81)

PARSONS

HARTSVILLE - ALTERNATE CASE — ESTIMATE WORKSHEET

M.T.O. BY ENGR. PRICED BY RUF DATE AUG. '85 SHEET ___ OF ___

JOB NO.: 6440-11 CLIENT: DOE / PNL TYPE OF ESTIMATE ROM CHECKED BY

UNIT/AREA MRS FACILITY

DESCRIPTION SITE LOCATION

CAPACITY

ACCNT		QUANTITY	UNIT	COST OR M/HRS PER UNIT MATL	M/H	LAB $	MATERIAL EXPENSE	SUBCONTRACT M/HRS	SUBCONTRACT DOLLARS	LABOR M/HRS	LABOR DOLLARS	TOTAL DOLLARS
DIV. 2	SITEWORK AREA #6											
2200	EARTHWORK											
10	FINE GRADING - EARTH (MACH)	-	AC	1878	48.							
11	EXCAVATION INCL. HAULING - EARTH	381200	CY	1.09	.01		415 500			3812		
12	EMBANKMENT - COMPACTED FILL	400260	CY	1.10	.02		440 300			8005		
13	ROCK EXCAV. & HAUL - BLASTING	287900	CY	4.50	.10		1295600			28790		
14	ROCK EXCAV. & HAUL - RIPPABLE	-	CY	1.70	.02							
15	ROCK EMBANKMENT - COMP - HAUL	416270	CY	1.00	.008		416 200			33210		
16	CRUSHING & SCREENING & HAULING		CY	2.00	.016							
17	DIKE (EARTH FILL) POND		CY	1.10	.02							
18	EARTH FILL AT EXISTING TUNNEL & DIKES		CY	1.10	.02							
19	EXCAVATION AT PONDS	—	CY	1.09	.01							
19B	IMPORT	1051570	CY	1.82	.01		1051 600			10516		
	SUB TOTAL						7 854 300			84823		
						USE	7 854 000					

CES 2000 0 (4/81)

PARSONS

HOOTSVILLE - ALTERNATE CASE — ESTIMATE WORKSHEET

M.T.O. BY Engr. | PRICED BY RWF | DATE Aug. '86 | SHEET ____ OF ____

JOB NO.: 6400-11 | CLIENT: DOE/PNL | TYPE OF ESTIMATE ROM | CHECKED BY

UNIT/AREA MRS FACILITY
DESCRIPTION SITE LOCATION
CAPACITY

ACCNT		QUANTITY	UNIT	COST OR M/HRS PER UNIT MATL	M/H	LAB$	MATERIAL EXPENSE	SUBCONTRACT M/HRS	SUBCONTRACT DOLLARS	LABOR M/HRS	LABOR DOLLARS	TOTAL DOLLARS
DIV. 2	SITE WORK											
2795	DRYWELL HOLE (FILL)											
.1	HOLE DRILLING 26"Φ	81800	LF	8.	.3		654 400			24540		
.2	42"Φ	16000	LF	15.50	.5		248 000			8000		
.3	48"Φ	2000	LF	21.	.7		42 000			1400		
2795	DRYWELL HOLE (ROCK)											
.1	HOLE DRILLING											
.1	26"Φ	4300	LF	16.	.5		68 800			2150		
.2	42"Φ	800	LF	31.	1.1		24 800			880		
.3	48"Φ	100	LF	42.	1.4		4 200			140		
2795.5	DISPOSAL - EARTH/ROCK FROM HOLE	18700	CY	2.69	.05		50 300			935		
2795.6	DRYWELL HOLE LINER 16"Φ	84100	LF	164	4.5		13 792 400			378450		
.7	30"Φ	16400	LF	435	6.5		7 134 000			106600		
.8	36"Φ	2100	LF	625	7.5		1 312 500			15750		
2795.9	DRYWELL LINER GROUT	11040	CY	55	.9		607 200			9936		
2795.10	EXCAV. & DISPOSAL - FOR CONC. COLLAR	11000	CY	4.5	.1		49 500			1100		
2795.11	REINF. CONC. FOR COLLARS - CAT. I	10000	CY	100.	3.0		1 000 000			30000		
	S/TOTAL FOR 1000 HOLES						25 898 100			579881		
	ADJUST FOR 1000 MTY	9	%		use		2 327 900			-		
	SUB TOTAL						28 196 000			579881		

CES 2000 0 (4/81)

HARTSVILLE

ALT CASE

PARSONS

ESTIMATE WORKSHEET

M.T.O. BY ENGINEERING PRICED BY ✓ MESSEC/[illegible] △ DATE AUG 85 SHEET ___ OF ___

JOB NO.: 6440-11 CLIENT: DOE/PNL TYPE OF ESTIMATE ROM CHECKED BY DH

UNIT/AREA MRS FACILITY

DESCRIPTION

CAPACITY

ACCNT		QUANTITY	UNIT	COST OR M/HRS PER UNIT			MATERIAL EXPENSE	SUBCONTRACT		LABOR		TOTAL DOLLARS
				MATL	M/H	LAB $		M/HRS	DOLLARS	M/HRS	DOLLARS	
DIV 3	CONCRETE											
	SHEET 6-6											
	NOT USED											

CES-2000-0 (4/81)

PARSONS

ESTIMATE WORKSHEET

HARTSVILLE ALTERNATE CASE

M.T.O. BY | PRICED BY | DATE AUG 85 | SHEET ___ OF 1

JOB NO.: 6440-11 | CLIENT: DOE/PNL | TYPE OF ESTIMATE ROM | CHECKED BY RWG/RN

UNIT/AREA MRS FACILITY

DESCRIPTION

CAPACITY

ACCNT		QUANTITY	UNIT	COST OR M/HRS PER UNIT			MATERIAL EXPENSE			SUBCONTRACT				LABOR				TOTAL DOLLARS		
				MATL	M/H	LAB $				M/HRS	DOLLARS			M/HRS	DOLLARS					
DIV. 11	SUMMARY AREA 6																			
11B66	EQUIPMENT (SAME AS CLINCH RIVER ALTERNATE CASE)							7	339000					2010						

CES-2000-0 (4/81)

HARTSVILLE
ALT
CASE

PARSONS

ESTIMATE WORKSHEET

M.T.O. BY ENGINEERING PRICED BY ✓ Messec/[illegible] △ DATE Aug 85 SHEET ____ OF ____

JOB NO.: 6440-11 CLIENT: DOE/PNL TYPE OF ESTIMATE ROM CHECKED BY [illegible]

UNIT/AREA MRS FACILITY

DESCRIPTION

CAPACITY

ACCNT		QUANTITY	UNIT	COST OR M/HRS PER UNIT MAT'L	M/H	LAB $	MATERIAL EXPENSE	SUBCONTRACT M/HRS	SUBCONTRACT DOLLARS	LABOR M/HRS	LABOR DOLLARS	TOTAL DOLLARS
DV13	SPECIAL CONSTR AREA #6											
	SUMMARY											
13610	STORAGE FACILITY GATE STATION	1	LOT				24,000			768		

CES-2000-0 (4/81)

6-22

PARSONS

HARTSVILLE ALTERNATE

ESTIMATE WORKSHEET

M.T.O. BY JJ PRICED BY JJ DATE AUG-15 SHEET 1 OF 1

JOB NO.: 6440-11 CLIENT: PNL-DOE TYPE OF ESTIMATE ROM CHECKED BY RCM/A

UNIT/AREA / DESCRIPTION / CAPACITY	ACCNT	QUANTITY	UNIT	COST OR M/HRS PER UNIT MATL	M/H	LAB $	MATERIAL EXPENSE	SUBCONTRACT M/HRS	SUBCONTRACT DOLLARS	LABOR M/HRS	LABOR DOLLARS	TOTAL DOLLARS
ELECTRIC. AREA-6												
SUMMARY												
OUTDOOR SUBSTATION #SS-05	16400						251,050			1232		
AREA LIGHTING	16500						296,490			3965		
SECURITY LIGHTING	16505						83,280			1152		
AREA GROUND'G	16550						23,180			534		
CATHODIC PROTECTION	16600						852,140			51174		
ALARM ZONE	16604						127,290			2377		
INSTRUMENT DRY WELL	16900						1,959,030			63520		
MONITOR WIRING	16905						40,400			1000		
							3,632,860			124,954		
DELETE INSTR. FOR CASK STORAGE	<16900>					<	501,800		<	14,274 >		
				SAY =			3,131,000			110,680		

CES-2000-0 (4/81)

PARSONS

ESTIMATE WORKSHEET

HARTSVILLE ALTERNATE CASE

M.T.O. BY JJ | PRICED BY JJ | DATE AUG 85 | SHEET ____ OF ____

JOB NO.: 6440-11 | CLIENT: DOE / PNL | TYPE OF ESTIMATE ROM | CHECKED BY RM / RD

UNIT/AREA DRY WELL STORAGE
DESCRIPTION SWGR & XMRS SS-05
CAPACITY MRS FACILITY

ACCNT		QUANTITY	UNIT	COST OR M/HRS PER UNIT MATL	M/H	LAB $	MATERIAL EXPENSE	SUBCONTRACT M/HRS	SUBCONTRACT DOLLARS	LABOR M/HRS	LABOR DOLLARS	TOTAL DOLLARS
	ELECTRIC AREA 6 (ALTERNATE)											
16400	OUTDOOR SUBSTATION SS-05											
	AIR INTER. SW	2	E	7870	45		15 740			90		
	500 KVA XFMRS	2	E	12300	58		24 600			116		
	800 A BRKR	10	E	1800	20		18 000			200		
	SPACE ONLY	2	E	300	-		600			-		
	MCC-05-1, S/B-1 & S/B-2											
	100 A BRKR	30	E	410	3		12 300			90		
	SPACE ONLY	6	E	170	-		1 020			-		
							72 260			496		
	ADD CIVIL WORK						178 790			736		
							251 050			1232		

CES-2000-0 (4/81)

PARSONS

HARTSVILLE ALTERNATE — ESTIMATE WORKSHEET

M.T.O. BY Ruf | PRICED BY Ruf | DATE Aug. 85 | SHEET 3 OF ____

JOB NO.: Guido-11 | CLIENT: DOE | TYPE OF ESTIMATE ROM | CHECKED BY Ron

UNIT/AREA MRS FACILITIES

ACCNT	DESCRIPTION / CAPACITY	QUANTITY	UNIT	COST OR M/HRS PER UNIT: MATL	M/H	LAB $	MATERIAL EXPENSE	SUBCONTRACT: M/HRS	SUBCONTRACT: DOLLARS	LABOR: M/HRS	LABOR: DOLLARS	TOTAL DOLLARS
DW66	ELECTRICAL AREA #6											
16400	SUBSTATIONS: ENCLOSURE											
	#05-1	1600	SF									
	PAD 1'-0" THK	60	CY	519	3		31 140			180		
	BLDG (PREFAB)	1600	SF	50	.1		80 000			160		
	EARTHWORK	ALLOW		1000	50		1 000			50		
	#05-2	800	SF									
	PAD 1'-0" THK	30	CY	519	3		15 570			90		
	BLDG (PREFAB)	800	SF	50	.1		40 000			80		
	EARTHWORK	ALLOW		500	20		500			20		
	TRANSF. PAD	2	EA									
	FOUNDATION	20	CY	504	6.8		10 080			136		
	EARTHWORK	ALLOW		500	20		500			20		
	TOTAL DIRECT COST						178 790			736		

BACK-UP REFERENCE ONLY

CES-2000-0 (4/81)

PARSONS

HARTSVILLE ALTERNATE ESTIMATE WORKSHEET

M.T.O. BY J.N. PRICED BY N.J. DATE AUG-15 SHEET 4 OF

JOB NO.: 6440-11 CLIENT: PNL-DOE TYPE OF ESTIMATE ROM CHECKED BY Rem

UNIT/AREA ALTERN. HARTSVILLE
DESCRIPTION STORAGE. LIGHTING
CAPACITY MRS FACILITY

ACCNT		QUANTITY	UNIT	COST OR M/HRS PER UNIT MATL	M/H	LAB $	MATERIAL EXPENSE	SUBCONTRACT M/HRS	SUBCONTRACT DOLLARS	LABOR M/HRS	LABOR DOLLARS	TOTAL DOLLARS
	ELECTRICAL AREA-6											
	ALTERN. HARTSVILLE											
16500	DRYWELL AREA LIGHTING											
	10.5 x 200 = 2100 x 3200 =	6,720,000	∅									
	16 x 200 =											
	BASE CASK STORAGE											
	6 x 200 = 1200 x 2350	2,820,000	∅									
	1175 x 200 =											
	DIFERENCE	3,900,000	∅									
	ADDITION TO BASE											
	$\frac{\$\ 798250 \times 3{,}700{,}000}{10{,}500{,}000} =$						296,490			3965		✓
	$\frac{10676 \times 3900000}{10{,}500{,}000} =$											

CES-2000-0 (4/81)

PARSONS

HARTSVILLE ALTERNATE

ESTIMATE WORKSHEET

M.T.O. BY JJ. PRICED BY JJ. DATE AUG-15 SHEET 5 OF

JOB NO.: 6440-11 CLIENT: PNL-DOE TYPE OF ESTIMATE ROM CHECKED BY RCM

UNIT/AREA / DESCRIPTION / CAPACITY	ACCNT	QUANTITY	UNIT	COST OR M/HRS PER UNIT: MATL	M/H	LAB $	MATERIAL EXPENSE	SUBCONTRACT: M/HRS	SUBCONTRACT: DOLLARS	LABOR: M/HRS	LABOR: DOLLARS	TOTAL DOLLARS
ELECTRIC. AREA-6												
	16500											
SECURITY LIGHTING												
$\frac{226,340 \times 3,900,000}{10,600,000} =$							83,280			1152		
$\frac{3132 \times 3,900,000}{10,600,000} =$												

CES-2000-0 (4/81)

HARTSVILLE ALTERNATE

PARSONS

ESTIMATE WORKSHEET

M.T.O. BY J.J. PRICED BY J.J. DATE AUG-15 SHEET 6 OF 3

JOB NO.: 6440-11 CLIENT: PNL-DOE TYPE OF ESTIMATE ROM CHECKED BY

UNIT/AREA

DESCRIPTION SECURITY LIGHTING

CAPACITY

ACCNT		QUANTITY	UNIT	COST OR M/HRS PER UNIT MATL	M/H	LAB $	MATERIAL EXPENSE	SUBCONTRACT M/HRS	SUBCONTRACT DOLLARS	LABOR M/HRS	LABOR DOLLARS	TOTAL DOLLARS
	ELECTRICAL AREA-5 & 6											
16500	SECURITY LIGHTING (11-14)											
	FLOODLIGHT 1000W HPS 277V. HOLOPHANE # VFLDC10HP2755	140	E	671	3		93940			420		
	10 FT ROUND STEEL POLE	130	E	402	2		52260			260		
	DIRECT BARIAL CABLE	14000	LF	2.5	.037		35000			518		
	1000 W H.PRESS. SOD. LAMP	140	E	126	.1		17640			14		
	TRENCHING & BACKFILL	14,000	LF	1.5	.1		21000			1400		
	CONCRETE FOUNDATION	130	E	50	4		6500			520		
							226,340			3132		

BACK-UP ONLY

CES-2000-0 (4/81)

HARTSVILLE ALTERNATE

PARSONS
ESTIMATE WORKSHEET

M.T.O. BY N.J. PRICED BY J.J. DATE AUG-15 SHEET 7 OF 7
JOB NO.: 6440-11 CLIENT: PNL-DOE TYPE OF ESTIMATE ROM CHECKED BY Rev (RV)
UNIT/AREA ALTERN. HARTSVILLE
DESCRIPTION GROUNDING
CAPACITY

ACCNT		QUANTITY	UNIT	COST OR M/HRS PER UNIT MATL	M/H	LAB $	MATERIAL EXPENSE	SUBCONTRACT M/HRS	SUBCONTRACT DOLLARS	LABOR M/HRS	LABOR DOLLARS	TOTAL DOLLARS
	ELECTRICAL AREA - 6											
16550	ALERN. HARTSVILLE GROUND'G											
	10.5 x 200 = 2100											
	16 x 200 = 3200											
	(2 x 200) x (2.5 x 200) ÷ 2 = 100,000											
	(2100 x 3200) - 100,000 = 6,620,000											
	ADDITION TO BASE											
	6,620,000 - 2,820,000 =	3,800,000 ✗		.006099			23,180			534		
		3,800,000		.0001405								

CES-2000-0 (4/81)

HARTSVILLE ALTERNATE

PARSONS
ESTIMATE WORKSHEET

M.T.O. BY J. J. PRICED BY J. J. DATE AUG-15 SHEET 8 OF ____
JOB NO.: 6440-11 CLIENT: PNL-DOE TYPE OF ESTIMATE ROM CHECKED BY
UNIT/AREA ALTERN. HARTSVILLE
DESCRIPTION CATHODIC PROTECTION
CAPACITY MRS FACILITY

ACCNT		QUANTITY	UNIT	COST OR M/HRS PER UNIT MATL	M/H	LAB $	MATERIAL EXPENSE	SUBCONTRACT M/HRS	SUBCONTRACT DOLLARS	LABOR M/HRS	LABOR DOLLARS	TOTAL DOLLARS
	ELECTRICAL AREA 6											
16600	CATHODIC PROTECTION @ DRY WELL AREA.											
	25 X 200 = 5000 ⌀											
	(1.75 + 1.75) X 200 = 700 ⌀											
	AREA 5000 x 700 =	3,500,000	⌀									
	16,328 CADWELD X2	32,656	E	5	1		163,280			32656		
	PIGTAIL #2 GRND	16,328	E	10	1		163280			16,328		
	#4/0 GRND GRID [illegible]	21,800	LF	1.8	.036		39240			785		
	TRENCH. 21800 x .5 x 1.5	606	C.Y.	6	.15		3640			91		
	BACKFILL 21,800'	606	C.Y.	35	.07		2120			42		
	GRND. WELL	100	E	50	4		5000			400		
	TESTING POINT	100	E	50	2		5000			200		
	COTHODIC PROT. EQUIPM. XFMR ETC --	1	LS	-	-		210,580			672		
	ENGINEERING [illegible]						260,000			-		
	TOTAL						852140			51,174		

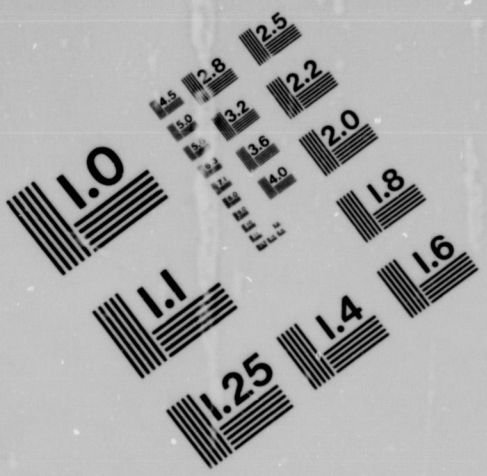
CES-2000-0 (4/81)

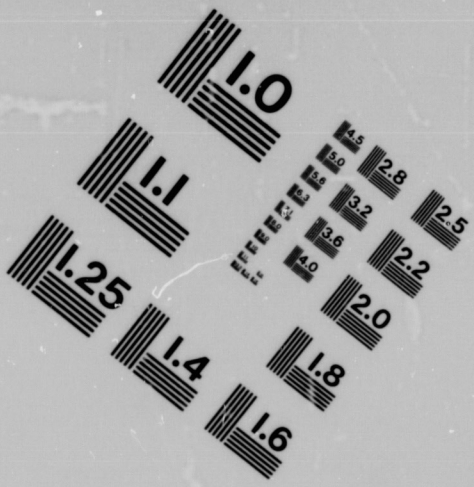
1.920 [illegible] 6-16

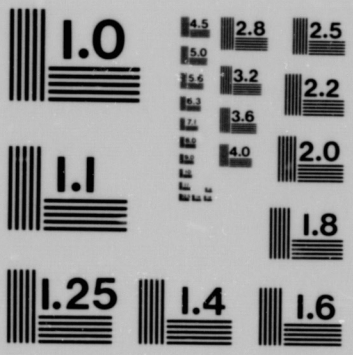
CONTINUED

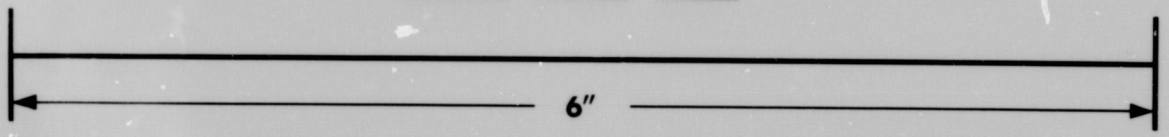
B INTEGRAL MONITORED RETRIEVABLE STORAGE (MRS) FACILITY. CONCEPTUAL DESIGN REPORT - VOLUME V (BOOK X) COST ESTIMATE. FICHE 663

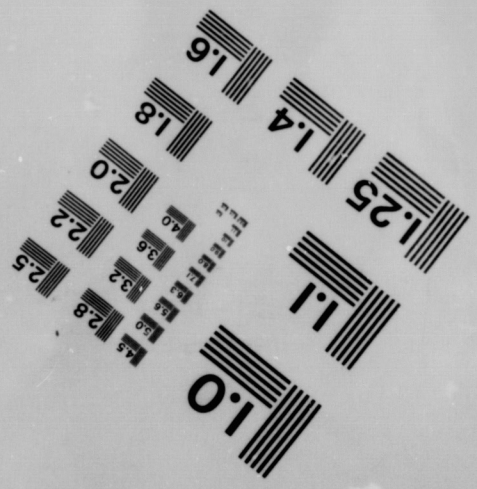
RESOLUTION TEST
TARGET (NE-1)

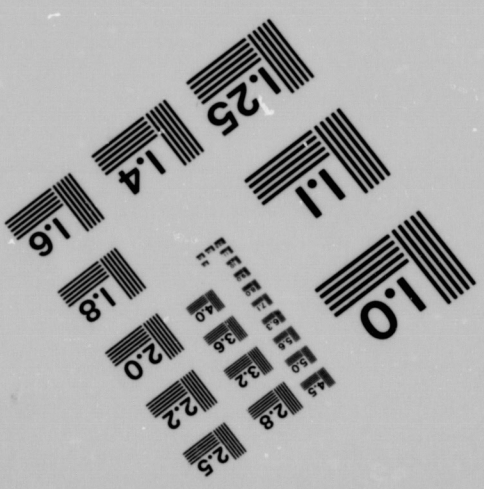












HARTSVILLE ALTERNATE

PARSONS
ESTIMATE WORKSHEET

M.T.O. BY J.J. PRICED BY J. J. DATE AUG-15 SHEET 9 OF 16
JOB NO.: 6440-11 CLIENT: PNL-DOE TYPE OF ESTIMATE ROM CHECKED BY RCM/RB
UNIT/AREA ALTERN. HARTSVILLE
DESCRIPTION ALARM ZONE.
CAPACITY

ACCNT		QUANTITY	UNIT	COST OR M/HRS PER UNIT MATL	M/H	LAB $	MATERIAL EXPENSE	SUBCONTRACT M/HRS	SUBCONTRACT DOLLARS	LABOR M/HRS	LABOR DOLLARS	TOTAL DOLLARS
	ELECTRICAL AREA - 6											
16604	ALTERN. HARTSVILLE ALARM ZONE											
	(54.25 X200) - (7400) =											
	ADD TO BASE											
	17,350 - 13,850 =	3,500										
	USING BASE ESTIMATE											
	$\frac{533,400 \times 3500}{11,000} = 169,720$											
	USING ONE TO THREE RATIO											
	169,720 ÷ 4 = 42430											
	42,430 ÷ 17,85 = 2,377 HRS											
	169,720 - 42,430 = 127,290						127,290			2377		

CES-2000-0 (4/81)

PARSONS

HARTSVILLE ALTERNATE ESTIMATE WORKSHEET

M.T.O. BY J.J. PRICED BY J.J. DATE AUG. 15 SHEET 10 OF ___

JOB NO.: 6440-11 CLIENT: INL - DOE TYPE OF ESTIMATE ROM CHECKED BY Rem

UNIT/AREA ALTERN. HARTSVILLE

DESCRIPTION DRYWELL INSTRUMENTATION

CAPACITY NRS FACILITY

ACCNT		QUANTITY	UNIT	COST OR M/HRS PER UNIT MATL	M/H	LAB $	MATERIAL EXPENSE	SUBCONTRACT M/HRS	SUBCONTRACT DOLLARS	LABOR M/HRS	LABOR DOLLARS	TOTAL DOLLARS
	INSTRUMENT. AREA-6											
16400	INSTRUMENT											
	ALTERN											
	DRY WELL INSTRUMENT											
	DRY WELL 3256 ea ÷ 50 = 66											
	TRENCHING (100 LF)											
	13.5 x 200 = 2700 x 5'-0" x 5'-0" ÷ 27	2500	C.Y	6	.15		15,000			375		
	CONCR. DUCT 2700 x 5 x 2.5 ÷ 27	1250	C.Y	55	.5		68,750			625		
	BACKFILL 2500-1250	1250	C.Y	3.5	.07		4380			88		
	2" ϕ PVC. 2700 x 72	194,400	LI	0.76	.08		147,740			15552		
	FITTING & SUPPORT	25%	-	-	-		36,940			3888		
	WIRING 2000 x 65 50 PR SH	130,000	LF	9.77	.075		1263 600			9750		
	3256 x 100. 1 PR SH	325,000	LF	.213	.008		69225			2600		
	WIRING CONN. 3256 x 6	19536	E	1-	.25		19540			4884		
	1" ϕ RGS. STUB-UPS. 3256 x 50	162800	LI	1.25	.1		203500			16280		
	2" ϕ RGS 300 x .8	2400	LF	2.54	.18		6100			432		
	FITTING & SUPPORT 50%	-	-	-	-		104800			8356		
	JUNCTS 3256 : 50	65	E	250	10		16250			650		
	HANDHOLES	4	E	800	10		3200			40		
	AREA #6 TOTAL						1,959,030			63520		

CES-2000-0 (4/81)

PARSONS

HARTSVILLE ALTERNATE

ESTIMATE WORKSHEET

M.T.O. BY N.J. PRICED BY J.J. DATE AUG-15 SHEET 11 OF

JOB NO.: 6440-11 CLIENT: PNL-DOE TYPE OF ESTIMATE ROM CHECKED BY RCM

UNIT/AREA SE. HLW. RHTRU-STORAGE AREA

DESCRIPTION MONITORING

CAPACITY MRS FACILITY

ACCNT		QUANTITY	UNIT	COST OR M/HRS PER UNIT MATL	M/H	LAB $	MATERIAL EXPENSE	SUBCONTRACT M/HRS	SUBCONTRACT DOLLARS	LABOR M/HRS	LABOR DOLLARS	TOTAL DOLLARS
	ELECTRICAL AREA #6											
16900	INSTRUMENT WIRING											
	WIRING & DUCT BANK FOR MONITORING EQUIPM'T.											
	24x200 = 4800 L.F [0]											
	TRENCHING 4800x1x4÷27	711	CY	6	.15		4270			107		
	CONC. DUCT 4800x1x1÷27	178	CY	55	.5		9790			89		
	BACKFILL 711-178	533	CY	3.5	.07		1870			38		
	3" ϕ PVC. DUCT	4800	LF	1.6	.09		7680			432		
	FITT'G & SUPPORT 25%	-	-	-	-		1920			108		
	10 PR OF #14	4800	LF	2.99	.031		14350			149		
	STIPULATE EVERY 200' ON CAMERA 4800 ÷ 200 = 24 ea											
	1" ϕ RGS COND. 24x10	240	LF	1.2	.1		290			24		
	FITT'G & SUPPORT 50%	-	-	-	-		150			12		
	WIRE CONN. 26x3 =	78	E	1	.25		80			20		
	TESTING ALL									21		
							40,400			1000		

CES-2000-0 (4/81)

COST ESTIMATE SUMMARY
AREA 6, WASTE STORAGE

PARSONS

HARTSVILLE ALTERNATE CASE

ESTIMATE WORKSHEET

M.T.O. BY ENGR. PRICED BY RUF DATE AUG 81 SHEET ____ OF ____

JOB NO.: 6440-11 CLIENT: DOE/IPNL TYPE OF ESTIMATE ROM CHECKED BY RCM

UNIT/AREA MRS FACILITY

DESCRIPTION

CAPACITY

ACCNT		QUANTITY	UNIT	COST OR M/HRS PER UNIT MATL	M/H	LAB $	MATERIAL EXPENSE	SUBCONTRACT M/HRS	SUBCONTRACT DOLLARS	LABOR M/HRS	LABOR DOLLARS	TOTAL DOLLARS
	TOTAL SUMMARY AREA 7											
	TOTAL BY DIVISION					16.65	7 433 000			157579	2 684 000	10 057 000
	LABOR PRODUCTIVITY	87%								27808	463 000	463 000
	S/TOTAL						7 433 000			185387	3 087 000	10 520 000
	CONTRACTORS OH - PROFIT	26.5%										2 788 000
	TOTAL AREA 7 W/OUT CONTINGENCY											13 308 000

CES-2000-0 (4/81)

PARSONS

HARTSVILLE - ALTERNATE CASE

ESTIMATE WORKSHEET

M.T.O. BY ENGINEERING PRICED BY V. MESEC DATE AUG. 85 SHEET ____ OF ____

JOB NO.: 6440-11 CLIENT: DOE/PNC TYPE OF ESTIMATE ROM. CHECKED BY [illegible]

UNIT/AREA MRS FACILITY

DESCRIPTION

CAPACITY

ACCNT	Summary Area (3) #7	QUANTITY	UNIT	COST OR M/HRS PER UNIT MATL	M/H	LAB $	MATERIAL EXPENSE	SUBCONTRACT M/HRS	SUBCONTRACT DOLLARS	LABOR M/HRS	LABOR DOLLARS	TOTAL DOLLARS
DIV 2	SITE WORK					16.06	1 189 000			106 619	1 715 000	6 214 000
3	CONCRETE					15.31	0			0	0	0
4	MASONARY					16.50	0			0	0	0
5	METALS					18.32	0			0	0	0
6	WOOD & PLASTICS					14.50	0			0	0	0
7	THERMAL MOIST. PROTECTION					16.50	0			0	0	0
8	DOORS & WINDOWS					16.42	0			0	0	0
9	FINISHES					16.32	0			0	0	0
10	SPECIALTIES					17.21	0			0	0	0
11	EQUIPMENT					18.32	0			0	0	0
12	FURNISHINGS					16.50	0			0	0	0
13	SPECIAL CONSTRUCTION					18.32	0			0	0	0
14	CONVEYING SYSTEMS					18.21	0			0	0	0
15	MECHANICAL SYSTEMS					18.32	0			0	0	0
16	ELECTRICAL					17.85	2 934 000			50 930	909 000	3 843 000
17	INSTRUMENTATION					18.38	0			0	0	0
	TOTAL						7 433 000			157 549	2 624 000	10 057 000

CES 2000-0 (4/81)

PARSONS

HARTSVILLE ALTERNATE CASE

ESTIMATE WORKSHEET

M.T.O. BY JV | PRICED BY JV | DATE AUG-15 | SHEET 1 OF ____

JOB NO.: 6440-11 | CLIENT: PNL-DOE | TYPE OF ESTIMATE R&M | CHECKED BY Rem/RJ

UNIT/AREA / DESCRIPTION / CAPACITY / ACCNT		QUANTITY	UNIT	COST OR M/HRS PER UNIT MATL	M/H	LAB $	MATERIAL EXPENSE	SUBCONTRACT M/HRS	SUBCONTRACT DOLLARS	LABOR M/HRS	LABOR DOLLARS	TOTAL DOLLARS
	ELECTRIC. AREA-7											
	SUMMARY											
16350	HIGH PWR OVERHED LINE						2,786,500			48,490		
16700	PHONE TRUNK LINES						147,000 ✓			2490 ✓		
							2,933,500			50,930		
						USE	2,934,000					

CES-2000-0 (4/81)

END