

FAC 8211 Heat Source

RUC: \$48,017.72 MB

Source: USACE PAX Newsletter 3.2.2 dated 20 Mar 09
Deflated to FY-09 using Appendix C of newsletter
In V12, Tri-Service and USACE PAX Newsletter values were updated while all
other values were inflated only.

Calculation follows:

SUC: \$845.59 MB

Source: Calculated from vendor quotation and R.S. Means FM&R Cost Book. Inflated to
FY-09 using Green Book Table 5-6 (O&M less DHP).
In V12, values were inflated only.

Calculation follows:

8211 Heat Source

PAX Newsletter average of:

CatCode				
82110	Coal, Steam, 50		\$ 4,118,660.00	Not used, no new coal plants licensed
82110	Coal, HTHW, 50		\$ 3,927,100.00	Not used, no new coal plants licensed
82120	Oil, Steam, 50		\$ 2,554,790.00	
82120	Oil, HTHW, 50		\$ 2,372,800.00	
	Average		\$ 2,463,795.00	\$ 2,463,795.00
	Per MB		\$ 49,275.90	\$ 49,275.90

FAC 8211 Heat Source SCF

Two distinctly different heat sources are aggregated in this FAC: those which require attendance and those which do not. Attended plants from 30-100 MB require constant attendance by 1 person, while for those over 100 MB, 2 persons per shift are required (criterion from AFI 32-1068). This estimate blends the non-attended plants with attended plants to obtain a single SCF for the FAC.

Attended Plants:

Over 100 MB (over 3000 bhp)

Labor

Shifts per year	1095	
Shifts / person (max)	260	
Less holidays	-10	
Less sick	-10	
Less vacation	-15	
Available shifts	225	
Persons @ 1/shift	4.866666667	
Persons @ 2/shift	9.733333333	
Rounded to	10	
Labor Rate	\$73.95	R.S. Means, 2008, Steamfitter Foreman, incl O&P
Annual Labor Cost	\$1,538,160.00	
Boiler Redundancy factor	3	
O versus M	50%	
Subtotal Annual Labor	\$256,360	

Material

Annual		
Major Replacement	\$769,671	From CCF calculation, 2004
Service Life	25 years	from Facility Inspection Field Manual
Annualized (NPV)	\$24,338	Interest rate = 1.9%
Annual Material Allowance	\$5,000	
Subtotal Annual Material	\$29,338	
Subtotal Annual Sustainment	\$285,698	

Over 30 - 100 MB (1000 - 3000 bhp)

Labor

Shifts per year	1095	
Shifts / person (max)	260	
Less holidays	-10	
Less sick	-10	
Less vacation	-15	
Available shifts	225	
Persons @ 1/shift	4.866666667	
Rounded to	5	
Labor Rate	\$73.95	R.S. Means, 2004, Steamfitter Foreman, incl O&P
Annual Labor Cost	\$769,080.00	
Boiler Redundancy factor	3	

O versus M 50%
Labor cost \$128,180

Material

Annual

Major Replacement \$769,671 Quote from Complete Boiler, 11/04
Service Life 25 years, from Facility Inspection
Field Manual
Annualized (NPV) \$24,338
Annual Material Allowance \$1,000
Subtotal Annual Material \$25,338
Subtotal Annual Sustainment \$153,518

Under 30 MB (Average = 14.5 MB or 430 bhp)

Interest Rate = 1.90%
Labor Inspect and Test 28.3 hrs/ yr, Facility Inspection Field Manual
Clean firebox 0.55 hrs/ yr, Facility Inspection Field Manual
Annual labor \$2,133.46
Contract Repair \$20,000 every 7 years, Facility Inspection Field Manual
Replace boiler \$191,730 Firetube, 30 year
Annualized Repair \$106,745.97 = PV of period repairs
\$3,325.98 = annualized amount
Annualized replacement \$4,800.60
Subtotal Annual Sustainment \$10,260.04

FAC Sustainment

Category	Subtotal	Average MB for Category	\$ / MB	Contribution to Total	Subtotal
Over 100 MB	\$285,698	250.51	\$1,140.46	6.62%	\$75.50
30 - 100 MB	\$153,518	58.35	\$2,630.98	6.87%	\$180.75
< 30 MB	\$10,260.04	14.41	\$712.01	86.51%	\$615.96

Total, SCF for FAC, 2008 \$872.21

\$562,009	Quote from Complete Boiler, 11/04
1.3695	Inflation factor from 2004 to 2008 using SPBI from DOD
\$ 769,671.33	

140000	Firetube boiler, 11/04
1.3695	Inflation factor from 2004 to 2008 using SPBI from DOD
\$ 191,730.00	