```
PLANT-REPORT  SUMMARY = (BEPS)  ..

                  $ 400,000 BTU/HR HOT-WATER BOILER

SBOIL1       =PLANT-EQUIPMENT  TYPE = HW-BOILER
                               SIZE = .4 ..

                  $ 15-TON (180,000 BTU/HR) AIR-COOLED
                  $ RECIPROCATING CHILLER

CHIL1        =PLANT-EQUIPMENT  TYPE = HERM-REC-CHLR
                               SIZE = .18 ..

PLANT-PARAMETERS   HERM-REC-COND-TYPE = AIR ..

END ..
COMPUTE PLANT ..


INPUT ECONOMICS  ..

ECONOMICS-REPORT    SUMMARY = (ES-D,ES-E) ..

                  $ ELECTRICITY TARIFF (TIME-OF-DAY RATE)

ENERGY-SCH =SCHEDULE  THRU DEC 31 (WD) (1,8) (.05)        $OFF-PEAK
                                       (9,12) (.06)       $SHOULDER
                                       (13,17) (.07)      $PEAK
                                       (18,22) (.06)      $SHOULDER
                                       (23,24) (.05)      $OFF-PEAK
                                 (SAT) (1,8) (.05)        $OFF-PEAK
                                       (9,17) (.06)       $SHOULDER
                                       (18,24) (.05)      $OFF-PEAK
                               (SUN,HOL) (1,24) (.05) ..  $OFF-PEAK

ELEC-TARIFF =UTILITY-RATE   RESOURCE = ELECTRICITY
                            ENERGY-CHG-SCH = ENERGY-SCH ..
```

Boiler capacity is 0.4 MBtu/hr (400,000 Btu/hr) at rated conditions

Specifies an air-cooled condenser for the chiller. The default is water cooled.

Electricity charge varies from $0.05/kWh to $0.07/kWh depending on time of day. There are no demand charges.

```
                $ GAS TARIFF (FLAT RATE)

GAS-RATE   =UTILITY-RATE     RESOURCE = NATURAL-GAS
                             ENERGY-CHG = .60  ..

END ..
COMPUTE ECONOMICS  ..
STOP ..
```

Sample Output

SIMPLE STRUCTURE, CHICAGO EXAMPLE FOR DOE-2 BASICS MANUAL DOE-2.1E-005 Thu Mar 24 09:44:11 1994LDL RUN 1
REPORT- LV-D DETAILS OF EXTERIOR SURFACES IN THE PROJECT WEATHER FILE- TRY CHICAGO

NUMBER OF EXTERIOR SURFACES 9 RECTANGULAR 9 OTHER 0
(U-VALUE INCLUDES OUTSIDE AIR FILM; WINDOW INCLUDES FRAME, IF DEFINED)

		- - - W I N D O W S - - -		- - - - W A L L - - - -		-W A L L + W I N D O W S-		
SURFACE	SPACE	U-VALUE (BTU/HR-SQFT-F)	AREA (SQFT)	U-VALUE (BTU/HR-SQFT-F)	AREA (SQFT)	U-VALUE (BTU/HR-SQFT-F)	AREA (SQFT)	AZIMUTH
WALL-1PB	PLENUM-1	0.000	0.00	0.067	200.00	0.067	200.00	NORTH
BACK-1	SPACE3-1	0.467	180.00	0.067	620.00	0.157	800.00	NORTH
RIGHT-1	SPACE2-1	0.467	100.00	0.067	300.00	0.167	400.00	EAST
WALL-1PR	PLENUM-1	0.000	0.00	0.067	100.00	0.067	100.00	EAST
WALL-1PF	PLENUM-1	0.000	0.00	0.067	200.00	0.067	200.00	SOUTH
FRONT-1	SPACE1-1	0.467	180.00	0.067	620.00	0.157	800.00	SOUTH
WALL-1PL	PLENUM-1	0.000	0.00	0.067	100.00	0.067	100.00	WEST
LEFT-1	SPACE4-1	0.467	100.00	0.067	300.00	0.167	400.00	WEST
TOP-1	PLENUM-1	0.000	0.00	0.047	5000.00	0.047	5000.00	ROOF
F1-1	SPACE1-1	0.000	0.00	0.050	1056.00	0.050	1056.00	UNDERGRND
F2-1	SPACE2-1	0.000	0.00	0.050	456.00	0.050	456.00	UNDERGRND
F3-1	SPACE3-1	0.000	0.00	0.050	1056.00	0.050	1056.00	UNDERGRND
F4-1	SPACE4-1	0.000	0.00	0.050	456.00	0.050	456.00	UNDERGRND
F5-1	SPACE5-1	0.000	0.00	0.050	1976.00	0.050	1976.00	UNDERGRND

A verification report that summarizes your input for walls and windows

(CONTINUED)

	AVERAGE U-VALUE/WINDOWS (BTU/HR-SQFT-F)	AVERAGE U-VALUE/WALLS (BTU/HR-SQFT-F)	AVERAGE U-VALUE WALLS+WINDOWS (BTU/HR-SQFT-F)	WINDOW AREA (SQFT)	WALL AREA (SQFT)	WINDOW+WALL AREA (SQFT)
NORTH	0.467	0.067	0.139	180.00	820.00	1000.00
EAST	0.467	0.067	0.147	100.00	400.00	500.00
SOUTH	0.467	0.067	0.139	180.00	820.00	1000.00
WEST	0.467	0.067	0.147	100.00	400.00	500.00
ROOF	0.000	0.047	0.047	0.00	5000.00	5000.00
ALL WALLS	0.467	0.067	0.142	560.00	2440.00	3000.00
WALLS+ROOFS	0.467	0.054	0.082	560.00	7440.00	8000 00
UNDERGRND	0.000	0.050	0.050	0.00	5000.00	5000.00
BUILDING	0.467	0.052	0.070	560.00	12440.00	13000.00

*** BUILDING ***

FLOOR AREA	5000	SQFT	465	SQMT
VOLUME	50000	CUFT	1416	CUMT

	COOLING LOAD		HEATING LOAD	
TIME	JUL 9	4PM	JAN 1	4AM
DRY-BULB TEMP	94F	34C	3F	-16C
WET-BULB TEMP	74F	23C	2F	-17C

	SENSIBLE (KBTU/H)	SENSIBLE (KW)	LATENT (KBTU/H)	LATENT (KW)	SENSIBLE (KBTU/H)	SENSIBLE (KW)
WALL CONDUCTION	4.652	1.363	0.000	0.000	-8.071	-2.365
ROOF CONDUCTION	0.000	0.000	0.000	0.000	0.000	0.000
WINDOW GLASS+FRM COND	4.870	1.427	0.000	0.000	-17.279	-5.063
WINDOW GLASS SOLAR	11.439	3.352	0.000	0.000	1.967	0.576
DOOR CONDUCTION	0.000	0.000	0.000	0.000	0.000	0.000
INTERNAL SURFACE COND	0.000	0.000	0.000	0.000	0.000	0.000
UNDERGROUND SURF COND	-1.500	-0.440	0.000	0.000	-7.500	-2.197
OCCUPANTS TO SPACE	11.302	3.312	6.776	1.985	0.000	0.000
LIGHT TO SPACE	17.469	5.118	0.000	0.000	1.024	0.300
EQUIPMENT TO SPACE	11.113	3.256	0.000	0.000	0.341	0.100
PROCESS TO SPACE	0.000	0.000	0.000	0.000	0.000	0.000
INFILTRATION	0.000	0.000	0.000	0.000	-10.335	-3.028
TOTAL	59.345	17.388	6.776	1.985	-39.853	-11.677
TOTAL LOAD	66.121 KBTU/H		19.373 KW		-39.853 KBTU/H	-11.677 KW
TOTAL LOAD / AREA	13.22BTU/H.SQFT		41.707 W /SQMT		7.971BTU/H.SQFT	25.138 W /SQMT

Building peak sensible load

```
**********************************************************************
*                                                                    *
*  NOTE  1)THE ABOVE LOADS EXCLUDE OUTSIDE VENTILATION AIR           *
*  ----    LOADS                                                     *
*        2)TIMES GIVEN IN STANDARD TIME FOR THE LOCATION             *
*          IN CONSIDERATION                                          *
*                                                                    *
**********************************************************************
```

	COOLING						HEATING						ELEC	
MONTH	COOLING ENERGY (MBTU)	TIME OF DY	TIME MAX HR	DRY-BULB TEMP	WET-BULB TEMP	MAXIMUM COOLING LOAD (KBTU/HR)	HEATING ENERGY (MBTU)	TIME OF DY	TIME MAX HR	DRY-BULB TEMP	WET-BULB TEMP	MAXIMUM HEATING LOAD (KBTU/HR)	ELEC-TRICAL ENERGY (KWH)	MAXIMUM ELEC LOAD (KW)
JAN	3.61765	25	16	48.F	42.F	32.370	-10.718	1	4	3.F	2.F	-39.853	2900.	11.500
FEB	2.91748	28	15	52.F	42.F	29.969	-10.155	4	6	7.F	6.F	-39.308	2519.	11.500
MAR	4.38126	7	15	51.F	44.F	32.935	-8.068	24	5	9.F	8.F	-39.848	2785.	11.500
APR	8.35311	26	16	76.F	60.F	46.253	-2.829	8	6	32.F	29.F	-18.915	2889.	11.500
MAY	10.47598	21	14	72.F	65.F	50.639	-1.483	6	5	39.F	35.F	-12.469	2900.	11.500
JUN	12.92988	20	15	90.F	77.F	56.127	-0.405	23	5	52.F	48.F	-6.481	2657.	11.500
JUL	17.19420	9	15	94.F	74.F	59.345	-0.016	1	5	60.F	54.F	-1.445	2900.	11.500
AUG	15.89793	20	15	88.F	72.F	57.303	-0.040	5	5	55.F	54.F	-3.582	2900.	11.500
SEP	11.40049	11	14	87.F	72.F	54.144	-0.755	23	6	37.F	34.F	-11.212	2657.	11.500
OCT	9.45966	10	17	71.F	52.F	46.758	-2.082	21	6	30.F	29.F	-15.509	2900.	11.500
NOV	4.79854	1	16	72.F	59.F	45.574	-6.278	30	22	34.F	32.F	-25.352	2542.	11.500
DEC	3.74102	10	15	41.F	35.F	32.366	-9.719	8	20	18.F	16.F	-34.249	2785.	11.500
TOTAL	105.167						-52.546						33336.	
MAX						59.345						-39.853		11.500

SYSTEM NAME	SYSTEM TYPE	ALTITUDE MULTIPLIER	FLOOR AREA (SQFT)	MAX PEOPLE
SYST-1	VAVS	1.020	5000.0	52.

All air flows in this report are at building's altitude
(CFM at building's altitude = 1.02 x CFM at sea level)

SUPPLY FAN (CFM)	ELEC (KW)	DELTA-T (F)	RETURN FAN (CFM)	ELEC (KW)	DELTA-T (F)	OUTSIDE AIR RATIO	COOLING CAPACITY (KBTU/HR)	SENSIBLE (SHR)	HEATING CAPACITY (KBTU/HR)	COOLING EIR (BTU/BTU)	HEATING EIR (BTU/BTU)
4287.	4.933	3.6	0.	0.000	0.0	0.247	138.293	0.751	-36.909	0.00	0.37

ZONE NAME	SUPPLY FLOW (CFM)	EXHAUST FLOW (CFM)	FAN (KW)	MINIMUM FLOW RATIO	OUTSIDE AIR FLOW (CFM)	COOLING CAPACITY (KBTU/HR)	SENSIBLE (SHR)	EXTRACTION RATE (KBTU/HR)	HEATING CAPACITY (KBTU/HR)	ADDITION RATE (KBTU/HR)	MULTIPLIER
SPACE5-1	1282.	0.	0.000	0.300	408.	0.00	0.00	24.91	-80.28	-66.44	1.0
SPACE1-1	943.	0.	0.000	0.300	224.	0.00	0.00	18.33	-59.05	-48.87	1.0
SPACE2-1	557.	0.	0.000	0.300	102.	0.00	0.00	10.82	-34.88	-28.87	1.0
SPACE3-1	970.	0.	0.000	0.300	224.	0.00	0.00	18.86	-60.78	-50.30	1.0
SPACE4-1	535.	0.	0.000	0.300	102.	0.00	0.00	10.41	-33.54	-27.76	1.0
PLENUM-1	0.	0.	0.000	0.000	0.	0.00	0.00	0.00	0.00	0.00	1.0

System design air flow

Zone design air flow

Air handling unit cooling coil capacity

Heating capacity of zone reheat coils

REPORT- SS-A SYSTEM MONTHLY LOADS SUMMARY FOR SYST-1 WEATHER FILE- TRY CHICAGO

	COOLING						HEATING						ELEC	
MONTH	COOLING ENERGY (MBTU)	TIME OF DY	TIME MAX HR	DRY-BULB TEMP	WET-BULB TEMP	MAXIMUM COOLING LOAD (KBTU/HR)	HEATING ENERGY (MBTU)	TIME OF DY	TIME MAX HR	DRY-BULB TEMP	WET-BULB TEMP	MAXIMUM HEATING LOAD (KBTU/HR)	ELEC-TRICAL ENERGY (KWH)	MAXIMUM ELEC LOAD (KW)
JAN	0.00000					0.000	-23.934	7	7	0.F	0.F	-350.612	3087.	12.870
FEB	0.00000					0.000	-18.851	11	8	5.F	4.F	-339.455	2675.	13.146
MAR	0.00000					0.000	-12.056	25	8	14.F	12.F	-324.448	2923.	12.992
APR	0.86978	29	18	69.F	65.F	27.563	-3.158	1	8	43.F	39.F	-204.168	3008.	12.129
MAY	3.12705	21	14	85.F	75.F	82.950	-0.411	13	9	47.F	43.F	-24.252	3072.	13.370
JUN	10.06826	20	18	91.F	78.F	128.275	0.000					0.000	2995.	14.226
JUL	19.69629	8	16	92.F	74.F	135.655	0.000					0.000	3571.	16.285
AUG	16.73584	26	17	94.F	76.F	119.250	0.000					0.000	3438.	14.786
SEP	6.23417	11	16	86.F	72.F	98.931	-0.082	23	9	39.F	36.F	-25.422	2900.	14.106
OCT	1.61761	31	15	76.F	65.F	42.963	-1.307	21	8	30.F	29.F	-160.970	3016.	12.608
NOV	0.28201	1	16	72.F	59.F	40.150	-9.284	18	8	34.F	34.F	-243.553	2661.	12.746
DEC	0.00000					0.000	-17.754	9	8	13.F	12.F	-319.821	2941.	12.540
TOTAL	58.631						-86.836						36287.	
MAX						135.655						-350.612		16.285

Total cooling coil load passed to the chiller

Maximum cooling load passed to the chiller

Includes lights, plug loads, and fans

ENERGY TYPE:	ELECTRICITY	NATURAL-GAS
UNITS:	MBTU	
CATEGORY OF USE		
AREA LIGHTS	74.7	0.0
MISC EQUIPMT	39.0	0.0
SPACE HEAT	6.8	141.4
SPACE COOL	19.7	0.0
HEAT REJECT	4.4	0.0
PUMPS & MISC	3.6	0.0
VENT FANS	10.1	0.0
TOTAL	158.4	141.4

TOTAL SITE ENERGY	299.72 MBTU	59.9 KBTU/SQFT-YR GROSS-AREA	59.9 KBTU/SQFT-YR NET-AREA
TOTAL SOURCE ENERGY	616.51 MBTU	123.3 KBTU/SQFT-YR GROSS-AREA	123.3 KBTU/SQFT-YR NET-AREA

PERCENT OF HOURS ANY SYSTEM ZONE OUTSIDE OF THROTTLING RANGE = 1.1
PERCENT OF HOURS ANY PLANT LOAD NOT SATISFIED = 0.0

NOTE: ENERGY IS APPORTIONED HOURLY TO ALL END-USE CATEGORIES.

SIMPLE STRUCTURE, CHICAGO EXAMPLE FOR DOE-2 BASICS MANUAL DOE-2.1E-005 Thu Mar 24 09:44:11 1994EDL RUN 1
REPORT- ES-D ENERGY COST SUMMARY

UTILITY-RATE	RESOURCE	METERS	METERED ENERGY UNITS/YR	TOTAL CHARGE ($)	VIRTUAL RATE ($/UNIT)	RATE USED ALL YEAR?
ELEC-TARIFF	ELECTRICITY	1 2 3 4 5	46403. KWH	2943.	0.0634	YES
GAS-RATE	NATURAL-GAS	1 2 3 4 5	1414. THERM	848.	0.6000	YES
				3792.		
			ENERGY COST/GROSS BLDG AREA:	0.76		
			ENERGY COST/NET BLDG AREA:	0.76		

Total charge divided by metered energy

UTILITY-RATE: ELEC-TARIFF
RESOURCE: ELECTRICITY
METERS: 1 2 3 4 5
POWER-FACTOR: 0.80
DEMAND-WINDOW: HOUR
BILLING-DAY: 31
EXCESS-KVAR-FRAC: 0.30
3413. BTU/KWH
RATE-LIMITATION: 0.0000
EXCESS-KVAR-CHG: 0.0000

RATE-QUALIFICATIONS
MIN-ENERGY: 0.0
MAX-ENERGY: 0.0
MIN-DEMAND: 0.0
MAX-DEMAND: 0.0
QUALIFY-RATE: ALL-MONTHS
USE-MIN-QUAL: NO

BLOCK-CHARGES

DEMAND-RATCHETS

MIN-MON-RATCHETS

MONTH	METERED ENERGY KWH	BILLING ENERGY KWH	METERED DEMAND KW	BILLING DEMAND KW	ENERGY CHARGE ($)	DEMAND CHARGE ($)	ENERGY CST ADJ ($)	TAXES ($)	SURCHRG ($)	FIXED CHARGE ($)	MINIMUM CHARGE ($)	VIRTUAL RATE ($/UNIT)	TOTAL CHARGE ($)
JAN	3718	3718	15.8	15.8	233	0	0	0	0	0	0	0.0626	233
FEB	3176	3176	16.1	16.1	199	0	0	0	0	0	0	0.0627	199
MAR	3302	3302	15.9	15.9	208	0	0	0	0	0	0	0.0629	208
APR	3307	3307	16.6	16.6	210	0	0	0	0	0	0	0.0634	210
MAY	3588	3588	22.4	22.4	229	0	0	0	0	0	0	0.0637	229
JUN	4338	4338	27.5	27.5	278	0	0	0	0	0	0	0.0640	278
JUL	5881	5881	30.1	30.1	375	0	0	0	0	0	0	0.0638	375
AUG	5495	5495	27.6	27.6	351	0	0	0	0	0	0	0.0639	351
SEP	3785	3785	25.5	25.5	242	0	0	0	0	0	0	0.0639	242
OCT	3379	3379	19.3	19.3	215	0	0	0	0	0	0	0.0636	215
NOV	3006	3006	18.4	18.4	189	0	0	0	0	0	0	0.0630	189
DEC	3429	3429	15.5	15.5	216	0	0	0	0	0	0	0.0629	216
TOTAL	46403	46403	30.1		2943	0	0	0	0	0		0.0634	2943

Summary of electricity charges

UTILITY-RATE: GAS-RATE RESOURCE: NATURAL-GAS DEMAND-WINDOW: HOUR 100000. BTU/THERM
METERS: 1 2 3 4 5 BILLING-DAY: 31 RATE-LIMITATION: 0.0000

RATE-QUALIFICATIONS

MIN-ENERGY: 0.0
MAX-ENERGY: 0.0
MIN-DEMAND: 0.0
MAX-DEMAND: 0.0
QUALIFY-RATE: ALL-MONTHS
USE-MIN-QUA': NO

BLOCK-CHARGES

DEMAND-RATCHETS

MIN-MON-RATCHETS

MONTH	METERED ENERGY THERM	BILLING ENERGY THERM	METERED DEMAND THERMS	BILLING DEMAND THERMS	ENERGY CHARGE ($)	DEMAND CHARGE ($)	ENERGY CST ADJ ($)	TAXES ($)	SURCHRG ($)	FIXED CHARGE ($)	MINIMUM CHARGE ($)	VIRTUAL RATE ($/UNIT)	TOTAL CHARGE ($)
JAN	382	382	4.5	4.5	229	0	0	0	0	0	0	0.6000	229
FEB	301	301	4.4	4.4	181	0	0	0	0	0	0	0.6000	181
MAR	199	199	4.2	4.2	120	0	0	0	0	0	0	0.6000	120
APR	55	55	2.9	2.9	33	0	0	0	0	0	0	0.6000	33
MAY	9	9	0.4	0.4	5	0	0	0	0	0	0	0.6000	5
JUN	0	0	0.0	0.0	0	0	0	0	0	0	0	0.0000	0
JUL	0	0	0.0	0.0	0	0	0	0	0	0	0	0.0000	0
AUG	0	0	0.0	0.0	0	0	0	0	0	0	0	0.0000	0
SEP	2	2	0.5	0.5	1	0	0	0	0	0	0	0.6000	1
OCT	24	24	2.4	2.4	15	0	0	0	0	0	0	0.6000	15
NOV	155	155	3.3	3.3	93	0	0	0	0	0	0	0.6000	93
DEC	286	286	4.2	4.2	171	0	0	0	0	0	0	0.6000	171
TOTAL	1414	1414	4.5		848	0	0	0	0	0		0.6000	848

Summary of gas charges