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BLEED CYCLE PROPELLANT PUMPING IN A GAS-CORE NUCLEAR ROCKET ENGINE SYSTEM

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16. Abstract

The performance of ideal and real staged primary propellant pumps and bleed-powered turbines was calculated for gas-core nuclear rocket engines over a range of operating pressures from 500 to 5000 atm. This study showed that for a required engine operating pressure of 1000 atm the pump work was about 1315 W/(kg/sec) (0.8 hp/(lb/sec)); the specific impulse penalty resulting from the turbine propellant bleed flow as about 10 percent; and the heat required to preheat the propellant was about 17.2 MW/(kg/sec) (7.8 MN/(lb/sec)). For a specific impulse above 2400 sec, there is an excess of energy available in the moderator due to the gamma and neutron heating that occurs there. Possible alternative pumping cycles are the Rankine or Brayton cycles.

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SUMMARY

In order to maintain a critical mass in a gas-core nuclear rocket engine, the operating pressure must be about 500 atmospheres, or higher. The question arises as to whether the propellant can be pumped to this high pressure. A bleed cycle that would use the gamma and neutron heat deposited in the moderator as a heat source and a turbine as a work source to drive the pump was considered in this study. Ideal and real staged pumps and turbines were considered. The range of engine operating pressures investigated was from 500 to 5000 atmospheres, thus making hydrogen property extrapolation necessary.

This study showed that for a required engine operating pressure of 1000 atmospheres the pump work was about 1315 watts per kilogram per second (0.8 hp/(lb/sec)); the specific impulse penalty resulting from dumping the turbine bleed flow was about 10 percent; and the required heat addition to the propellant was about 17.2 megawatts per kilogram per second (7.8 MW/(lb/sec)). For a specific impulse above 2400 seconds, there is more than enough energy deposited in the moderator by gamma and neutron heating to pump the propellant to operating conditions. This report showed that possible alternative cycles (such as a Rankine or Brayton cycle) should be considered. These cycles would probably not have as severe a specific impulse penalty as the bleed cycle considered. They would, however, be more mechanically complex.

INTRODUCTION

The gas-core nuclear rocket features a high specific impulse (2000 to 7000 sec) and a moderately high thrust (4.45×10^4 to 4.45×10^5 N, or 10 000 to 100 000 lbf). In order to maintain a critical mass, this rocket must operate at high pressures (at or above 500 atm; ref. 1). The question arises as to whether the propellant can be pumped to this high pressure.

There are two facets to this question: first, the physical design of the pump; and second, the mechanical energy necessary to drive the pump. The physical design of a high-pressure pump is beyond the scope of this report, but it can be conceptually envisioned as a series of stages of low-pressure pumps. Each low-pressure pump would probably be designed to pump across a maximum pressure difference. (Pressure difference is used rather than pressure ratio because seal leakage would probably be the limiting quantity rather than aerodynamic instability, for which pressure ratio would be the important variable.) An estimation of the amount of mechanical energy necessary to drive the pump, and determining possible sources of this energy, are the objectives of this report.

Roughly 7 percent of the reactor power is deposited in the moderator from thermalization of the neutrons and gamma rays. Part or all of this energy can be used to drive the pump, the rest must be either regeneratively removed or radiated to space. This energy is available at the maximum allowable moderator temperature. The problem then is how to best use this energy to pump the propellant to the required engine pressure without incurring any undue penalty on engine performance due to such things as additional system weight or complexity or a reduction in specific impulse due to dumping turbine bleed flow.

References 2 and 3 are studies of topping and bleed cycles for nuclear rocket applications. Reference 2 reports the conclusion that about 1000 atmospheres was the limit on the engine pressure to which the propellant could be pumped by using a topping cycle. The reason for this was that the overall thermodynamic efficiency of the topping cycle was low. The present study evaluates a bleed cycle, which is basically a simpler and more efficient cycle but which does involve a specific impulse penalty. At the same time, an auxiliary Carnot cycle is used to evaluate the applicability of Rankine and Brayton cycles to gas-core propellant pumping (at least in a cursory manner, to establish their degree of potential usefulness).

SYMBOLS

h	enthalpy per unit mass
Δh	enthalpy change across stage
$\dot{m}$	mass flow of propellant
p	pressure
Q	heat transferred per unit mass flow
s	entropy per unit mass
T	temperature

V	volume
W	work per unit mass flow
ΔW	work of each stage
η_{mass}	ratio of bleed to total propellant flow
η_{comp}	ratio of ideal to real work of compressor or pump
η_{turb}	ratio of real to ideal work of turbine

Subscripts:

aux	auxiliary engine between heat exchanger and moderator
b	bleed flow
comp	compressor or pump
exh	exhaust condition
hex	heat exchanger
max	maximum value in cycle
mod	moderator
sat	saturation conditions
turb	turbine

ANALYSIS

The overall engine propellant bleed cycle is shown in figure 1. The hydrogen propellant is pumped from tank storage conditions (saturated conditions; 0.5 atm) to the required engine pressure. Part of the gamma and neutron heat deposited in the moderator is then transferred to the propellant in a heat exchanger, heating the propellant to the maximum allowable temperature. A relatively small part of this heated propellant is then bled off and expanded through the turbine to provide the shaft work for the pump. The bleed flow is expanded to some low pressure (say 10 atm) and then discharged to space. The primary propellant stream flows directly from the heat exchanger to the engine cavity.

The ideal performance of this system is shown in figure 2. The propellant is isentropically pumped from saturated conditions to the pump discharge pressure. The propellant is then heated at constant pressure (by the waste heat of an auxiliary moderator cooling cycle) to the maximum allowable temperature. A fraction of the propellant is then isothermally expanded through a turbine to exhaust conditions.

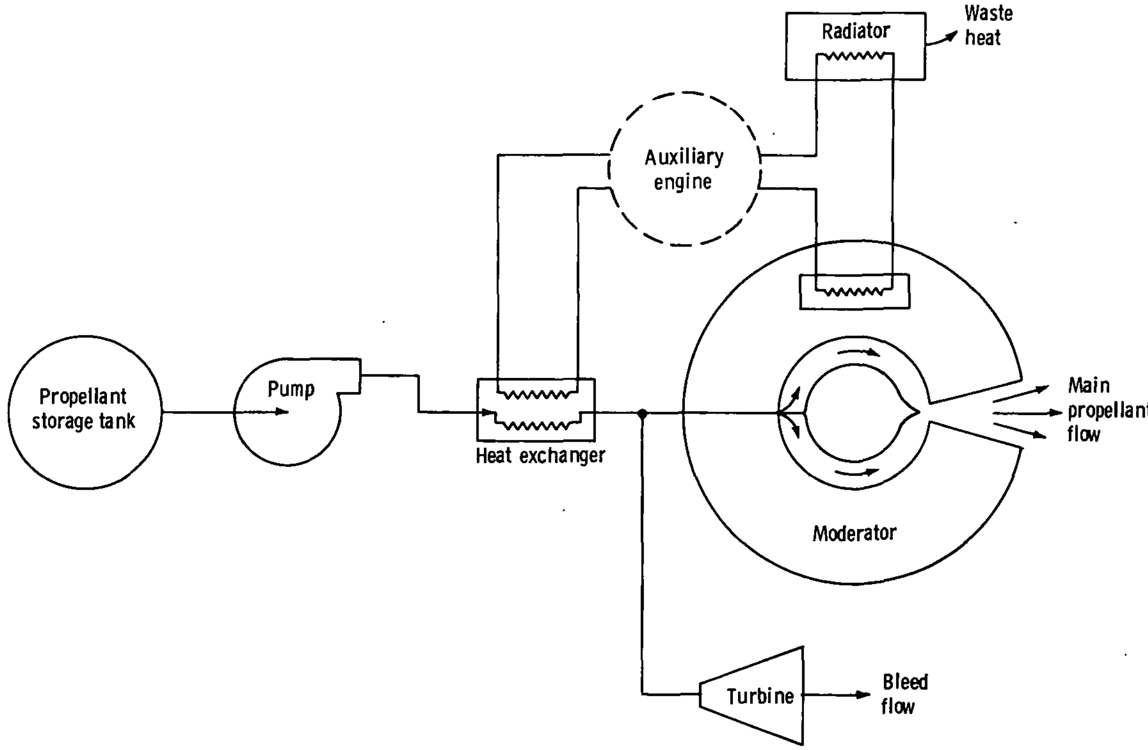


Figure 1. - Bleed cycle used to pump propellant for gas-core nuclear rocket engine system.

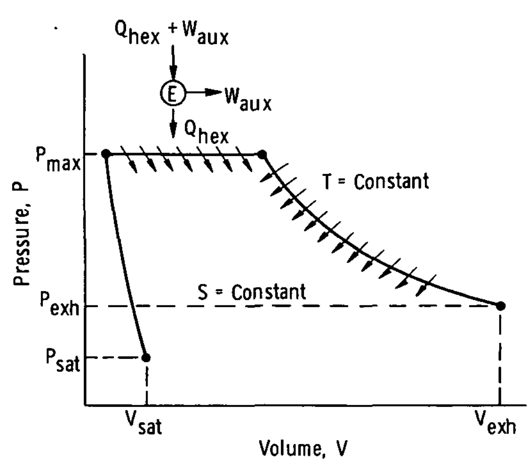


Figure 2. - Pressure-volume diagram for ideal bleed cycle.

Isothermal expansion through a turbine can be approximated by a turbine with many stages; after each stage, the fluid is reheated to the original inlet temperature. In actual practice, the ideal performance of this cycle could not be achieved. It is only presented as a limiting case to provide an idea of the maximum cycle efficiency possible, and to indicate the degree of improvement that might be available by using a series of turbine-reheater stages. An overall engine design study would be required to determine whether the increased mechanical complexity and increased system weight would override the increased efficiency afforded by turbine interstage heating.

Per unit mass flow rate, the following relations are true for this ideal cycle:

$$\left.\begin{aligned}
W_{comp} &= h(P_{max}, S_{sat}) - h(P_{sat}, S_{sat}) \\
Q_{hex} &= h(T_{max}, P_{max}) - h(P_{max}, S_{sat}) \\
W_{aux} &= T_{max}\left[S(T_{max}, P_{max}) - S_{sat}\right] - Q_{hex} \\
Q_{turb} &= T_{max}\left[S(T_{max}, P_{max}) - S(T_{max}, P_{exh})\right] \\
W_{turb} &= h(T_{max}, P_{max}) - h(T_{max}, P_{exh}) - Q_{turb}
\end{aligned}\right\} \tag{1}$$

The fraction of the total propellant flow that is bled through the turbine is

$$\eta_{mass} = \frac{\dot{m}_b}{\dot{m}} = \frac{W_{comp}}{W_{turb}} \tag{2}$$

The amount of energy used from the moderator per unit mass flow rate is

$$Q_{mod} = \left[h(T_{max}, P_{max}) - h(P_{sat}, S_{sat})\right](1 - \eta_{mass}) + \left[h(T_{max}, P_{exh}) - h(P_{sat}, S_{sat})\right]\eta_{mass} \quad . \tag{3}$$

In a real cycle both the pump and turbine would be staged, and the performance of each stage would be nonisentropic. The efficiency of the pump and turbine stages is defined as

$$
\left.
\begin{aligned}
\eta_{comp} &= \frac{\Delta h(\text{isentropic})}{\Delta h(\text{real})} \\
\eta_{turb} &= \frac{\Delta h(\text{real})}{\Delta h(\text{isentropic})}
\end{aligned}
\right\} \tag{4}
$$

where

$$\Delta h(\text{real}) = W$$

To obtain more power from the turbine and to approximate the isothermal expansion, the bleed propellant can be reheated to the maximum temperature after each turbine stage. The amount of energy used to heat the bleed propellant after each stage per unit flow is

$$Q_{turb} = \Delta H(\text{isothermal}) - \Delta H(\text{real}) \tag{5}$$

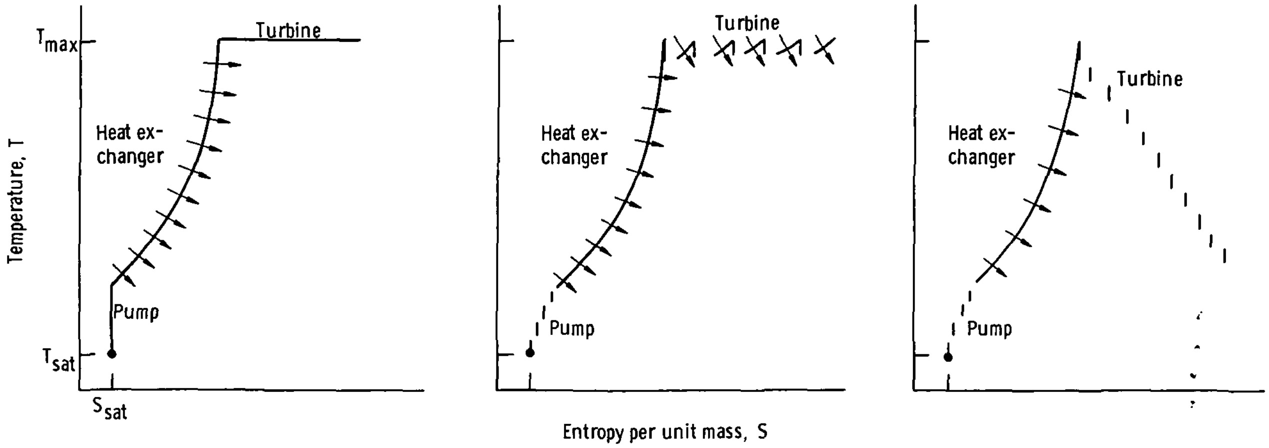
These relations are applied as many times as there are stages.

DISCUSSION

The objective of this report was to determine whether there was enough energy available to pump the propellant of the gas-core nuclear rocket to the required operating pressure range. A "bleed cycle" was chosen because of its simplicity; it is illustrated in figures 1 to 3.

Three cases were analyzed. The first case had an ideal pump and an ideal turbine and used turbine interstage heat addition to achieve a constant temperature expansion in the turbine. The second case had a real (efficiency less than 1) pump and a real turbine, but still utilized heat addition after each turbine stage. The third case was the same as the second case except that the turbine expansion process was adiabatic.

The efficiencies of the real pump and turbine stages were assumed to be 85 percent, and each stage had a pressure difference of 100 atmospheres. For all three cases the tank storage condition was 0.5 atmospheres and the turbine exhaust pressure was assumed to be 10 atmospheres. The maximum available propellant temperature from the moderator was assumed to be either 944 or 1111 K (1700° or 2000° R). The required engine operating pressure ranged from 500 to 5000 atmospheres. The properties of the hydrogen propellant were not available in this high-pressure range. A computer code tabulation of hydrogen properties (ref. 4) was extrapolated to provide property estimates for this study. The equations given in the analysis section were programmed and used



(a) Ideal case: constant entropy compression, constant pressure heating, constant temperature expansion.

(b) Nonadiabatic case: real staged compression, constant pressure heating, real staged expansion with interstage heating.

(c) Adiabatic case: real staged compression, constant pressure heating, real staged expansion with no interstage heating.

Figure 3. - Temperature-entropy diagram for three bleed cycles considered. (Only reversible portion of cycle shown on diagram.)

to obtain the results of this study. A discussion of the program is given in the appendix. The numerical results are tabulated in tables I to III for all cases calculated.

Figure 4 shows, as a function of pump exhaust pressure (operating pressure), the work required to pump propellant from storage conditions to operating pressures and the work available from an auxiliary Carnot cycle operating between the moderator and the heat exchanger. This work is per unit mass flow rate of propellant through the pump or the heat exchanger.

The required pump work ranges from about 821.5 watts per kilogram per second (0.5 hp/(lb/sec)) at 500 atmospheres to about 5750 watts per kilogram per second (3.5 hp/(lb/sec)) at 5000 atmospheres. At 1000 atmospheres, the required pump work is about 1315 watts per kilogram per second (0.8 hp/(lb/sec)) for a real pump. The work available from an auxiliary cycle is at least several times the work required by the pump. This suggests the possible use of a Rankine or Brayton cycle instead of the bleed cycle. These cycles were not considered in this study; and therefore, this source of available work has been neglected. A further evaluation might disclose worthwhile gains available by using a Rankine or Brayton cycle.

Figure 5 shows the ratio of required pump work to available turbine work per unit mass flow rate through the pump and the turbine. This ratio is also the ratio of bleed flow rate to total flow rate in the bleed cycle. This ratio varies from less than 0.1 at 500 atmospheres to less than 0.4 at 5000 atmospheres. At 1000 atmospheres, this bleed ratio - which is also the specific impulse penalty - is about 10 percent for a real pump and a real nonadiabatic turbine. Thus for a 5000-second specific impulse engine, the bleed cycle penalty would be 500 seconds.

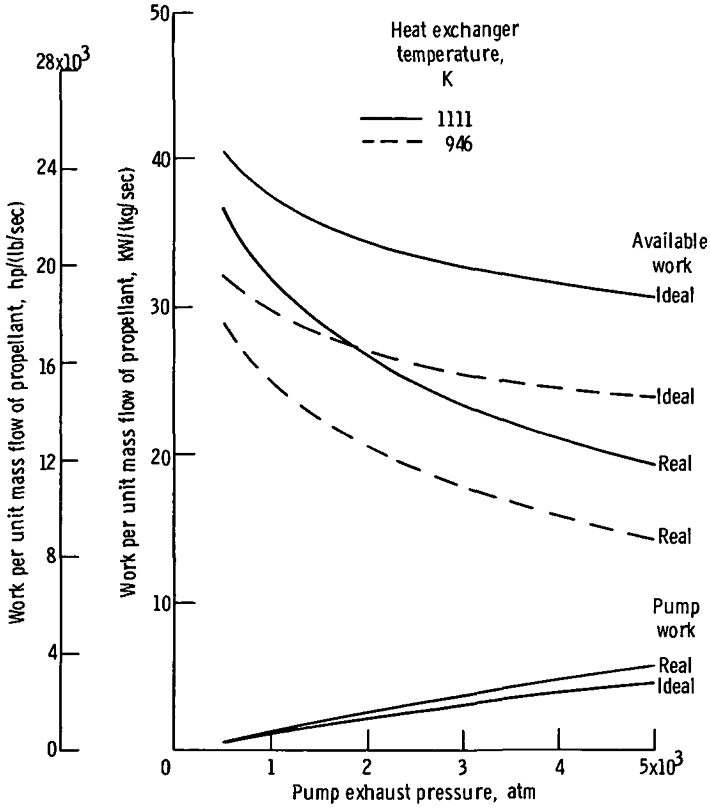


Figure 4. - Work per unit mass flow of propellant as function of pump exhaust pressure for ideal and real cases. Efficiency, 0.85.

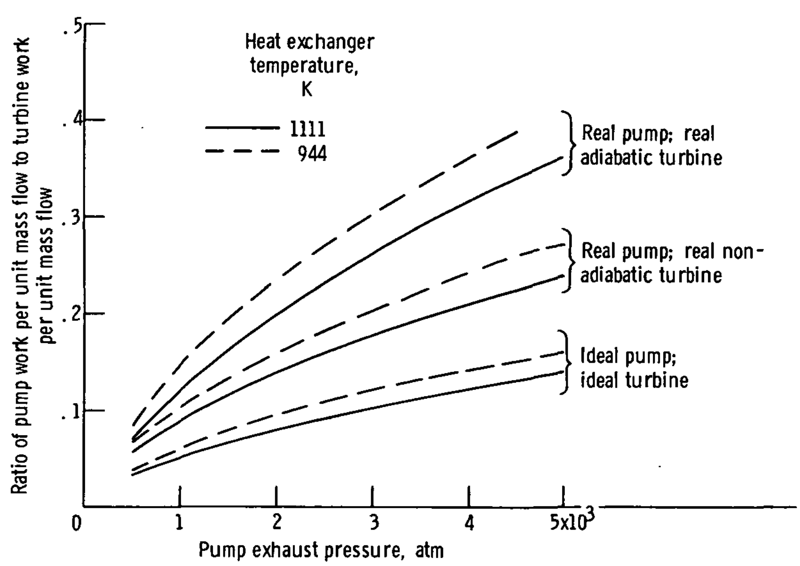


Figure 5. - Ratio of pump work per unit mass flow to turbine work per unit mass flow, as function of pump exhaust pressure, for ideal, nonadiabatic, and adiabatic turbine cases. Efficiencies, 0.85; turbine exhaust pressure, 10 atmospheres.

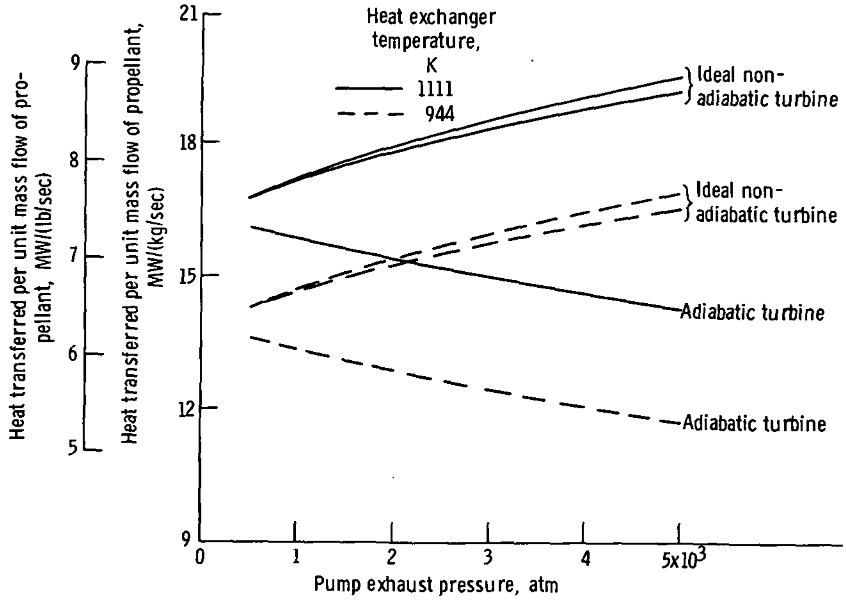


Figure 6. - Heat transferred per unit mass flow of propellant as function of pump exhaust pressure for ideal, nonadiabatic, and adiabatic turbine cases. Efficiencies, 0.85; turbine exhaust pressure, 10 atmospheres; all propellant heated to heat exchanger temperature.

Figure 6 shows the required heat transfer from the moderator to the propellant (assuming no auxiliary engine). This heat transfer is per unit mass flow rate of propellant through the heat exchanger plus the required bleed flow rate through the turbine. The required heat is less than 19.8 megawatts per kilogram per second (9 MW/(lb/sec)). At 1000 atmospheres, the required heat transfer is about 17.2 megawatts per kilogram per second (7.8 MW/(lb/sec)) for a real pump, a heat exchanger operating at 1111 K (2000° R), and a real nonadiabatic turbine.

Figure 7 shows the amount of energy generated in the fissioning plasma and the amount of energy deposited in the moderator (7 percent of energy generated). This heat transfer rate is per unit mass flow rate of propellant through the reactor cavity and is plotted as a function of reactor cavity specific impulse. From figure 6 the maximum heat transfer rate from the moderator to the heat exchanger was about 19.8 megawatts per kilogram per second (9 MW/(lb/sec)) per unit mass flow rate of total propellant flow. If the bleed flow is small, the flow through the cavity is approximately equal to the total flow. Therefore, figure 7 shows that, above 2400 seconds specific impulse, there is an excess of energy available to pump the propellant to operating conditions.

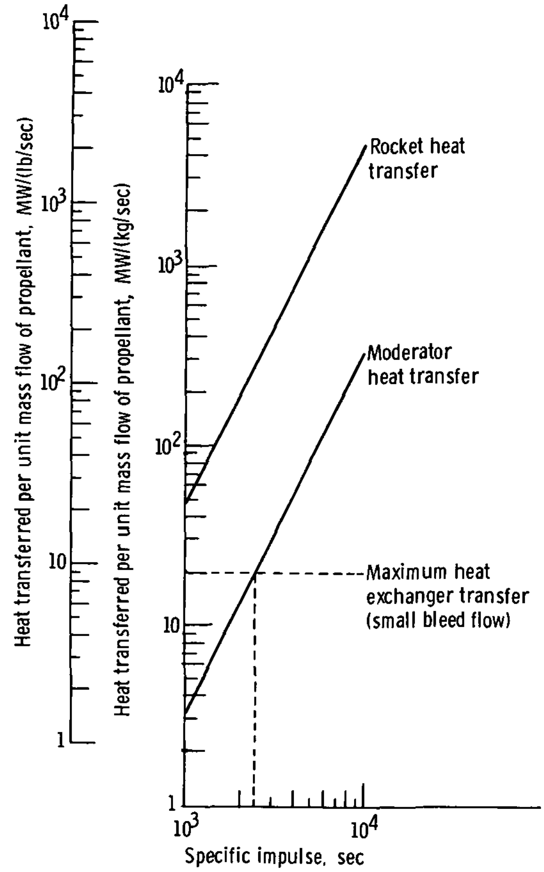


Figure 7. - Heat transferred from nuclear fissions to propellant or moderator, as function of specific impulse.

CONCLUSIONS

This study has shown that it is energetically and thermodynamically possible to pump the propellant of a gas-core nuclear rocket to as high as 5000 atmospheres. With a bleed cycle, the specific impulse penalty was less than 40 percent for all cases considered. For a typical gas-core operating pressure of 1000 atmospheres the required pump work was 1315 watts per kilogram per second (0.8 hp/(lb/sec)); the specific impulse penalty was about 10 percent; and the heat transferred from the moderator to preheat the hydrogen to the turbine inlet temperature was about 17.2 megawatts per kilogram per second (7.8 MW/(lb/sec)). For specific impulses above 2400 seconds, there is an excess of energy available in the moderator to pump the propellant to operating conditions. Future work areas that should be investigated include an assessment of a Rankine or Brayton cycle as possible alternatives to the bleed cycle studies in this report and an improvement in the accuracy of the property estimates used in the calculation.

Lewis Research Center,
National Aeronautics and Space Administration,
Cleveland, Ohio, December 1, 1971,
112-28.

APPENDIX - COMPUTER SOLUTION OF THERMODYNAMIC RELATIONS FOR GAS-CORE TURBOPUMP BLEED CYCLE

The equations from the analysis section were programmed for three cases. The cases considered were the following: first, an "ideal case," which had an ideal pump and an ideal isothermal turbine; second, a "nonadiabatic case," which had a real staged pump and a real staged turbine with interstage heating; third, an "adiabatic case," which had a real staged pump and a real staged turbine with no interstage heating. Input quantities for the computing code were storage pressure, maximum pressure, maximum temperature, and exhaust pressure. In addition, for the nonadiabatic and adiabatic cases, the pressure difference and efficiency of the compressor and of turbine stages were input quantities.

The output from the code gave properties at storage tank conditions, at compressor exhaust conditions, at heat exchanger exhaust conditions, and at turbine exhaust conditions. Additional output included the ratio of compressor to turbine work per unit flow through the compressor and turbine, the compressor work per unit flow through the compressor, the available work from an auxiliary Carnot cycle per unit flow through the heat exchanger, and the heat transferred to the heat exchanger per unit flow through the heat exchanger. The results of this code are tabulated in tables I to III.

The calculation proceeded as follows: The propellant is initially in the storage tank at saturation conditions. Once the storage pressure is given, the other thermodynamic properties are found from subroutine BW (ref. 4). The propellant is then pumped through the first stage of the compressor. If the compressor is ideal, the entropy at the exhaust of the compressor stage is the same as at the inlet (a known value). The pressure difference across the stage and the inlet pressure are used to obtain the exhaust pressure. For the ideal compressor stage, knowing the inlet entropy and pressure and using subroutine BW gives the ideal exhaust thermodynamic properties. The ideal work necessary to drive the compressor stage is the difference in enthalpies across the stage. If the compressor is not ideal, the real work is the ideal work divided by the compressor stage efficiency. Since energy must be conserved, the real exhaust enthalpy is the inlet enthalpy plus the real work. The real exhaust thermodynamic properties are given from the exhaust pressure, the exhaust enthalpy, and subroutine BW. This process is repeated until the propellant is pumped to operating pressures.

After the propellant is pumped to operating pressure, it flows into the heat exchanger, where the propellant is heated at constant pressure to the maximum allowable temperature. The thermodynamic properties at the inlet of the heat exchanger are the same as those at the exhaust of the pump (which are known). The thermodynamic properties at the exhaust of the heat exchanger are found from the exhaust pressure (maximum pressure), the exhaust temperature (maximum temperature), and subroutine BW.

The heat absorbed by the heat exchanger is given by the difference in enthalpies of the propellant across the heat exchanger. The work available from an auxiliary Carnot cycle between the moderator and the heat exchanger is given by the maximum temperature of the propellant in the heat exchanger multiplied by the entropy difference of the propellant across the heat exchanger, minus the heat absorbed by the propellant in the heat exchanger.

The majority of the propellant flows from the heat exchanger into the cavity of the gas-core nuclear rocket. A small fraction of the propellant, the bleed flow, flows from the heat exchanger through a turbine and is then dumped into space. The work of this turbine is used to drive the compressor.

The bleed flow passes through the first stage of the turbine. If the turbine is ideal, the entropy at the exhaust of the turbine stage is the same as at the inlet (a known value). The pressure difference across the stage and the inlet pressure determine the exhaust pressure. For the ideal turbine stage, knowing the inlet entropy and pressure and using subroutine BW gives the ideal exhaust thermodynamic properties. The ideal work of the turbine stage is given by the difference in enthalpies across the stage. If the turbine is not ideal, the real work is the ideal work times the turbine stage efficiency. Since energy must be conserved, the real exhaust enthalpy is given by the inlet enthalpy minus the real work. The real exhaust thermodynamic properties are obtained from the exhaust pressure, the exhaust enthalpy, and subroutine BW.

If the turbine is nonadiabatic, a heat exchanger is placed between each stage of the turbine. The bleed flow passes from the exhaust of the first turbine stage through a heat exchanger, where it is heated (at constant pressure) from the exhaust temperature to the maximum allowable temperature. The thermodynamic properties at the inlet of the heat exchanger are the same as those at the exhaust of the turbine stage (which are known). The thermodynamic properties at the exhaust of the heat exchanger are found from the exhaust pressure (turbine stage exhaust pressure), the exhaust temperature (maximum temperature), and subroutine BW. The heat absorbed by the heat exchanger is given by the difference in enthalpies of the bleed flow across the heat exchanger. This process is repeated until the bleed flow is expanded to the turbine exhaust pressure.

The total compressor or turbine work per unit mass flow through it is given by the sum of the work per unit mass flow for each stage. The fraction of the total propellant flow that is bled through the turbine is the ratio of total compressor work (per unit mass flow through it) to total turbine work (per unit mass flow through it). The total amount of heat transferred is the amount of heat transferred to the propellant flowing into the cavity plus the amount of heat transferred to the bleed flow.

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TABLE I. - IDEAL TURBINE CYCLE

(a) SI units

STORAGE PRESSURE (N/M**2)	COMPRESSOR PRESSURE (N/M**2)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS AT EXIT OF TURB. STAGE (N/M**2)
5.07E+04	5.066E+07	944.4	1.01E+06

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (W/(KG/S))	AVAILABLE WORK (W/(KG/S))	HEAT TRANSFERRED (MEG-W/(KG/S))
0.038	6.030E+05	3.230E+07	14.300

	TEMPERATURE (DEG. K)	PRESSURE (N/M**2)	DENSITY (KG/M**3)	ENTHALPY (J/KG)	ENTROPY (J/(KG-K))
STORAGE TANK	18.1	5.07E+04	7.310E+01	-2.76E+05	7.01E+03
COMPRESSOR EXIT	30.0	5.07E+07	9.200E+01	3.27E+05	7.01E+03
HEAT EXCHANGER EXIT	944.0	5.07E+07	1.180E+01	1.41E+07	5.57E+04
TURBINE EXIT	944.0	1.01E+06	2.600E-01	1.36E+07	7.18E+04

STORAGE PRESSURE (N/M**2)	COMPRESSOR PRESSURE (N/M**2)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS AT EXIT OF TURB. STAGE (N/M**2)
5.07E+04	1.013E+08	944.4	1.01E+06

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (W/(KG/S))	AVAILABLE WORK (W/(KG/S))	HEAT TRANSFERRED (MEG-W/(KG/S))
0.060	1.130E+06	2.970E+07	14.700

	TEMPERATURE (DEG. K)	PRESSURE (N/M**2)	DENSITY (KG/M**3)	ENTHALPY (J/KG)	ENTROPY (J/(KG-K))
STORAGE TANK	18.1	5.07E+04	7.310E+01	-2.76E+05	7.01E+03
COMPRESSOR EXIT	36.9	1.01E+08	1.010E+02	8.52E+05	7.01E+03
HEAT EXCHANGER EXIT	944.0	1.01E+08	2.160E+01	1.45E+07	5.29E+04
TURBINE EXIT	944.0	1.01E+06	2.600E-01	1.36E+07	7.18E+04

STORAGE PRESSURE (N/M**2)	COMPRESSOR PRESSURE (N/M**2)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS AT EXIT OF TURB. STAGE (N/M**2)
5.07E+04	1.520E+08	944.4	1.01E+06

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (W/(KG/S))	AVAILABLE WORK (W/(KG/S))	HEAT TRANSFERRED (MEG-W/(KG/S))
0.078	1.620E+06	2.820E+07	5.000

	TEMPERATURE (DEG. K)	PRESSURE (N/M**2)	DENSITY (KG/M**3)	ENTHALPY (J/KG)	ENTROPY (J/(KG-K))
STORAGE TANK	18.1	5.07E+04	7.310E+01	-2.76E+05	7.01E+03
COMPRESSOR EXIT	42.7	1.52E+08	1.070E+02	1.34E+06	7.01E+03
HEAT EXCHANGER EXIT	944.0	1.52E+08	3.000E+01	1.49E+07	5.12E+04
TURBINE EXIT	944.0	1.01E+06	2.600E-01	1.36E+07	7.18E+04

STORAGE PRESSURE (N/M**2)	COMPRESSOR PRESSURE (N/M**2)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS AT EXIT OF TURB. STAGE (N/M**2)
5.07E+04	2.026E+08	944.4	1.01E+06

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (W/(KG/S))	AVAILABLE WORK (W/(KG/S))	HEAT TRANSFERRED (MEG-W/(KG/S))
0.094	2.080E+06	2.720E+07	5.400

	TEMPERATURE (DEG. K)	PRESSURE (N/M**2)	DENSITY (KG/M**3)	ENTHALPY (J/KG)	ENTROPY (J/(KG-K))
STORAGE TANK	18.1	5.07E+04	7.310E+01	-2.76E+05	7.01E+03
COMPRESSOR EXIT	47.9	2.03E+08	1.110E+02	1.80E+06	7.01E+03
HEAT EXCHANGER EXIT	944.0	2.03E+08	3.740E+01	1.52E+07	5.00E+04
TURBINE EXIT	944.0	1.01E+06	2.600E-01	1.36E+07	7.18E+04

TABLE I. - Continued. IDEAL TURBINE CYCLE

(a) Continued. SI units

STORAGE PRESSURE (N/M**2)	COMPRESSOR PRESSURE (N/M**2)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS AT EXIT OF TURB. STAGE (N/M**2)
5.07E+04	2.533E+08	944.4	1.01E+06

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (W/(KG/S))	AVAILABLE WORK (W/(KG/S))	HEAT TRANSFERRED (MEG-W/(KG/S))
0.110	2.530E+06	2.640E+07	5.700

	TEMPERATURE (DEG. K)	PRESSURE (N/M**2)	DENSITY (KG/M**3)	ENTHALPY (J/KG)	ENTROPY (J/(KG-K))
STORAGE TANK	18.1	5.07E+04	7.310E+01	-2.76E+05	7.01E+03
COMPRESSOR EXIT	52.3	2.53E+08	1.150E+02	2.25E+06	7.01E+03
HEAT EXCHANGER EXIT	944.0	2.53E+08	4.390E+01	1.56E+07	4.91E+04
TURBINE EXIT	944.0	1.01E+06	2.600E-01	1.36E+07	7.18E+04

STORAGE PRESSURE (N/M**2)	COMPRESSOR PRESSURE (N/M**2)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS AT EXIT OF TURB. STAGE (N/M**2)
5.07E+04	3.040E+08	944.4	1.01E+06

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (W/(KG/S))	AVAILABLE WORK (W/(KG/S))	HEAT TRANSFERRED (MEG-W/(KG/S))
0.120	2.960E+06	2.570E+07	15.900

	TEMPERATURE (DEG. K)	PRESSURE (N/M**2)	DENSITY (KG/M**3)	ENTHALPY (J/KG)	ENTROPY (J/(KG-K))
STORAGE TANK	18.1	5.07E+04	7.310E+01	-2.76E+05	7.01E+03
COMPRESSOR EXIT	56.0	3.04E+08	1.190E+02	2.68E+06	7.01E+03
HEAT EXCHANGER EXIT	944.0	3.04E+08	4.980E+01	1.59E+07	4.83E+04
TURBINE EXIT	944.0	1.01E+06	2.600E-01	1.36E+07	7.18E+04

STORAGE PRESSURE (N/M**2)	COMPRESSOR PRESSURE (N/M**2)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS AT EXIT OF TURB. STAGE (N/M**2)
5.07E+04	3.546E+08	944.4	1.01E+06

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (W/(KG/S))	AVAILABLE WORK (W/(KG/S))	HEAT TRANSFERRED (MEG-W/(KG/S))
0.130	3.380E+06	2.520E+07	16.200

	TEMPERATURE (DEG. K)	PRESSURE (N/M**2)	DENSITY (KG/M**3)	ENTHALPY (J/KG)	ENTROPY (J/(KG-K))
STORAGE TANK	18.1	5.07E+04	7.310E+01	-2.76E+05	7.01E+03
COMPRESSOR EXIT	59.4	3.55E+08	1.220E+02	3.11E+06	7.01E+03
HEAT EXCHANGER EXIT	944.0	3.55E+08	5.520E+01	1.63E+07	4.76E+04
TURBINE EXIT	944.0	1.01E+06	2.600E-01	1.36E+07	7.18E+04

STORAGE PRESSURE (N/M**2)	COMPRESSOR PRESSURE (N/M**2)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS AT EXIT OF TURB. STAGE (N/M**2)
5.07E+04	4.053E+08	944.4	1.01E+06

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (W/(KG/S))	AVAILABLE WORK (W/(KG/S))	HEAT TRANSFERRED (MEG-W/(KG/S))
0.140	3.790E+06	2.470E+07	16.500

	TEMPERATURE (DEG. K)	PRESSURE (N/M**2)	DENSITY (KG/M**3)	ENTHALPY (J/KG)	ENTROPY (J/(KG-K))
STORAGE TANK	18.1	5.07E+04	7.310E+01	-2.76E+05	7.01E+03
COMPRESSOR EXIT	62.4	4.05E+08	1.240E+02	3.52E+06	7.01E+03
HEAT EXCHANGER EXIT	944.0	4.05E+08	6.010E+01	1.66E+07	4.70E+04
TURBINE EXIT	944.0	1.01E+06	2.600E-01	1.36E+07	7.18E+04

TABLE I. - Continued. IDEAL TURBINE CYCLE

(a) Continued. SI units

STORAGE PRESSURE (N/M**2)	COMPRESSOR PRESSURE (N/M**2)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS AT EXIT OF TURB. STAGE (N/M**2)
5.07E+04	4.560E+08	944.4	1.01E+06

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (W/(KG/S))	AVAILABLE WORK (W/(KG/S))	HEAT TRANSFERRED (MEG-W/(KG/S))
0.150	4.200E+06	2.430E+07	16.700

	TEMPERATURE (DEG. K)	PRESSURE (N/M**2)	DENSITY (KG/M**3)	ENTHALPY (J/KG)	ENTROPY (J/(KG-K))
STORAGE TANK	18.1	5.07E+04	7.310E+01	-2.76E+05	7.01E+03
COMPRESSOR EXIT	65.1	4.56E+08	1.270E+02	3.92E+06	7.01E+03
HEAT EXCHANGER EXIT	944.0	4.56E+08	6.460E+01	1.69E+07	4.65E+04
TURBINE EXIT	944.0	1.01E+06	2.600E-01	1.36E+07	7.18E+04

STORAGE PRESSURE (N/M**2)	COMPRESSOR PRESSURE (N/M**2)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS AT EXIT OF TURB. STAGE (N/M**2)
5.07E+04	5.066E+08	944.4	1.01E+06

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (W/(KG/S))	AVAILABLE WORK (W/(KG/S))	HEAT TRANSFERRED (MEG-W/(KG/S))
0.160	4.590E+06	2.390E+07	16.900

	TEMPERATURE (DEG. K)	PRESSURE (N/M**2)	DENSITY (KG/M**3)	ENTHALPY (J/KG)	ENTROPY (J/(KG-K))
STORAGE TANK	18.1	5.07E+04	7.310E+01	-2.76E+05	7.01E+03
COMPRESSOR EXIT	67.7	5.07E+08	1.290E+02	4.32E+06	7.01E+03
HEAT EXCHANGER EXIT	944.0	5.07E+08	6.870E+01	1.73E+07	4.61E+04
TURBINE EXIT	944.0	1.01E+06	2.600E-01	1.36E+07	7.18E+04

STORAGE PRESSURE (N/M**2)	COMPRESSOR PRESSURE (N/M**2)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS AT EXIT OF TURB. STAGE (N/M**2)
5.07E+04	5.066E+07	1111.0	1.01E+06

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (W/(KG/S))	AVAILABLE WORK (W/(KG/S))	HEAT TRANSFERRED (MEG-W/(KG/S))
0.033	6.030E+05	4.060E+07	16.800

	TEMPERATURE (DEG. K)	PRESSURE (N/M**2)	DENSITY (KG/M**3)	ENTHALPY (J/KG)	ENTROPY (J/(KG-K))
STORAGE TANK	18.1	5.07E+04	7.310E+01	-2.76E+05	7.01E+03
COMPRESSOR EXIT	30.0	5.07E+07	9.200E+01	3.27E+05	7.01E+03
HEAT EXCHANGER EXIT	1110.0	5.07E+07	1.020E+01	1.66E+07	5.82E+04
TURBINE EXIT	1110.0	1.01E+06	2.200E-01	1.61E+07	7.43E+04

STORAGE PRESSURE (N/M**2)	COMPRESSOR PRESSURE (N/M**2)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS AT EXIT OF TURB. STAGE (N/M**2)
5.07E+04	1.013E+08	1111.0	1.01E+06

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (W/(KG/S))	AVAILABLE WORK (W/(KG/S))	HEAT TRANSFERRED (MEG-W/(KG/S))
0.051	1.130E+06	3.750E+07	17.200

	TEMPERATURE (DEG. K)	PRESSURE (N/M**2)	DENSITY (KG/M**3)	ENTHALPY (J/KG)	ENTROPY (J/(KG-K))
STORAGE TANK	18.1	5.07E+04	7.310E+01	-2.76E+05	7.01E+03
COMPRESSOR EXIT	36.9	1.01E+08	1.010E+02	8.52E+05	7.01E+03
HEAT EXCHANGER EXIT	1110.0	1.01E+08	1.890E+01	1.70E+07	5.53E+04
TURBINE EXIT	1110.0	1.01E+06	2.200E-01	1.61E+07	7.43E+04

TABLE I. - Continued. IDEAL TURBINE CYCLE

(a) Continued. SI units

STORAGE PRESSURE (N/M**2)	COMPRESSOR PRESSURE (N/M**2)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS AT EXIT CF TURB. STAGE (N/M**2)
5.07E+04	1.520E+08	1111.0	1.01E+06

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (W/(KG/S))	AVAILABLE WORK (W/(KG/S))	HEAT TRANSFERRED (MEG-W/(KG/S))
0.067	1.620E+06	3.580E+07	17.600

	TEMPERATURE (DEG. K)	PRESSURE (N/M**2)	DENSITY (KG/M**3)	ENTHALPY (J/KG)	ENTROPY (J/(KG-K))
STORAGE TANK	18.1	5.07E+04	7.310E+01	-2.76E+05	7.01E+03
COMPRESSOR EXIT	42.7	1.52E+08	1.070E+02	1.34E+06	7.01E+03
HEAT EXCHANGER EXIT	1110.0	1.52E+08	2.650E+01	1.74E+07	5.37E+04
TURBINE EXIT	1110.0	1.01E+06	2.200E-01	1.61E+07	7.43E+04

STORAGE PRESSURE (N/M**2)	COMPRESSOR PRESSURE (N/M**2)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS AT EXIT CF TURB. STAGE (N/M**2)
5.07E+04	2.026E+08	1111.0	1.01E+06

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (W/(KG/S))	AVAILABLE WORK (W/(KG/S))	HEAT TRANSFERRED (MEG-W/(KG/S))
0.080	2.080E+06	3.450E+07	17.900

	TEMPERATURE (DEG. K)	PRESSURE (N/M**2)	DENSITY (KG/M**3)	ENTHALPY (J/KG)	ENTROPY (J/(KG-K))
STORAGE TANK	18.1	5.07E+04	7.310E+01	-2.76E+05	7.01E+03
COMPRESSOR EXIT	47.9	2.03E+08	1.110E+02	1.80E+06	7.01E+03
HEAT EXCHANGER EXIT	1110.0	2.03E+08	3.320E+01	1.78E+07	5.25E+04
TURBINE EXIT	1110.0	1.01E+06	2.200E-01	1.61E+07	7.43E+04

STORAGE PRESSURE (N/M**2)	COMPRESSOR PRESSURE (N/M**2)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS AT EXIT CF TURB. STAGE (N/M**2)
5.07E+04	2.533E+08	1111.0	1.01E+06

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (W/(KG/S))	AVAILABLE WORK (W/(KG/S))	HEAT TRANSFERRED (MEG-W/(KG/S))
0.093	2.530E+06	3.360E+07	18.2CC

	TEMPERATURE (DEG. K)	PRESSURE (N/M**2)	DENSITY (KG/M**3)	ENTHALPY (J/KG)	ENTROPY (J/(KG-K))
STORAGE TANK	18.1	5.07E+04	7.310E+01	-2.76E+05	7.01E+03
COMPRESSOR EXIT	52.3	2.53E+08	1.150E+02	2.25E+06	7.01E+03
HEAT EXCHANGER EXIT	1110.0	2.53E+08	3.930E+01	1.81E+07	5.15E+04
TURBINE EXIT	1110.0	1.01E+06	2.200E-01	1.61E+07	7.43E+04

STORAGE PRESSURE (N/M**2)	COMPRESSOR PRESSURE (N/M**2)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS AT EXIT CF TURB. STAGE (N/M**2)
5.07E+04	3.040E+08	1111.0	1.01E+06

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (W/(KG/S))	AVAILABLE WORK (W/(KG/S))	HEAT TRANSFERRED (MEG-W/(KG/S))
0.100	2.960E+06	3.280E+07	18.5CC

	TEMPERATURE (DEG. K)	PRESSURE (N/M**2)	DENSITY (KG/M**3)	ENTHALPY (J/KG)	ENTROPY (J/(KG-K))
STORAGE TANK	18.1	5.07E+04	7.310E+01	-2.76E+05	7.01E+03
COMPRESSOR EXIT	56.0	3.04E+08	1.190E+02	2.68E+06	7.01E+03
HEAT EXCHANGER EXIT	1110.0	3.04E+08	4.490E+01	1.85E+07	5.08E+04
TURBINE EXIT	1110.0	1.01E+06	2.200E-01	1.61E+07	7.43E+04

TABLE I. - Continued. IDEAL TURBINE CYCLE

(a) Concluded. SI units

STORAGE PRESSURE (N/M**2)	COMPRESSOR PRESSURE (N/M**2)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS AT EXIT CF TURB. STAGE (N/M**2)
5.07E+04	3.546E+08	1111.0	1.01E+06

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (W/(KG/S))	AVAILABLE WORK (W/(KG/S))	HEAT TRANSFERRED (MEG-W/(KG/S))
0.110	3.380E+06	3.220E+07	18.800

	TEMPERATURE (DEG. K)	PRESSURE (N/M**2)	DENSITY (KG/M**3)	ENTHALPY (J/KG)	ENTROPY (J/(KG-K))
STORAGE TANK	18.1	5.07E+04	7.310E+01	-2.76E+05	7.01E+03
COMPRESSOR EXIT	59.4	3.55E+08	1.220E+02	3.11E+06	7.01E+03
HEAT EXCHANGER EXIT	1110.0	3.55E+08	4.990E+01	1.88E+07	5.01E+04
TURBINE EXIT	1110.0	1.01E+06	2.200E-01	1.61E+07	7.43E+04

STORAGE PRESSURE (N/M**2)	COMPRESSOR PRESSURE (N/M**2)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS AT EXIT OF TURB. STAGE (N/M**2)
5.07E+04	4.053E+08	1111.0	1.01E+06

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (W/(KG/S))	AVAILABLE WORK (W/(KG/S))	HEAT TRANSFERRED (MEG-W/(KG/S))
0.120	3.790E+06	3.160E+07	19.100

	TEMPERATURE (DEG. K)	PRESSURE (N/M**2)	DENSITY (KG/M**3)	ENTHALPY (J/KG)	ENTROPY (J/(KG-K))
STORAGE TANK	18.1	5.07E+04	7.310E+01	-2.76E+05	7.01E+03
COMPRESSOR EXIT	62.4	4.05E+08	1.240E+02	3.52E+06	7.01E+03
HEAT EXCHANGER EXIT	1110.0	4.05E+08	5.460E+01	1.92E+07	4.96E+04
TURBINE EXIT	1110.0	1.01E+06	2.200E-01	1.61E+07	7.43E+04

STORAGE PRESSURE (N/M**2)	COMPRESSOR PRESSURE (N/M**2)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS AT EXIT CF TURB. STAGE (N/M**2)
5.07E+04	4.560E+08	1111.0	1.01E+06

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (W/(KG/S))	AVAILABLE WORK (W/(KG/S))	HEAT TRANSFERRED (MEG-W/(KG/S))
0.130	4.200E+06	3.110E+07	19.300

	TEMPERATURE (DEG. K)	PRESSURE (N/M**2)	DENSITY (KG/M**3)	ENTHALPY (J/KG)	ENTROPY (J/(KG-K))
STORAGE TANK	18.1	5.07E+04	7.310E+01	-2.76E+05	7.01E+03
COMPRESSOR EXIT	65.1	4.56E+08	1.270E+02	3.92E+06	7.01E+03
HEAT EXCHANGER EXIT	1110.0	4.56E+08	5.890E+01	1.95E+07	4.91E+04
TURBINE EXIT	1110.0	1.01E+06	2.200E-01	1.61E+07	7.43E+04

STORAGE PRESSURE (N/M**2)	COMPRESSOR PRESSURE (N/M**2)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS AT EXIT OF TURB. STAGE (N/M**2)
5.07E+04	5.066E+08	1111.0	1.01E+06

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (W/(KG/S))	AVAILABLE WORK (W/(KG/S))	HEAT TRANSFERRED (MEG-W/(KG/S))
0.140	4.590E+06	3.070E+07	19.600

	TEMPERATURE (DEG. K)	PRESSURE (N/M**2)	DENSITY (KG/M**3)	ENTHALPY (J/KG)	ENTROPY (J/(KG-K))
STORAGE TANK	18.1	5.07E+04	7.310E+01	-2.76E+05	7.01E+03
COMPRESSOR EXIT	67.7	5.07E+08	1.290E+02	4.32E+06	7.01E+03
HEAT EXCHANGER EXIT	1110.0	5.07E+08	6.300E+01	1.98E+07	4.86E+04
TURBINE EXIT	1110.0	1.01E+06	2.200E-01	1.61E+07	7.43E+04

TABLE I. - Continued. IDEAL TURBINE CYCLE

(b) U.S. customary units

STORAGE PRESSURE (ATM)	COMPRESSOR PRESSURE (ATM)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS AT EXIT OF TURB. STAGE (ATM)
0.50	500.0	944.4	10.00

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (HP/(LB/S))	AVAILABLE WORK (HP/(LB/S))	HEAT TRANSFERRED (MEG-W/(LB/S))
0.038	367.0	19600.0	6.500

	TEMPERATURE (DEG. K)	PRESSURE (ATM)	DENSITY (G/CM**3)	ENTHALPY (CAL/G)	ENTROPY (CAL/(G-K))
STORAGE TANK	18.1	0.50	7.310E-02	-65.9	1.68
COMPRESSOR EXIT	30.0	500.00	9.200E-02	78.2	1.68
HEAT EXCHANGER EXIT	944.0	500.00	1.180E-02	3360.0	13.30
TURBINE EXIT	944.0	10.00	2.590E-04	3260.0	17.20

STORAGE PRESSURE (ATM)	COMPRESSOR PRESSURE (ATM)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS AT EXIT OF TURB. STAGE (ATM)
0.50	1000.0	944.4	10.00

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (HP/(LB/S))	AVAILABLE WORK (HP/(LB/S))	HEAT TRANSFERRED (MEG-W/(LB/S))
0.060	686.0	18100.0	6.660

	TEMPERATURE (DEG. K)	PRESSURE (ATM)	DENSITY (G/CM**3)	ENTHALPY (CAL/G)	ENTROPY (CAL/(G-K))
STORAGE TANK	18.1	0.50	7.310E-02	-65.9	1.68
COMPRESSOR EXIT	36.9	1000.00	1.000E-01	204.0	1.68
HEAT EXCHANGER EXIT	944.0	1000.00	2.160E-02	3460.0	12.60
TURBINE EXIT	944.0	10.00	2.590E-04	3260.0	17.20

STORAGE PRESSURE (ATM)	COMPRESSOR PRESSURE (ATM)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS AT EXIT OF TURB. STAGE (ATM)
0.50	1500.0	944.4	10.00

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (HP/(LB/S))	AVAILABLE WORK (HP/(LB/S))	HEAT TRANSFERRED (MEG-W/(LB/S))
0.078	982.0	17200.0	6.820

	TEMPERATURE (DEG. K)	PRESSURE (ATM)	DENSITY (G/CM**3)	ENTHALPY (CAL/G)	ENTROPY (CAL/(G-K))
STORAGE TANK	18.1	0.50	7.310E-02	-65.9	1.68
COMPRESSOR EXIT	42.7	1500.00	1.100E-01	320.0	1.68
HEAT EXCHANGER EXIT	944.0	1500.00	3.000E-02	3550.0	12.20
TURBINE EXIT	944.0	10.00	2.590E-04	3260.0	17.20

STORAGE PRESSURE (ATM)	COMPRESSOR PRESSURE (ATM)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS AT EXIT OF TURB. STAGE (ATM)
0.50	2000.0	944.4	10.00

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (HP/(LB/S))	AVAILABLE WORK (HP/(LB/S))	HEAT TRANSFERRED (MEG-W/(LB/S))
0.094	1260.0	16500.0	6.960

	TEMPERATURE (DEG. K)	PRESSURE (ATM)	DENSITY (G/CM**3)	ENTHALPY (CAL/G)	ENTROPY (CAL/(G-K))
STORAGE TANK	18.1	0.50	7.310E-02	-65.9	1.68
COMPRESSOR EXIT	47.9	2000.00	1.100E-01	431.0	1.68
HEAT EXCHANGER EXIT	944.0	2000.00	3.740E-02	3640.0	11.90
TURBINE EXIT	944.0	10.00	2.590E-04	3260.0	17.20

TABLE I. - Continued. IDEAL TURBINE CYCLE

(b) Continued. U.S. customary units

STORAGE PRESSURE (ATM)	COMPRESSOR PRESSURE (ATM)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS AT EXIT OF TURB. STAGE (ATM)
0.50	2500.0	944.4	10.00

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (HP/(LB/S))	AVAILABLE WORK (HP/(LB/S))	HEAT TRANSFERRED (MEG-W/(LB/S))
0.110	1540.0	16000.0	7.100

	TEMPERATURE (DEG. K)	PRESSURE (ATM)	DENSITY (G/CM**3)	ENTHALPY (CAL/G)	ENTROPY (CAL/(G-K))
STORAGE TANK	18.1	0.50	7.310E-02	-65.9	1.68
COMPRESSOR EXIT	52.3	2500.00	1.200E-01	538.0	1.68
HEAT EXCHANGER EXIT	944.0	2500.00	4.390E-02	3720.0	11.70
TURBINE EXIT	944.0	10.00	2.590E-04	3260.0	17.20

STORAGE PRESSURE (ATM)	COMPRESSOR PRESSURE (ATM)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS AT EXIT OF TURB. STAGE (ATM)
0.50	3000.0	944.4	10.00

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (HP/(LB/S))	AVAILABLE WORK (HP/(LB/S))	HEAT TRANSFERRED (MEG-W/(LB/S))
0.120	1800.0	15600.0	7.230

	TEMPERATURE (DEG. K)	PRESSURE (ATM)	DENSITY (G/CM**3)	ENTHALPY (CAL/G)	ENTROPY (CAL/(G-K))
STORAGE TANK	18.1	0.50	7.310E-02	-65.9	1.68
COMPRESSOR EXIT	56.0	3000.00	1.200E-01	642.0	1.68
HEAT EXCHANGER EXIT	944.0	3000.00	4.980E-02	3810.0	11.50
TURBINE EXIT	944.0	10.00	2.590E-04	3260.0	17.20

STORAGE PRESSURE (ATM)	COMPRESSOR PRESSURE (ATM)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS AT EXIT OF TURB. STAGE (ATM)
0.50	3500.0	944.4	10.00

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (HP/(LB/S))	AVAILABLE WORK (HP/(LB/S))	HEAT TRANSFERRED (MEG-W/(LB/S))
0.130	2060.0	15300.0	7.350

	TEMPERATURE (DEG. K)	PRESSURE (ATM)	DENSITY (G/CM**3)	ENTHALPY (CAL/G)	ENTROPY (CAL/(G-K))
STORAGE TANK	18.1	0.50	7.310E-02	-65.9	1.68
COMPRESSOR EXIT	59.4	3500.00	1.200E-01	742.0	1.68
HEAT EXCHANGER EXIT	944.0	3500.00	5.520E-02	3890.0	11.40
TURBINE EXIT	944.0	10.00	2.590E-04	3260.0	17.20

STORAGE PRESSURE (ATM)	COMPRESSOR PRESSURE (ATM)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS AT EXIT OF TURB. STAGE (ATM)
0.50	4000.0	944.4	10.00

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (HP/(LB/S))	AVAILABLE WORK (HP/(LB/S))	HEAT TRANSFERRED (MEG-W/(LB/S))
0.140	2310.0	15000.0	7.470

	TEMPERATURE (DEG. K)	PRESSURE (ATM)	DENSITY (G/CM**3)	ENTHALPY (CAL/G)	ENTROPY (CAL/(G-K))
STORAGE TANK	18.1	0.50	7.310E-02	-65.9	1.68
COMPRESSOR EXIT	62.4	4000.00	1.200E-01	841.0	1.68
HEAT EXCHANGER EXIT	944.0	4000.00	6.010E-02	3970.0	11.20
TURBINE EXIT	944.0	10.00	2.590E-04	3260.0	17.20

TABLE I. - Continued. IDEAL TURBINE CYCLE

(b) Continued. U.S. customary units

STORAGE PRESSURE (ATM)	COMPRESSOR PRESSURE (ATM)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS AT EXIT OF TURB. STAGE (ATM)
0.50	4500.0	944.4	10.00

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (HP/(LB/S))	AVAILABLE WORK (HP/(LB/S))	HEAT TRANSFERRED (MEG-W/(LB/S))
0.150	2550.0	14800.0	7.580

	TEMPERATURE (DEG. K)	PRESSURE (ATM)	DENSITY (G/CM**3)	ENTHALPY (CAL/G)	ENTROPY (CAL/(G-K))
STORAGE TANK	18.1	0.50	7.310E-02	-65.9	1.68
COMPRESSOR EXIT	65.1	4500.00	1.300E-01	937.0	1.68
HEAT EXCHANGER EXIT	944.0	4500.00	6.460E-02	4050.0	11.10
TURBINE EXIT	944.0	10.00	2.590E-04	3260.0	17.20

STORAGE PRESSURE (ATM)	COMPRESSOR PRESSURE (ATM)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS AT EXIT OF TURB. STAGE (ATM)
0.50	5000.0	944.4	10.00

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (HP/(LB/S))	AVAILABLE WORK (HP/(LB/S))	HEAT TRANSFERRED (MEG-W/(LB/S))
0.160	2790.0	14600.0	7.690

	TEMPERATURE (DEG. K)	PRESSURE (ATM)	DENSITY (G/CM**3)	ENTHALPY (CAL/G)	ENTROPY (CAL/(G-K))
STORAGE TANK	18.1	0.50	7.310E-02	-65.9	1.68
COMPRESSOR EXIT	67.7	5000.00	1.300E-01	1030.0	1.68
HEAT EXCHANGER EXIT	944.0	5000.00	6.870E-02	4130.0	11.00
TURBINE EXIT	944.0	10.00	2.590E-04	3260.0	17.20

STORAGE PRESSURE (ATM)	COMPRESSOR PRESSURE (ATM)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS AT EXIT OF TURB. STAGE (ATM)
0.50	500.0	1111.0	10.00

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (HP/(LB/S))	AVAILABLE WORK (HP/(LB/S))	HEAT TRANSFERRED (MEG-W/(LB/S))
0.033	367.0	24700.0	7.630

	TEMPERATURE (DEG. K)	PRESSURE (ATM)	DENSITY (G/CM**3)	ENTHALPY (CAL/G)	ENTROPY (CAL/(G-K))
STORAGE TANK	18.1	0.50	7.310E-02	-65.9	1.68
COMPRESSOR EXIT	30.0	500.00	9.200E-02	78.2	1.68
HEAT EXCHANGER EXIT	1110.0	500.00	1.020E-02	3960.0	13.90
TURBINE EXIT	1110.0	10.00	2.210E-04	3860.0	17.80

STORAGE PRESSURE (ATM)	COMPRESSOR PRESSURE (ATM)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS AT EXIT OF TURB. STAGE (ATM)
0.50	1000.0	1111.0	10.00

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (HP/(LB/S))	AVAILABLE WORK (HP/(LB/S))	HEAT TRANSFERRED (MEG-W/(LB/S))
0.051	686.0	22800.0	7.810

	TEMPERATURE (DEG. K)	PRESSURE (ATM)	DENSITY (G/CM**3)	ENTHALPY (CAL/G)	ENTROPY (CAL/(G-K))
STORAGE TANK	18.1	0.50	7.310E-02	-65.9	1.68
COMPRESSOR EXIT	36.9	1000.00	1.000E-01	204.0	1.68
HEAT EXCHANGER EXIT	1110.0	1000.00	1.890E-02	4060.0	13.20
TURBINE EXIT	1110.0	10.00	2.210E-04	3860.0	17.80

TABLE I. - Continued. IDEAL TURBINE CYCLE

(b) Continued. U.S. customary units

STORAGE PRESSURE (ATM)	COMPRESSOR PRESSURE (ATM)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS AT EXIT OF TURB. STAGE (ATM)
0.50	1500.0	1111.0	10.00

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (HP/(LB/S))	AVAILABLE WORK (HP/(LB/S))	HEAT TRANSFERRED (MEG-W/(LB/S))
0.067	982.0	21800.0	7.970

	TEMPERATURE (DEG. K)	PRESSURE (ATM)	DENSITY (G/CM**3)	ENTHALPY (CAL/G)	ENTROPY (CAL/(G-K))
STORAGE TANK	18.1	0.50	7.310E-02	-65.9	1.68
COMPRESSOR EXIT	42.7	1500.00	1.100E-01	320.0	1.68
HEAT EXCHANGER EXIT	1110.0	1500.00	2.650E-02	4150.0	12.80
TURBINE EXIT	1110.0	10.00	2.210E-04	3860.0	17.80

STORAGE PRESSURE (ATM)	COMPRESSOR PRESSURE (ATM)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS AT EXIT OF TURB. STAGE (ATM)
0.50	2000.0	1111.0	10.00

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (HP/(LB/S))	AVAILABLE WORK (HP/(LB/S))	HEAT TRANSFERRED (MEG-W/(LB/S))
0.080	1260.0	21000.0	8.120

	TEMPERATURE (DEG. K)	PRESSURE (ATM)	DENSITY (G/CM**3)	ENTHALPY (CAL/G)	ENTROPY (CAL/(G-K))
STORAGE TANK	18.1	0.50	7.310E-02	-65.9	1.68
COMPRESSOR EXIT	47.9	2000.00	1.100E-01	431.0	1.68
HEAT EXCHANGER EXIT	1110.0	2000.00	3.320E-02	4240.0	12.50
TURBINE EXIT	1110.0	10.00	2.210E-04	3860.0	17.80

STORAGE PRESSURE (ATM)	COMPRESSOR PRESSURE (ATM)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS AT EXIT CF TURB. STAGE (ATM)
0.50	2500.0	1111.0	10.00

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (HP/(LB/S))	AVAILABLE WORK (HP/(LB/S))	HEAT TRANSFERRED (MEG-W/(LB/S))
0.093	1540.0	20400.0	8.260

	TEMPERATURE (DEG. K)	PRESSURE (ATM)	DENSITY (G/CM**3)	ENTHALPY (CAL/G)	ENTROPY (CAL/(G-K))
STORAGE TANK	18.1	0.50	7.310E-02	-65.9	1.68
COMPRESSOR EXIT	52.3	2500.00	1.200E-01	538.0	1.68
HEAT EXCHANGER EXIT	1110.0	2500.00	3.930E-02	4330.0	12.30
TURBINE EXIT	1110.0	10.00	2.210E-04	3860.0	17.80

STORAGE PRESSURE (ATM)	COMPRESSOR PRESSURE (ATM)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS AT EXIT CF TURB. STAGE (ATM)
0.50	3000.0	1111.0	10.00

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (HP/(LB/S))	AVAILABLE WORK (HP/(LB/S))	HEAT TRANSFERRED (MEG-W/(LB/S))
0.100	1800.0	20000.0	8.400

	TEMPERATURE (DEG. K)	PRESSURE (ATM)	DENSITY (G/CM**3)	ENTHALPY (CAL/G)	ENTROPY (CAL/(G-K))
STORAGE TANK	18.1	0.50	7.310E-02	-65.9	1.68
COMPRESSOR EXIT	56.0	3000.00	1.200E-01	642.0	1.68
HEAT EXCHANGER EXIT	1110.0	3000.00	4.490E-02	4420.0	12.10
TURBINE EXIT	1110.0	10.00	2.210E-04	3860.0	17.80

TABLE I. - Concluded. IDEAL TURBINE CYCLE

(b) Concluded. U.S. customary units

STORAGE PRESSURE (ATM)	COMPRESSOR PRESSURE (ATM)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS AT EXIT OF TURB. STAGE (ATM)
0.50	3500.0	1111.0	10.00

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (HP/(LB/S))	AVAILABLE WORK (HP/(LB/S))	HEAT TRANSFERRED (MEG-W/(LB/S))
0.110	2060.0	19600.0	8.530

	TEMPERATURE (DEG. K)	PRESSURE (ATM)	DENSITY (G/CM**3)	ENTHALPY (CAL/G)	ENTROPY (CAL/(G-K))
STORAGE TANK	18.1	0.50	7.310E-02	-65.9	1.68
COMPRESSOR EXIT	59.4	3500.00	1.200E-01	742.0	1.68
HEAT EXCHANGER EXIT	1110.0	3500.00	4.990E-02	4500.0	12.00
TURBINE EXIT	1110.0	10.00	2.210E-04	3860.0	17.80

STORAGE PRESSURE (ATM)	COMPRESSOR PRESSURE (ATM)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS AT EXIT OF TURB. STAGE (ATM)
0.50	4000.0	1111.0	10.00

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (HP/(LB/S))	AVAILABLE WORK (HP/(LB/S))	HEAT TRANSFERRED (MEG-W/(LB/S))
0.120	2310.0	19200.0	8.650

	TEMPERATURE (DEG. K)	PRESSURE (ATM)	DENSITY (G/CM**3)	ENTHALPY (CAL/G)	ENTROPY (CAL/(G-K))
STORAGE TANK	18.1	0.50	7.310E-02	-65.9	1.68
COMPRESSOR EXIT	62.4	4000.00	1.200E-01	841.0	1.68
HEAT EXCHANGER EXIT	1110.0	4000.00	5.460E-02	4580.0	11.80
TURBINE EXIT	1110.0	10.00	2.210E-04	3860.0	17.80

STORAGE PRESSURE (ATM)	COMPRESSOR PRESSURE (ATM)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS AT EXIT OF TURB. STAGE (ATM)
0.50	4500.0	1111.0	10.00

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (HP/(LB/S))	AVAILABLE WORK (HP/(LB/S))	HEAT TRANSFERRED (MEG-W/(LB/S))
0.130	2550.0	18900.0	8.770

	TEMPERATURE (DEG. K)	PRESSURE (ATM)	DENSITY (G/CM**3)	ENTHALPY (CAL/G)	ENTROPY (CAL/(G-K))
STORAGE TANK	18.1	0.50	7.310E-02	-65.9	1.68
COMPRESSOR EXIT	65.1	4500.00	1.300E-01	937.0	1.68
HEAT EXCHANGER EXIT	1110.0	4500.00	5.890E-02	4660.0	11.70
TURBINE EXIT	1110.0	10.00	2.210E-04	3860.0	17.80

STORAGE PRESSURE (ATM)	COMPRESSOR PRESSURE (ATM)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS AT EXIT OF TURB. STAGE (ATM)
0.50	5000.0	1111.0	10.00

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (HP/(LB/S))	AVAILABLE WORK (HP/(LB/S))	HEAT TRANSFERRED (MEG-W/(LB/S))
0.140	2790.0	18700.0	8.880

	TEMPERATURE (DEG. K)	PRESSURE (ATM)	DENSITY (G/CM**3)	ENTHALPY (CAL/G)	ENTROPY (CAL/(G-K))
STORAGE TANK	18.1	0.50	7.310E-02	-65.9	1.68
COMPRESSOR EXIT	67.7	5000.00	1.300E-01	1030.0	1.68
HEAT EXCHANGER EXIT	1110.0	5000.00	6.300E-02	4740.0	11.60
TURBINE EXIT	1110.0	10.00	2.210E-04	3860.0	17.80

TABLE II. - NONADIABATIC TURBINE CYCLE

(a) SI units

STORAGE PRESSURE (N/M**2)	PRESS. DIFF. OF COMP. STAGE (N/M**2)	EFFICIENCY OF COMP. STAGE	COMPRESSOR PRESSURE (N/M**2)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS. DIFF. OF TURB. STAGE (N/M**2)	EFFICIENCY OF TURB. STAGE	PRESS AT EXIT OF TURB. STAGE (N/M**2)
5.07E+04	1.01E+07	0.85	5.066E+07	944.4	1.01E+07	0.85	1.01E+06

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (W/(KG/S))	AVAILABLE WORK (W/(KG/S))	HEAT TRANSFERRED (MEG-W/(KG/S))
0.066	7.270E+05	2.920E+07	14.300

	TEMPERATURE (DEG. K)	PRESSURE (N/M**2)	DENSITY (KG/M**3)	ENTHALPY (J/KG)	ENTROPY (J/(KG-K))
STORAGE TANK	18.1	5.07E+04	7.310E+01	-2.76E+05	7.01E+03
COMPRESSOR EXIT	43.3	5.07E+07	8.650E+01	4.51E+05	1.04E+04
HEAT EXCHANGER EXIT	944.0	5.07E+07	1.180E+01	1.41E+07	5.57E+04
TURBINE EXIT	944.0	1.01E+06	2.600E-01	1.36E+07	7.18E+04

STORAGE PRESSURE (N/M**2)	PRESS. DIFF. OF COMP. STAGE (N/M**2)	EFFICIENCY OF COMP. STAGE	COMPRESSOR PRESSURE (N/M**2)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS. DIFF. OF TURB. STAGE (N/M**2)	EFFICIENCY OF TURB. STAGE	PRESS AT EXIT OF TURB. STAGE (N/M**2)
5.07E+04	1.01E+07	0.85	1.013E+08	944.4	1.01E+07	0.85	1.01E+06

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (W/(KG/S))	AVAILABLE WORK (W/(KG/S))	HEAT TRANSFERRED (MEG-W/(KG/S))
0.100	1.390E+06	2.500E+07	14.700

	TEMPERATURE (DEG. K)	PRESSURE (N/M**2)	DENSITY (KG/M**3)	ENTHALPY (J/KG)	ENTROPY (J/(KG-K))
STORAGE TANK	18.1	5.07E+04	7.310E+01	-2.76E+05	7.01E+03
COMPRESSOR EXIT	64.3	1.01E+08	9.280E+01	1.11E+06	1.22E+04
HEAT EXCHANGER EXIT	944.0	1.01E+08	2.160E+01	1.45E+07	5.29E+04
TURBINE EXIT	944.0	1.01E+06	2.600E-01	1.36E+07	7.18E+04

STORAGE PRESSURE (N/M**2)	PRESS. DIFF. OF COMP. STAGE (N/M**2)	EFFICIENCY OF COMP. STAGE	COMPRESSOR PRESSURE (N/M**2)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS. DIFF. OF TURB. STAGE (N/M**2)	EFFICIENCY OF TURB. STAGE	PRESS AT EXIT OF TURB. STAGE (N/M**2)
5.07E+04	1.01E+07	0.85	1.520E+08	944.4	1.01E+07	0.85	1.01E+06

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (W/(KG/S))	AVAILABLE WORK (W/(KG/S))	HEAT TRANSFERRED (MEG-W/(KG/S))
0.130	2.010E+06	2.250E+07	15.000

	TEMPERATURE (DEG. K)	PRESSURE (N/M**2)	DENSITY (KG/M**3)	ENTHALPY (J/KG)	ENTROPY (J/(KG-K))
STORAGE TANK	18.1	5.07E+04	7.310E+01	-2.76E+05	7.01E+03
COMPRESSOR EXIT	80.7	1.52E+08	9.790E+01	1.74E+06	1.35E+04
HEAT EXCHANGER EXIT	944.0	1.52E+08	3.000E+01	1.49E+07	5.12E+04
TURBINE EXIT	944.0	1.01E+06	2.600E-01	1.36E+07	7.18E+04

STORAGE PRESSURE (N/M**2)	PRESS. DIFF. OF COMP. STAGE (N/M**2)	EFFICIENCY OF COMP. STAGE	COMPRESSOR PRESSURE (N/M**2)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS. DIFF. OF TURB. STAGE (N/M**2)	EFFICIENCY OF TURB. STAGE	PRESS AT EXIT OF TURB. STAGE (N/M**2)
5.07E+04	1.01E+07	0.85	2.026E+08	944.4	1.01E+07	0.85	1.01E+06

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (W/(KG/S))	AVAILABLE WORK (W/(KG/S))	HEAT TRANSFERRED (MEG-W/(KG/S))
0.160	2.610E+06	2.060E+07	15.300

	TEMPERATURE (DEG. K)	PRESSURE (N/M**2)	DENSITY (KG/M**3)	ENTHALPY (J/KG)	ENTROPY (J/(KG-K))
STORAGE TANK	18.1	5.07E+04	7.310E+01	-2.76E+05	7.01E+03
COMPRESSOR EXIT	94.5	2.03E+08	1.020E+02	2.33E+06	1.45E+04
HEAT EXCHANGER EXIT	944.0	2.03E+08	3.740E+01	1.52E+07	5.00E+04
TURBINE EXIT	944.0	1.01E+06	2.600E-01	1.36E+07	7.18E+04

TABLE II. - Continued. NONADIABATIC TURBINE CYCLE

(a) Continued. SI units

STORAGE PRESSURE (N/M**2)	PRESS. DIFF. OF COMP. STAGE (N/M**2)	EFFICIENCY OF COMP. STAGE	COMPRESSOR PRESSURE (N/M**2)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS. DIFF. OF TURB. STAGE (N/M**2)	EFFICIENCY OF TURB. STAGE	PRESS AT EXIT OF TURB. STAGE (N/M**2)
5.07E+04	1.01E+07	0.85	2.533E+08	944.4	1.01E+07	0.85	1.01E+06

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (W/(KG/S))	AVAILABLE WORK (W/(KG/S))	HEAT TRANSFERRED (MEG-W/(KG/S))
0.180	3.190E+06	1.910E+07	15.500

	TEMPERATURE (DEG. K)	PRESSURE (N/M**2)	DENSITY (KG/M**3)	ENTHALPY (J/KG)	ENTROPY (J/(KG-K))
STORAGE TANK	18.1	5.07E+04	7.310E+01	-2.76E+05	7.01E+03
COMPRESSOR EXIT	107.0	2.53E+08	1.060E+02	2.91E+06	1.54E+04
HEAT EXCHANGER EXIT	944.0	2.53E+08	4.390E+01	1.56E+07	4.91E+04
TURBINE EXIT	944.0	1.01E+06	2.600E-01	1.36E+07	7.18E+04

STORAGE PRESSURE (N/M**2)	PRESS. DIFF. OF COMP. STAGE (N/M**2)	EFFICIENCY OF COMP. STAGE	COMPRESSOR PRESSURE (N/M**2)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS. DIFF. OF TURB. STAGE (N/M**2)	EFFICIENCY OF TURB. STAGE	PRESS AT EXIT OF TURB. STAGE (N/M**2)
5.07E+04	1.01E+07	0.85	3.040E+08	944.4	1.01E+07	0.85	1.01E+06

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (W/(KG/S))	AVAILABLE WORK (W/(KG/S))	HEAT TRANSFERRED (MEG-W/(KG/S))
0.200	3.740E+06	1.790E+07	15.700

	TEMPERATURE (DEG. K)	PRESSURE (N/M**2)	DENSITY (KG/M**3)	ENTHALPY (J/KG)	ENTROPY (J/(KG-K))
STORAGE TANK	18.1	5.07E+04	7.310E+01	-2.76E+05	7.01E+03
COMPRESSOR EXIT	118.0	3.04E+08	1.090E+02	3.47E+06	1.61E+04
HEAT EXCHANGER EXIT	944.0	3.04E+08	4.980E+01	1.59E+07	4.83E+04
TURBINE EXIT	944.0	1.01E+06	2.600E-01	1.36E+07	7.18E+04

STORAGE PRESSURE (N/M**2)	PRESS. DIFF. OF COMP. STAGE (N/M**2)	EFFICIENCY OF COMP. STAGE	COMPRESSOR PRESSURE (N/M**2)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS. DIFF. OF TURB. STAGE (N/M**2)	EFFICIENCY OF TURB. STAGE	PRESS AT EXIT OF TURB. STAGE (N/M**2)
5.07E+04	1.01E+07	0.85	3.546E+08	944.4	1.01E+07	0.85	1.01E+06

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (W/(KG/S))	AVAILABLE WORK (W/(KG/S))	HEAT TRANSFERRED (MEG-W/(KG/S))
0.220	4.280E+06	1.690E+07	16.000

	TEMPERATURE (DEG. K)	PRESSURE (N/M**2)	DENSITY (KG/M**3)	ENTHALPY (J/KG)	ENTROPY (J/(KG-K))
STORAGE TANK	18.1	5.07E+04	7.310E+01	-2.76E+05	7.01E+03
COMPRESSOR EXIT	128.0	3.55E+08	1.120E+02	4.01E+06	1.68E+04
HEAT EXCHANGER EXIT	944.0	3.55E+08	5.520E+01	1.63E+07	4.76E+04
TURBINE EXIT	944.0	1.01E+06	2.600E-01	1.36E+07	7.18E+04

STORAGE PRESSURE (N/M**2)	PRESS. DIFF. OF COMP. STAGE (N/M**2)	EFFICIENCY OF COMP. STAGE	COMPRESSOR PRESSURE (N/M**2)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS. DIFF. OF TURB. STAGE (N/M**2)	EFFICIENCY OF TURB. STAGE	PRESS AT EXIT OF TURB. STAGE (N/M**2)
5.07E+04	1.01E+07	0.85	4.053E+08	944.4	1.01E+07	0.85	1.01E+06

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (W/(KG/S))	AVAILABLE WORK (W/(KG/S))	HEAT TRANSFERRED (MEG-W/(KG/S))
0.240	4.810E+06	1.590E+07	16.200

	TEMPERATURE (DEG. K)	PRESSURE (N/M**2)	DENSITY (KG/M**3)	ENTHALPY (J/KG)	ENTROPY (J/(KG-K))
STORAGE TANK	18.1	5.07E+04	7.310E+01	-2.76E+05	7.01E+03
COMPRESSOR EXIT	138.0	4.05E+08	1.140E+02	4.54E+06	1.74E+04
HEAT EXCHANGER EXIT	944.0	4.05E+08	6.010E+01	1.66E+07	4.70E+04
TURBINE EXIT	944.0	1.01E+06	2.600E-01	1.36E+07	7.18E+04

TABLE II. - Continued. NONADIABATIC TURBINE CYCLE

(a) Continued. SI units

STORAGE PRESSURE (N/M**2)	PRESS. DIFF. OF COMP. STAGE (N/M**2)	EFFICIENCY OF COMP. STAGE	COMPRESSOR PRESSURE (N/M**2)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS. DIFF. OF TURB. STAGE (N/M**2)	EFFICIENCY OF TURB. STAGE	PRESS AT EXIT OF TURB. STAGE (N/M**2)
5.07E+04	1.01E+07	0.85	4.560E+08	944.4	1.01E+07	0.85	1.01E+06

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (W/(KG/S))	AVAILABLE WORK (W/(KG/S))	HEAT TRANSFERRED (MEG-W/(KG/S))
0.260	5.330E+06	1.510E+07	16.400

	TEMPERATURE (DEG. K)	PRESSURE (N/M**2)	DENSITY (KG/M**3)	ENTHALPY (J/KG)	ENTROPY (J/(KG-K))
STORAGE TANK	18.1	5.07E+04	7.310E+01	-2.76E+05	7.01E+03
COMPRESSOR EXIT	147.0	4.56E+08	1.160E+02	5.05E+06	1.79E+04
HEAT EXCHANGER EXIT	944.0	4.56E+08	6.460E+01	1.69E+07	4.65E+04
TURBINE EXIT	944.0	1.01E+06	2.600E-01	1.36E+07	7.18E+04

STORAGE PRESSURE (N/M**2)	PRESS. DIFF. OF COMP. STAGE (N/M**2)	EFFICIENCY OF COMP. STAGE	COMPRESSOR PRESSURE (N/M**2)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS. DIFF. OF TURB. STAGE (N/M**2)	EFFICIENCY OF TURB. STAGE	PRESS AT EXIT OF TURB. STAGE (N/M**2)
5.07E+04	1.01E+07	0.85	5.066E+08	944.4	1.01E+07	0.85	1.01E+06

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (W/(KG/S))	AVAILABLE WORK (W/(KG/S))	HEAT TRANSFERRED (MEG-W/(KG/S))
0.270	5.840E+06	1.440E+07	16.600

	TEMPERATURE (DEG. K)	PRESSURE (N/M**2)	DENSITY (KG/M**3)	ENTHALPY (J/KG)	ENTROPY (J/(KG-K))
STORAGE TANK	18.1	5.07E+04	7.310E+01	-2.76E+05	7.01E+03
COMPRESSOR EXIT	156.0	5.07E+08	1.180E+02	5.56E+06	1.84E+04
HEAT EXCHANGER EXIT	944.0	5.07E+08	6.870E+01	1.73E+07	4.61E+04
TURBINE EXIT	944.0	1.01E+06	2.600E-01	1.36E+07	7.18E+04

STORAGE PRESSURE (N/M**2)	PRESS. DIFF. OF COMP. STAGE (N/M**2)	EFFICIENCY OF COMP. STAGE	COMPRESSOR PRESSURE (N/M**2)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS. DIFF. OF TURB. STAGE (N/M**2)	EFFICIENCY OF TURB. STAGE	PRESS AT EXIT OF TURB STAGE (N/M**2)
5.07E+04	1.01E+07	0.85	1.520E+08	1111.0	1.01E+07	0.85	1.01E+06

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (W/(KG/S))	AVAILABLE WORK (W/(KG/S))	HEAT TRANSFERRED (MEG-W/(KG/S))
0.110	2.010E+06	2.900E+07	17.500

	TEMPERATURE (DEG. K)	PRESSURE (N/M**2)	DENSITY (KG/M**3)	ENTHALPY (J/KG)	ENTROPY (J/(KG-K))
STORAGE TANK	18.1	5.07E+04	7.310E+01	-2.76E+05	7.01E+03
COMPRESSOR EXIT	80.7	1.52E+08	9.790E+01	1.74E+06	1.35E+04
HEAT EXCHANGER EXIT	1110.0	1.52E+08	2.650E+01	1.74E+07	5.37E+04
TURBINE EXIT	1110.0	1.01E+06	2.200E-01	1.61E+07	7.43E+04

STORAGE PRESSURE (N/M**2)	PRESS. DIFF. OF COMP. STAGE (N/M**2)	EFFICIENCY OF COMP. STAGE	COMPRESSOR PRESSURE (N/M**2)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS. DIFF. OF TURB. STAGE (N/M**2)	EFFICIENCY OF TURB. STAGE	PRESS AT EXIT OF TURB. STAGE (N/M**2)
5.07E+04	1.01E+07	0.85	2.026E+08	1111.0	1.01E+07	0.85	1.01E+06

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (W/(KG/S))	AVAILABLE WORK (W/(KG/S))	HEAT TRANSFERRED (MEG-W/(KG/S))
0.140	2.610E+06	2.670E+07	17.800

	TEMPERATURE (DEG. K)	PRESSURE (N/M**2)	DENSITY (KG/M**3)	ENTHALPY (J/KG)	ENTROPY (J/(KG-K))
STORAGE TANK	18.1	5.07E+04	7.310E+01	-2.76E+05	7.01E+03
COMPRESSOR EXIT	94.5	2.03E+08	1.020E+02	2.33E+06	1.45E+04
HEAT EXCHANGER EXIT	1110.0	2.03E+08	3.320E+01	1.78E+07	5.25E+04
TURBINE EXIT	1110.0	1.01E+06	2.200E-01	1.61E+07	7.43E+04

TABLE II. - Continued. NONADIABATIC TURBINE CYCLE

(a) Continued. SI units

STORAGE PRESSURE (N/M**2)	PRESS. DIFF. OF COMP. STAGE (N/M**2)	EFFICIENCY OF COMP. STAGE	COMPRESSOR PRESSURE (N/M**2)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS. DIFF. OF TURB. STAGE (N/M**2)	EFFICIENCY OF TURB. STAGE	PRESS AT EXIT OF TURB. STAGE (N/M**2)
5.07E+04	1.01E+07	0.85	2.533E+08	1111.0	1.01E+07	0.85	1.01E+06

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (W/(KG/S))	AVAILABLE WORK (W/(KG/S))	HEAT TRANSFERRED (MEG-W/(KG/S))
0.160	3.190E+06	2.500E+07	18.100

	TEMPERATURE (DEG. K)	PRESSURE (N/M**2)	DENSITY (KG/M**3)	ENTHALPY (J/KG)	ENTROPY (J/(KG-K))
STORAGE TANK	18.1	5.07E+04	7.310E+01	-2.76E+05	7.01E+03
COMPRESSOR EXIT	107.0	2.53E+08	1.060E+02	2.91E+06	1.54E+04
HEAT EXCHANGER EXIT	1110.0	2.53E+08	3.930E+01	1.81E+07	5.15E+04
TURBINE EXIT	1110.0	1.01E+06	2.200E-01	1.61E+07	7.43E+04

STORAGE PRESSURE (N/M**2)	PRESS. DIFF. OF COMP. STAGE (N/M**2)	EFFICIENCY OF COMP. STAGE	COMPRESSOR PRESSURE (N/M**2)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS. DIFF. OF TURB. STAGE (N/M**2)	EFFICIENCY OF TURB. STAGE	PRESS AT EXIT OF TURB. STAGE (N/M**2)
5.07E+04	1.01E+07	0.85	3.040E+08	1111.0	1.01E+07	0.85	1.01E+06

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (W/(KG/S))	AVAILABLE WORK (W/(KG/S))	HEAT TRANSFERRED (MEG-W/(KG/S))
0.170	3.740E+06	2.350E+07	18.400

	TEMPERATURE (DEG. K)	PRESSURE (N/M**2)	DENSITY (KG/M**3)	ENTHALPY (J/KG)	ENTROPY (J/(KG-K))
STORAGE TANK	18.1	5.07E+04	7.310E+01	-2.76E+05	7.01E+03
COMPRESSOR EXIT	118.0	3.04E+08	1.090E+02	3.47E+06	1.61E+04
HEAT EXCHANGER EXIT	1110.0	3.04E+08	4.490E+01	1.85E+07	5.08E+04
TURBINE EXIT	1110.0	1.01E+06	2.200E-01	1.61E+07	7.43E+04

STORAGE PRESSURE (N/M**2)	PRESS. DIFF. OF COMP. STAGE (N/M**2)	EFFICIENCY OF COMP. STAGE	COMPRESSOR PRESSURE (N/M**2)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS. DIFF. OF TURB. STAGE (N/M**2)	EFFICIENCY OF TURB. STAGE	PRESS AT EXIT OF TURB. STAGE (N/M**2)
5.07E+04	1.01E+07	0.85	3.546E+08	1111.0	1.01E+07	0.85	1.01E+06

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (W/(KG/S))	AVAILABLE WORK (W/(KG/S))	HEAT TRANSFERRED (MEG-W/(KG/S))
0.190	4.280E+06	2.220E+07	18.600

	TEMPERATURE (DEG. K)	PRESSURE (N/M**2)	DENSITY (KG/M**3)	ENTHALPY (J/KG)	ENTROPY (J/(KG-K))
STORAGE TANK	18 1	5.07E+04	7.310E+01	-2.76E+05	7.01E+03
COMPRESSOR EXIT	128.0	3.55E+08	1.120E+02	4.01E+06	1.68E+04
HEAT EXCHANGER EXIT	1110.0	3.55E+08	4.990E+01	1.88E+07	5.01E+04
TURBINE EXIT	1110.0	1.01E+06	2.200E-01	1.61E+07	7.43E+04

STORAGE PRESSURE (N/M**2)	PRESS. DIFF. OF COMP. STAGE (N/M**2)	EFFICIENCY OF COMP. STAGE	COMPRESSOR PRESSURE (N/M**2)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS. DIFF. OF TURB. STAGE (N/M**2)	EFFICIENCY OF TURB. STAGE	PRESS AT EXIT OF TURB. STAGE (N/M**2)
5.07E+04	1.01E+07	0.85	4.053E+08	1111.0	1.01E+07	0.85	1.01E+06

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (W/(KG/S))	AVAILABLE WORK (W/(KG/S))	HEAT TRANSFERRED (MEG-W/(KG/S))
0.210	4.810E+06	2.110E+07	18.800

	TEMPERATURE (DEG. K)	PRESSURE (N/M**2)	DENSITY (KG/M**3)	ENTHALPY (J/KG)	ENTROPY (J/(KG-K))
STORAGE TANK	18.1	5.07E+04	7.310E+01	-2.76E+05	7.01E+03
COMPRESSOR EXIT	138.0	4.05E+08	1.140E+02	4.54E+06	1.74E+04
HEAT EXCHANGER EXIT	1110.0	4.05E+08	5.460E+01	1.92E+07	4.96E+04
TURBINE EXIT	1110.0	1.01E+06	2.200E-01	1.61E+07	7.43E+04

TABLE II. - Continued. NONADIABATIC TURBINE CYCLE

(a) Concluded. SI units

STORAGE PRESSURE (N/M**2)	PRESS. DIFF. OF COMP. STAGE (N/M**2)	EFFICIENCY OF COMP. STAGE	COMPRESSOR PRESSURE (N/M**2)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS. DIFF. OF TURB. STAGE (N/M**2)	EFFICIENCY OF TURB. STAGE	PRESS AT EXIT OF TURB. STAGE (N/M**2)
5.07E+04	1.01E+07	0.85	4.560E+08	1111.0	1.01E+07	0.85	1.01E+06

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (W/(KG/S))	AVAILABLE WORK (W/(KG/S))	HEAT TRANSFERRED (MEG-W/(KG/S))
0.220	5.330E+06	2.020E+07	19.000

	TEMPERATURE (DEG. K)	PRESSURE (N/M**2)	DENSITY (KG/M**3)	ENTHALPY (J/KG)	ENTROPY (J/(KG-K))
STORAGE TANK	18.1	5.07E+04	7.310E+01	-2.76E+05	7.01E+03
COMPRESSOR EXIT	147.0	4.56E+08	1.160E+02	5.05E+06	1.79E+04
HEAT EXCHANGER EXIT	1110.0	4.56E+08	5.890E+01	1.95E+07	4.91E+04
TURBINE EXIT	1110.0	1.01E+06	2.200E-01	1.61E+07	7.43E+04

STORAGE PRESSURE (N/M**2)	PRESS. DIFF. OF COMP. STAGE (N/M**2)	EFFICIENCY OF COMP. STAGE	COMPRESSOR PRESSURE (N/M**2)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS. DIFF. OF TURB. STAGE (N/M**2)	EFFICIENCY OF TURB. STAGE	PRESS AT EXIT OF TURB. STAGE (N/M**2)
5.07E+04	1.01E+07	0.85	5.066E+08	1111.0	1.01E+07	0.85	1.01E+06

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (W/(KG/S))	AVAILABLE WORK (W/(KG/S))	HEAT TRANSFERRED (MEG-W/(KG/S))
0.240	5.840E+06	1.930E+07	19.200

	TEMPERATURE (DEG. K)	PRESSURE (N/M**2)	DENSITY (KG/M**3)	ENTHALPY (J/KG)	ENTROPY (J/(KG-K))
STORAGE TANK	18.1	5.07E+04	7.310E+01	-2.76E+05	7.01E+03
COMPRESSOR EXIT	156.0	5.07E+08	1.180E+02	5.56E+06	1.84E+04
HEAT EXCHANGER EXIT	1110.0	5.07E+08	6.300E+01	1.98E+07	4.86E+04
TURBINE EXIT	1110.0	1.01E+06	2.200E-01	1.61E+07	7.43E+04

STORAGE PRESSURE (N/M**2)	PRESS. DIFF. OF COMP. STAGE (N/M**2)	EFFICIENCY OF COMP. STAGE	COMPRESSOR PRESSURE (N/M**2)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS. DIFF. OF TURB. STAGE (N/M**2)	EFFICIENCY OF TURB. STAGE	PRESS AT EXIT OF TURB. STAGE (N/M**2)
5.07E+04	1.01E+07	0.85	5.066E+07	1111.0	1.01E+07	0.85	1.01E+06

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (W/(KG/S))	AVAILABLE WORK (W/(KG/S))	HEAT TRANSFERRED (MEG-W/(KG/S))
0.056	7.270E+05	3.690E+07	16.800

	TEMPERATURE (DEG. K)	PRESSURE (N/M**2)	DENSITY (KG/M**3)	ENTHALPY (J/KG)	ENTROPY (J/(KG-K))
STORAGE TANK	18.1	5.07E+04	7.310E+01	-2.76E+05	7.01E+03
COMPRESSOR EXIT	43.3	5.07E+07	8.650E+01	4.51E+05	1.04E+04
HEAT EXCHANGER EXIT	1110.0	5.07E+07	1.020E+01	1.66E+07	5.82E+04
TURBINE EXIT	1110.0	1.01E+06	2.200E-01	1.61E+07	7.43E+04

STORAGE PRESSURE (N/M**2)	PRESS. DIFF. OF COMP. STAGE (N/M**2)	EFFICIENCY OF COMP. STAGE	COMPRESSOR PRESSURE (N/M**2)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS. DIFF. OF TURB. STAGE (N/M**2)	EFFICIENCY OF TURB. STAGE	PRESS AT EXIT OF TURB. STAGE (N/M**2)
5.07E+04	1.01E+07	0.85	1.013E+08	1111.0	1.01E+07	0.85	1.01E+06

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (W/(KG/S))	AVAILABLE WORK (W/(KG/S))	HEAT TRANSFERRED (MEG-W/(KG/S))
0.087	1.390E+06	3.200E+07	17.200

	TEMPERATURE (DEG. K)	PRESSURE (N/M**2)	DENSITY (KG/M**3)	ENTHALPY (J/KG)	ENTROPY (J/(KG-K))
STORAGE TANK	18.1	5.07E+04	7.310E+01	-2.76E+05	7.01E+03
COMPRESSOR EXIT	64.3	1.01E+08	9.280E+01	1.11E+06	1.22E+04
HEAT EXCHANGER EXIT	1110.0	1.01E+08	1.890E+01	1.70E+07	5.53E+04
TURBINE EXIT	1110.0	1.01E+06	2.200E-01	1.61E+07	7.43E+04

TABLE II. - Continued. NONADIABATIC TURBINE CYCLE

(b) U.S. customary units

STORAGE PRESSURE (ATM)	PRESS. DIFF. OF COMP. STAGE (ATM)	EFFICIENCY OF COMP. STAGE	COMPRESSOR PRESSURE (ATM)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS. DIFF. OF TURB. STAGE (ATM)	EFFICIENCY OF TURB. STAGE	PRESS AT EXIT OF TURB. STAGE (ATM)
0.50	100.0	0.85	500.0	944.4	100.0	0.85	10.CC

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (HP/(LB/S))	AVAILABLE WORK (HP/(LB/S))	HEAT TRANSFERRED (MEG-W/(LB/S))
0.066	442.0	17700.0	6.490

	TEMPERATURE (DEG. K)	PRESSURE (ATM)	DENSITY (G/CM**3)	ENTHALPY (CAL/G)	ENTROPY (CAL/(G-K))
STORAGE TANK	18.1	0.50	7.310E-02	-65.9	1.68
COMPRESSOR EXIT	43.3	500.00	8.650E-02	108.0	2.49
HEAT EXCHANGER EXIT	944.0	500.00	1.180E-02	3360.0	13.30
TURBINE EXIT	944.0	10.00	2.590E-04	3260.0	17.2C

STORAGE PRESSURE (ATM)	PRESS. DIFF. OF COMP. STAGE (ATM)	EFFICIENCY OF COMP. STAGE	COMPRESSOR PRESSURE (ATM)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS. DIFF. OF TURB. STAGE (ATM)	EFFICIENCY OF TURB. STAGE	PRESS AT EXIT OF TURB. STAGE (ATM)
0.50	100.0	0.85	1000.0	944.4	100.0	C.85	10.0C

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (HP/(LB/S))	AVAILABLE WORK (HP/(LB/S))	HEAT TRANSFERRED (MEG-W/(LB/S))
0.100	844.0	15200.0	6.650

	TEMPERATURE (DEG. K)	PRESSURE (ATM)	DENSITY (G/CM**3)	ENTHALPY (CAL/G)	ENTROPY (CAL/(G-K))
STORAGE TANK	18.1	0.50	7.310E-02	-65.9	1.68
COMPRESSOR EXIT	64.3	1000.00	9.280E-02	266.0	2.92
HEAT EXCHANGER EXIT	944.0	1000.00	2.160E-02	3460.0	12.60
TURBINE EXIT	944.0	10.00	2.590E-04	3260.0	17.20

STORAGE PRESSURE (ATM)	PRESS. DIFF. OF COMP. STAGE (ATM)	EFFICIENCY OF COMP. STAGE	COMPRESSOR PRESSURE (ATM)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS. DIFF. OF TURB. STAGE (ATM)	EFFICIENCY OF TURB. STAGE	PRESS AT EXIT OF TURB. STAGE (ATM)
0.50	100.0	0.85	1500.0	944.4	100.0	0.85	10.00

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (HP/(LB/S))	AVAILABLE WORK (HP/(LB/S))	HEAT TRANSFERRED (MEG-W/(LB/S))
0.130	1220.0	13700.0	6.790

	TEMPERATURE (DEG. K)	PRESSURE (ATM)	DENSITY (G/CM**3)	ENTHALPY (CAL/G)	ENTROPY (CAL/(G-K))
STORAGE TANK	18.1	0.50	7.310E-02	-65.9	1.68
COMPRESSOR EXIT	80.7	1500.00	9.790E-02	415.0	3.23
HEAT EXCHANGER EXIT	944.0	1500.00	3.000E-02	3550.0	12.20
TURBINE EXIT	944.0	10.00	2.590E-04	3260.0	17.20

STORAGE PRESSURE (ATM)	PRESS. DIFF. OF COMP. STAGE (ATM)	EFFICIENCY OF COMP. STAGE	COMPRESSOR PRESSURE (ATM)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS. DIFF. OF TURB. STAGE (ATM)	EFFICIENCY OF TURB. STAGE	PRESS AT EXIT OF TURB. STAGE (ATM)
0.50	100.0	0.85	2000.0	944.4	100.0	0.85	10.00

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (HP/(LB/S))	AVAILABLE WORK (HP/(LB/S))	HEAT TRANSFERRED (MEG-W/(LB/S))
0.160	1590.0	12500.0	6.920

	TEMPERATURE (DEG. K)	PRESSURE (ATM)	DENSITY (G/CM**3)	ENTHALPY (CAL/G)	ENTROPY (CAL/(G-K))
STORAGE TANK	18.1	0.50	7.310E-02	-65.9	1.68
COMPRESSOR EXIT	94.5	2000.00	1.000E-01	557.0	3.47
HEAT EXCHANGER EXIT	944.0	2000.00	3.740E-02	3640.0	11.90
TURBINE EXIT	944.0	10.00	2.590E-04	3260.0	17.20

TABLE II. - Continued. NONADIABATIC TURBINE CYCLE

(b) Continued. U.S. customary units

STORAGE PRESSURE (ATM)	PRESS. DIFF. OF COMP. STAGE (ATM)	EFFICIENCY OF COMP. STAGE	COMPRESSOR PRESSURE (ATM)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS. DIFF. OF TURB. STAGE (ATM)	EFFICIENCY OF TURB. STAGE	PRESS AT EXIT OF TURB. STAGE (ATM)
0.50	100.0	0.85	2500.0	944.4	100.0	0.85	10.CC

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (HP/(LB/S))	AVAILABLE WORK (HP/(LB/S))	HEAT TRANSFERRED (MEG-W/(LB/S))
0.180	1940.0	11600.0	7.040

	TEMPERATURE (DEG. K)	PRESSURE (ATM)	DENSITY (G/CM**3)	ENTHALPY (CAL/G)	ENTROPY (CAL/(G-K))
STORAGE TANK	18.1	0.50	7.310E-02	-65.9	1.68
COMPRESSOR EXIT	107.0	2500.00	1.100E-01	696.0	3.68
HEAT EXCHANGER EXIT	944.0	2500.00	4.390E-02	3720.0	11.70
TURBINE EXIT	944.0	10.00	2.590E-04	3260.0	17.20

STORAGE PRESSURE (ATM)	PRESS. DIFF. OF COMP. STAGE (ATM)	EFFICIENCY OF COMP. STAGE	COMPRESSOR PRESSURE (ATM)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS. DIFF. OF TURB. STAGE (ATM)	EFFICIENCY OF TURB. STAGE	PRESS AT EXIT OF TURB. STAGE (ATM)
0.50	100.0	0.85	3000.0	944.4	100.0	0.85	10.CO

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (HP/(LB/S))	AVAILABLE WORK (HP/(LB/S))	HEAT TRANSFERRED (MEG-W/(LB/S))
0.200	2280.0	10900.0	7.140

	TEMPERATURE (DEG. K)	PRESSURE (ATM)	DENSITY (G/CM**3)	ENTHALPY (CAL/G)	ENTROPY (CAL/(G-K))
STORAGE TANK	18.1	0.50	7.310E-02	-65.9	1.68
COMPRESSOR EXIT	118.0	3000.00	1.100E-01	828.0	3.85
HEAT EXCHANGER EXIT	944.0	3000.00	4.980E-02	3810.0	11.50
TURBINE EXIT	944.0	10.00	2.590E-04	3260.0	17.20

STORAGE PRESSURE (ATM)	PRESS. DIFF. OF COMP. STAGE (ATM)	EFFICIENCY OF COMP. STAGE	COMPRESSOR PRESSURE (ATM)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS. DIFF. OF TURB. STAGE (ATM)	EFFICIENCY OF TURB. STAGE	PRESS AT EXIT OF TURB. STAGE (ATM)
0.50	100.0	0.85	3500.0	944.4	100.0	0.85	10.00

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (HP/(LB/S))	AVAILABLE WORK (HP/(LB/S))	HEAT TRANSFERRED (MEG-W/(LB/S))
0.220	2600.0	10300.0	7.240

	TEMPERATURE (DEG. K)	PRESSURE (ATM)	DENSITY (G/CM**3)	ENTHALPY (CAL/G)	ENTROPY (CAL/(G-K))
STORAGE TANK	18.1	0.50	7.310E-02	-65.9	1.68
COMPRESSOR EXIT	128.0	3500.00	1.100E-01	958.0	4.01
HEAT EXCHANGER EXIT	944.0	3500.00	5.520E-02	3890.0	11.40
TURBINE EXIT	944.0	10.00	2.590E-04	3260.0	17.20

STORAGE PRESSURE (ATM)	PRESS. DIFF. OF COMP. STAGE (ATM)	EFFICIENCY OF COMP. STAGE	COMPRESSOR PRESSURE (ATM)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS. DIFF. OF TURB. STAGE (ATM)	EFFICIENCY OF TURB. STAGE	PRESS AT EXIT OF TURB. STAGE (ATM)
0.50	100.0	0.85	4000.0	944.4	100.0	0.85	10.00

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (HP/(LB/S))	AVAILABLE WORK (HP/(LB/S))	HEAT TRANSFERRED (MEG-W/(LB/S))
0.240	2930.0	9700.0	7.340

	TEMPERATURE (DEG. K)	PRESSURE (ATM)	DENSITY (G/CM**3)	ENTHALPY (CAL/G)	ENTROPY (CAL/(G-K))
STORAGE TANK	18.1	0.50	7.310E-02	-65.9	1.68
COMPRESSOR EXIT	138.0	4000.00	1.100E-01	1080.0	4.15
HEAT EXCHANGER EXIT	944.0	4000.00	6.010E-02	3970.0	11.20
TURBINE EXIT	944.0	10.00	2.590E-04	3260.0	17.20

TABLE II. - Continued. NONADIABATIC TURBINE CYCLE

(b) Continued. U.S. customary units

STORAGE PRESSURE (ATM)	PRESS. DIFF. OF COMP. STAGE (ATM)	EFFICIENCY OF COMP. STAGE	COMPRESSOR PRESSURE (ATM)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS. DIFF. OF TURB. STAGE (ATM)	EFFICIENCY OF TURB. STAGE	PRESS AT EXIT OF TURB. STAGE (ATM)
0.50	100.0	0.85	4500.0	944.4	100.0	0.85	10.00

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (HP/(LB/S))	AVAILABLE WORK (HP/(LB/S))	HEAT TRANSFERRED (MEG-W/(LB/S))
0.260	3240.0	9210.0	7.430

	TEMPERATURE (DEG. K)	PRESSURE (ATM)	DENSITY (G/CM**3)	ENTHALPY (CAL/G)	ENTROPY (CAL/(G-K))
STORAGE TANK	18.1	0.50	7.310E-02	-65.9	1.68
COMPRESSOR EXIT	147.0	4500.00	1.200E-01	1210.0	4.28
HEAT EXCHANGER EXIT	944.0	4500.00	6.460E-02	4050.0	11.10
TURBINE EXIT	944.0	10.00	2.590E-04	3260.0	17.20

STORAGE PRESSURE (ATM)	PRESS. DIFF. OF COMP. STAGE (ATM)	EFFICIENCY OF COMP. STAGE	COMPRESSOR PRESSURE (ATM)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS. DIFF. OF TURB. STAGE (ATM)	EFFICIENCY OF TURB. STAGE	PRESS AT EXIT OF TURB. STAGE (ATM)
0.50	100.0	0.85	5000.0	944.4	100.0	0.85	10.00

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (HP/(LB/S))	AVAILABLE WORK (HP/(LB/S))	HEAT TRANSFERRED (MEG-W/(LB/S))
0.270	3550.0	8770.0	7.510

	TEMPERATURE (DEG. K)	PRESSURE (ATM)	DENSITY (G/CM**3)	ENTHALPY (CAL/G)	ENTROPY (CAL/(G-K))
STORAGE TANK	18.1	0.50	7.310E-02	-65.9	1.68
COMPRESSOR EXIT	156.0	5000.00	1.200E-01	1330.0	4.40
HEAT EXCHANGER EXIT	944.0	5000.00	6.870E-02	4130.0	11.00
TURBINE EXIT	944.0	10.00	2.590E-04	3260.0	17.20

STORAGE PRESSURE (ATM)	PRESS. DIFF. OF COMP. STAGE (ATM)	EFFICIENCY OF COMP. STAGE	COMPRESSOR PRESSURE (ATM)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS. DIFF. OF TURB. STAGE (ATM)	EFFICIENCY OF TURB. STAGE	PRESS AT EXIT OF TURB. STAGE (ATM)
0.50	100.0	0.85	500.0	1111.0	100.0	0.85	10.00

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (HP/(LB/S))	AVAILABLE WORK (HP/(LB/S))	HEAT TRANSFERRED (MEG-W/(LB/S))
0.056	442.0	22500.0	7.630

	TEMPERATURE (DEG. K)	PRESSURE (ATM)	DENSITY (G/CM**3)	ENTHALPY (CAL/G)	ENTROPY (CAL/(G-K))
STORAGE TANK	18.1	0.50	7.310E-02	-65.9	1.68
COMPRESSOR EXIT	43.3	500.00	8.650E-02	108.0	2.49
HEAT EXCHANGER EXIT	1110.0	500.00	1.020E-02	3960.0	13.90
TURBINE EXIT	1110.0	10.00	2.210E-04	3860.0	17.80

STORAGE PRESSURE (ATM)	PRESS. DIFF. OF COMP. STAGE (ATM)	EFFICIENCY OF COMP. STAGE	COMPRESSOR PRESSURE (ATM)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS. DIFF. OF TURB. STAGE (ATM)	EFFICIENCY OF TURB. STAGE	PRESS AT EXIT OF TURB. STAGE (ATM)
0.50	100.0	0.85	1000.0	1111.0	100.0	0.85	10.00

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (HP/(LB/S))	AVAILABLE WORK (HP/(LB/S))	HEAT TRANSFERRED (MEG-W/(LB/S))
0.087	844.0	19500.0	7.790

	TEMPERATURE (DEG. K)	PRESSURE (ATM)	DENSITY (G/CM**3)	ENTHALPY (CAL/G)	ENTROPY (CAL/(G-K))
STORAGE TANK	18.1	0.50	7.310E-02	-65.9	1.68
COMPRESSOR EXIT	64.3	1000.00	9.280E-02	266.0	2.92
HEAT EXCHANGER EXIT	1110.0	1000.00	1.890E-02	4060.0	13.20
TURBINE EXIT	1110.0	10.00	2.210E-04	3860.0	17.80

TABLE II. - Continued. NONADIABATIC TURBINE CYCLE

(b) Continued. U. S. customary units

STORAGE PRESSURE (ATM)	PRESS. DIFF. OF COMP. STAGE (ATM)	EFFICIENCY OF COMP. STAGE	COMPRESSOR PRESSURE (ATM)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS. DIFF. OF TURB. STAGE (ATM)	EFFICIENCY OF TURB. STAGE	PRESS AT EXIT OF TURB. STAGE (ATM)
0.50	100.0	0.85	1500.0	1111.0	100.0	0.85	10.00

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (HP/(LB/S))	AVAILABLE WORK (HP/(LB/S))	HEAT TRANSFERRED (MEG-W/(LB/S))
0.110	1220.0	17600.0	7.940

	TEMPERATURE (DEG. K)	PRESSURE (ATM)	DENSITY (G/CM**3)	ENTHALPY (CAL/G)	ENTROPY (CAL/(G-K))
STORAGE TANK	18.1	0.50	7.310E-02	-65.9	1.68
COMPRESSOR EXIT	80.7	1500.00	9.790E-02	415.0	3.23
HEAT EXCHANGER EXIT	1110.0	1500.00	2.650E-02	4150.0	12.80
TURBINE EXIT	1110.0	10.00	2.210E-04	3860.0	17.80

STORAGE PRESSURE (ATM)	PRESS. DIFF. OF COMP. STAGE (ATM)	EFFICIENCY OF COMP. STAGE	COMPRESSOR PRESSURE (ATM)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS. DIFF. OF TURB. STAGE (ATM)	EFFICIENCY OF TURB. STAGE	PRESS AT EXIT OF TURB. STAGE (ATM)
0.50	100.0	0.85	2000.0	1111.0	100.0	0.85	10.00

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (HP/(LB/S))	AVAILABLE WORK (HP/(LB/S))	HEAT TRANSFERRED (MEG-W/(LB/S))
0.140	1590.0	16300.0	8.080

	TEMPERATURE (DEG. K)	PRESSURE (ATM)	DENSITY (G/CM**3)	ENTHALPY (CAL/G)	ENTROPY (CAL/(G-K))
STORAGE TANK	18.1	0.50	7.310E-02	-65.9	1.68
COMPRESSOR EXIT	94.5	2000.00	1.000E-01	557.0	3.47
HEAT EXCHANGER EXIT	1110.0	2000.00	3.320E-02	4240.0	12.50
TURBINE EXIT	1110.0	10.00	2.210E-04	3860.0	17.80

STORAGE PRESSURE (ATM)	PRESS. DIFF. OF COMP. STAGE (ATM)	EFFICIENCY OF COMP. STAGE	COMPRESSOR PRESSURE (ATM)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS. DIFF. OF TURB. STAGE (ATM)	EFFICIENCY OF TURB. STAGE	PRESS AT EXIT OF TURB. STAGE (ATM)
0.50	100.0	0.85	2500.0	1111.0	100.0	0.85	10.00

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (HP/(LB/S))	AVAILABLE WORK (HP/(LB/S))	HEAT TRANSFERRED (MEG-W/(LB/S))
0.160	1940.0	15200.0	8.210

	TEMPERATURE (DEG. K)	PRESSURE (ATM)	DENSITY (G/CM**3)	ENTHALPY (CAL/G)	ENTROPY (CAL/(G-K))
STORAGE TANK	18.1	0.50	7.310E-02	-65.9	1.68
COMPRESSOR EXIT	107.0	2500.00	1.100E-01	696.0	3.68
HEAT EXCHANGER EXIT	1110.0	2500.00	3.930E-02	4330.0	12.30
TURBINE EXIT	1110.0	10.00	2.210E-04	3860.0	17.80

STORAGE PRESSURE (ATM)	PRESS. DIFF. OF COMP. STAGE (ATM)	EFFICIENCY OF COMP. STAGE	COMPRESSOR PRESSURE (ATM)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS. DIFF. OF TURB. STAGE (ATM)	EFFICIENCY OF TURB. STAGE	PRESS AT EXIT OF TURB. STAGE (ATM)
0.50	100.0	0.85	3000.0	1111.0	100.0	0.85	10.00

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (HP/(LB/S))	AVAILABLE WORK (HP/(LB/S))	HEAT TRANSFERRED (MEG-W/(LB/S))
0.170	2280.0	14300.0	8.320

	TEMPERATURE (DEG. K)	PRESSURE (ATM)	DENSITY (G/CM**3)	ENTHALPY (CAL/G)	ENTROPY (CAL/(G-K))
STORAGE TANK	18.1	0.50	7.310E-02	-65.9	1.68
COMPRESSOR EXIT	118.0	3000.00	1.100E-01	828.0	3.85
HEAT EXCHANGER EXIT	1110.0	3000.00	4.490E-02	4420.0	12.10
TURBINE EXIT	1110.0	10.00	2.210E-04	3860.0	17.80

TABLE II. - Concluded. NONADIABATIC TURBINE CYCLE

(b) Concluded. U.S. customary units

STORAGE PRESSURE (ATM)	PRESS. DIFF. OF COMP. STAGE (ATM)	EFFICIENCY OF COMP. STAGE	COMPRESSOR PRESSURE (ATM)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS. DIFF. OF TURB. STAGE (ATM)	EFFICIENCY OF TURB. STAGE	PRESS AT EXIT OF TURB. STAGE (ATM)
0.50	100.0	0.85	3500.0	1111.0	100.0	0.85	10.00

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (HP/(LB/S))	AVAILABLE WORK (HP/(LB/S))	HEAT TRANSFERRED (MEG-W/(LB/S))
0.190	2600.0	13500.0	8.430

	TEMPERATURE (DEG. K)	PRESSURE (ATM)	DENSITY (G/CM**3)	ENTHALPY (CAL/G)	ENTROPY (CAL/(G-K))
STORAGE TANK	18.1	0.50	7.310E-02	-65.9	1.68
COMPRESSOR EXIT	128.0	3500.00	1.100E-01	958.0	4.01
HEAT EXCHANGER EXIT	1110.0	3500.00	4.990E-02	4500.0	12.00
TURBINE EXIT	1110.0	10.00	2.210E-04	3860.0	17.80

STORAGE PRESSURE (ATM)	PRESS. DIFF. OF COMP. STAGE (ATM)	EFFICIENCY OF COMP. STAGE	COMPRESSOR PRESSURE (ATM)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS. DIFF. OF TURB. STAGE (ATM)	EFFICIENCY OF TURB. STAGE	PRESS AT EXIT OF TURB. STAGE (ATM)
0.50	100.0	0.85	4000.0	1111.0	100.0	0.85	10.00

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (HP/(LB/S))	AVAILABLE WORK (HP/(LB/S))	HEAT TRANSFERRED (MEG-W/(LB/S))
0.210	2930.0	12900.0	8.540

	TEMPERATURE (DEG. K)	PRESSURE (ATM)	DENSITY (G/CM**3)	ENTHALPY (CAL/G)	ENTROPY (CAL/(G-K))
STORAGE TANK	18.1	0.50	7.310E-02	-65.9	1.68
COMPRESSOR EXIT	138.0	4000.00	1.100E-01	1080.0	4.15
HEAT EXCHANGER EXIT	1110.0	4000.00	5.460E-02	4580.0	11.80
TURBINE EXIT	1110.0	10.00	2.210E-04	3860.0	17.80

STORAGE PRESSURE (ATM)	PRESS. DIFF. OF COMP. STAGE (ATM)	EFFICIENCY OF COMP. STAGE	COMPRESSOR PRESSURE (ATM)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS. DIFF. OF TURB. STAGE (ATM)	EFFICIENCY OF TURB. STAGE	PRESS AT EXIT OF TURB. STAGE (ATM)
0.50	100.0	0.85	4500.0	1111.0	100.0	0.85	10.00

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (HP/(LB/S))	AVAILABLE WORK (HP/(LB/S))	HEAT TRANSFERRED (MEG-W/(LB/S))
0.220	3240.0	12300.0	8.630

	TEMPERATURE (DEG. K)	PRESSURE (ATM)	DENSITY (G/CM**3)	ENTHALPY (CAL/G)	ENTROPY (CAL/(G-K))
STORAGE TANK	18.1	0.50	7.310E-02	-65.9	1.68
COMPRESSOR EXIT	147.0	4500.00	1.200E-01	1210.0	4.28
HEAT EXCHANGER EXIT	1110.0	4500.00	5.890E-02	4660.0	11.70
TURBINE EXIT	1110.0	10.00	2.210E-04	3860.0	17.80

STORAGE PRESSURE (ATM)	PRESS. DIFF. OF COMP. STAGE (ATM)	EFFICIENCY OF COMP. STAGE	COMPRESSOR PRESSURE (ATM)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS. DIFF. OF TURB. STAGE (ATM)	EFFICIENCY OF TURB. STAGE	PRESS AT EXIT OF TURB. STAGE (ATM)
0.50	100.0	0.85	5000.0	1111.0	100.0	0.85	10.00

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (HP/(LB/S))	AVAILABLE WORK (HP/(LB/S))	HEAT TRANSFERRED (MEG-W/(LB/S))
0.240	3550.0	11700.0	8.730

	TEMPERATURE (DEG. K)	PRESSURE (ATM)	DENSITY (G/CM**3)	ENTHALPY (CAL/G)	ENTROPY (CAL/(G-K))
STORAGE TANK	18.1	0.50	7.310E-02	-65.9	1.68
COMPRESSOR EXIT	156.0	5000.00	1.200E-01	1330.0	4.40
HEAT EXCHANGER EXIT	1110.0	5000.00	6.300E-02	4740.0	11.60
TURBINE EXIT	1110.0	10.00	2.210E-04	3860.0	17.80

TABLE III. - ADIABATIC TURBINE CYCLE

(a) SI units

STORAGE PRESSURE (N/M**2)	PRESS. DIFF. OF COMP. STAGE (N/M**2)	EFFICIENCY OF COMP. STAGE	COMPRESSOR PRESSURE (N/M**2)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS. DIFF. OF TURB. STAGE (N/M**2)	EFFICIENCY OF TURB. STAGE	PRESS AT EXIT OF TURB. STAGE (N/M**2)
5.07E+04	1.01E+07	0.85	5.066E+07	944.4	1.01E+07	0.85	1.01E+06

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (W/(KG/S))	AVAILABLE WORK (W/(KG/S))	HEAT TRANSFERRED (MEG-W/(KG/S))
0.084	7.270E+05	2.920E+07	13.600

	TEMPERATURE (DEG. K)	PRESSURE (N/M**2)	DENSITY (KG/M**3)	ENTHALPY (J/KG)	ENTROPY (J/(KG-K))
STORAGE TANK	18.1	5.07E+04	7.310E+01	-2.76E+05	7.01E+03
COMPRESSOR EXIT	43.3	5.07E+07	8.650E+01	4.51E+05	1.04E+04
HEAT EXCHANGER EXIT	944.0	5.07E+07	1.180E+01	1.41E+07	5.57E+04
TURBINE EXIT	381.0	1.01E+06	6.400E-01	5.39E+06	5.88E+04

STORAGE PRESSURE (N/M**2)	PRESS. DIFF. OF COMP. STAGE (N/M**2)	EFFICIENCY OF COMP. STAGE	COMPRESSOR PRESSURE (N/M**2)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS. DIFF. OF TURB. STAGE (N/M**2)	EFFICIENCY OF TURB. STAGE	PRESS AT EXIT OF TURB. STAGE (N/M**2)
5.07E+04	1.01E+07	0.85	1.013E+08	944.4	1.01E+07	0.85	1.01E+06

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (W/(KG/S))	AVAILABLE WORK (W/(KG/S))	HEAT TRANSFERRED (MEG-W/(KG/S))
0.140	1.390E+06	2.500E+07	13.400

	TEMPERATURE (DEG. K)	PRESSURE (N/M**2)	DENSITY (KG/M**3)	ENTHALPY (J/KG)	ENTROPY (J/(KG-K))
STORAGE TANK	18.1	5.07E+04	7.310E+01	-2.76E+05	7.01E+03
COMPRESSOR EXIT	64.3	1.01E+08	9.280E+01	1.11E+06	1.22E+04
HEAT EXCHANGER EXIT	944.0	1.01E+08	2.160E+01	1.45E+07	5.29E+04
TURBINE EXIT	321.0	1.01E+06	7.600E-01	4.52E+06	5.63E+04

STORAGE PRESSURE (N/M**2)	PRESS. DIFF. OF COMP. STAGE (N/M**2)	EFFICIENCY OF COMP. STAGE	COMPRESSOR PRESSURE (N/M**2)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS. DIFF. OF TURB. STAGE (N/M**2)	EFFICIENCY OF TURB. STAGE	PRESS AT EXIT OF TURB. STAGE (N/M**2)
5.07E+04	1.01E+07	0.85	1.520E+08	944.4	1.01E+07	0.85	1.01E+06

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (W/(KG/S))	AVAILABLE WORK (W/(KG/S))	HEAT TRANSFERRED (MEG-W/(KG/S))
0.190	2.010E+06	2.250E+07	13.100

	TEMPERATURE (DEG. K)	PRESSURE (N/M**2)	DENSITY (KG/M**3)	ENTHALPY (J/KG)	ENTROPY (J/(KG-K))
STORAGE TANK	18.1	5.07E+04	7.310E+01	-2.76E+05	7.01E+03
COMPRESSOR EXIT	80.7	1.52E+08	9.790E+01	1.74E+06	1.35E+04
HEAT EXCHANGER EXIT	944.0	1.52E+08	3.000E+01	1.49E+07	5.12E+04
TURBINE EXIT	297.0	1.01E+06	8.200E-01	4.15E+06	5.51E+04

STORAGE PRESSURE (N/M**2)	PRESS. DIFF. OF COMP. STAGE (N/M**2)	EFFICIENCY OF COMP. STAGE	COMPRESSOR PRESSURE (N/M**2)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS. DIFF. OF TURB. STAGE (N/M**2)	EFFICIENCY OF TURB. STAGE	PRESS AT EXIT OF TURB. STAGE (N/M**2)
5.07E+04	1.01E+07	0.85	2.026E+08	944.4	1.01E+07	0.85	1.01E+06

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (W/(KG/S))	AVAILABLE WORK (W/(KG/S))	HEAT TRANSFERRED (MEG-W/(KG/S))
0.230	2.610E+06	2.060E+07	12.900

	TEMPERATURE (DEG. K)	PRESSURE (N/M**2)	DENSITY (KG/M**3)	ENTHALPY (J/KG)	ENTROPY (J/(KG-K))
STORAGE TANK	18.1	5.07E+04	7.310E+01	-2.76E+05	7.01E+03
COMPRESSOR EXIT	94.5	2.03E+08	1.020E+02	2.33E+06	1.45E+04
HEAT EXCHANGER EXIT	944.0	2.03E+08	3.740E+01	1.52E+07	5.00E+04
TURBINE EXIT	278.0	1.01E+06	8.800E-01	3.88E+06	5.42E+04

TABLE III. - Continued. ADIABATIC TURBINE CYCLE

(a) Continued. SI units

STORAGE PRESSURE (N/M**2)	PRESS. DIFF. OF COMP. STAGE (N/M**2)	EFFICIENCY OF COMP. STAGE	COMPRESSOR PRESSURE (N/M**2)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS. DIFF. OF TURB. STAGE (N/M**2)	EFFICIENCY OF TURB. STAGE	PRESS AT EXIT OF TURB. STAGE (N/M**2)
5.07E+04	1.01E+07	0.85	2.533E+08	944.4	1.01E+07	0.85	1.01E+06

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (W/(KG/S))	AVAILABLE WORK (W/(KG/S))	HEAT TRANSFERRED (MEG-W/(KG/S))
0.270	3.190E+06	1.910E+07	12.700

	TEMPERATURE (DEG. K)	PRESSURE (N/M**2)	DENSITY (KG/M**3)	ENTHALPY (J/KG)	ENTROPY (J/(KG-K))
STORAGE TANK	18.1	5.07E+04	7.310E+01	-2.76E+05	7.01E+03
COMPRESSOR EXIT	107.0	2.53E+08	1.060E+02	2.91E+06	1.54E+04
HEAT EXCHANGER EXIT	944.0	2.53E+08	4.390E+01	1.56E+07	4.91E+04
TURBINE EXIT	263.0	1.01E+06	9.300E-01	3.64E+06	5.33E+04

STORAGE PRESSURE (N/M**2)	PRESS. DIFF. OF COMP. STAGE (N/M**2)	EFFICIENCY OF COMP. STAGE	COMPRESSOR PRESSURE (N/M**2)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS. DIFF. OF TURB. STAGE (N/M**2)	EFFICIENCY OF TURB. STAGE	PRESS AT EXIT OF TURB. STAGE (N/M**2)
5.07E+04	1.01E+07	0.85	3.040E+08	944.4	1.01E+07	0.85	1.01E+06

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (W/(KG/S))	AVAILABLE WORK (W/(KG/S))	HEAT TRANSFERRED (MEG-W/(KG/S))
0.300	3.740E+06	1.790E+07	12.500

	TEMPERATURE (DEG. K)	PRESSURE (N/M**2)	DENSITY (KG/M**3)	ENTHALPY (J/KG)	ENTROPY (J/(KG-K))
STORAGE TANK	18.1	5.07E+04	7.310E+01	-2.76E+05	7.01E+03
COMPRESSOR EXIT	118.0	3.04E+08	1.090E+02	3.47E+06	1.61E+04
HEAT EXCHANGER EXIT	944.0	3.04E+08	4.980E+01	1.59E+07	4.83E+04
TURBINE EXIT	255.0	1.01E+06	9.600E-01	3.53E+06	5.29E+04

STORAGE PRESSURE (N/M**2)	PRESS. DIFF. OF COMP. STAGE (N/M**2)	EFFICIENCY OF COMP. STAGE	COMPRESSOR PRESSURE (N/M**2)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS. DIFF. OF TURB. STAGE (N/M**2)	EFFICIENCY OF TURB. STAGE	PRESS AT EXIT OF TURB. STAGE (N/M**2)
5.07E+04	1.01E+07	0.85	3.546E+08	944.4	1.01E+07	0.85	1.01E+06

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (W/(KG/S))	AVAILABLE WORK (W/(KG/S))	HEAT TRANSFERRED (MEG-W/(KG/S))
0.330	4.280E+06	1.690E+07	12.300

	TEMPERATURE (DEG. K)	PRESSURE (N/M**2)	DENSITY (KG/M**3)	ENTHALPY (J/KG)	ENTROPY (J/(KG-K))
STORAGE TANK	18.1	5.07E+04	7.310E+01	-2.76E+05	7.01E+03
COMPRESSOR EXIT	128.0	3.55E+08	1.120E+02	4.01E+06	1.68E+04
HEAT EXCHANGER EXIT	944.0	3.55E+08	5.520E+01	1.63E+07	4.76E+04
TURBINE EXIT	247.0	1.01E+06	9.900E-01	3.41E+06	5.24E+04

STORAGE PRESSURE (N/M**2)	PRESS. DIFF. OF COMP. STAGE (N/M**2)	EFFICIENCY OF COMP. STAGE	COMPRESSOR PRESSURE (N/M**2)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS. DIFF. OF TURB. STAGE (N/M**2)	EFFICIENCY OF TURB. STAGE	PRESS AT EXIT OF TURB. STAGE (N/M**2)
5.07E+04	1.01E+07	0.85	4.053E+08	944.4	1.01E+07	0.85	1.01E+06

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (W/(KG/S))	AVAILABLE WORK (W/(KG/S))	HEAT TRANSFERRED (MEG-W/(KG/S))
0.360	4.810E+06	1.590E+07	12.100

	TEMPERATURE (DEG. K)	PRESSURE (N/M**2)	DENSITY (KG/M**3)	ENTHALPY (J/KG)	ENTROPY (J/(KG-K))
STORAGE TANK	18.1	5.07E+04	7.310E+01	-2.76E+05	7.01E+03
COMPRESSOR EXIT	138.0	4.05E+08	1.140E+02	4.54E+06	1.74E+04
HEAT EXCHANGER EXIT	944.0	4.05E+08	6.010E+01	1.66E+07	4.70E+04
TURBINE EXIT	238.0	1.01E+06	1.020E+00	3.27E+06	5.18E+04

TABLE III. - Continued. ADIABATIC TURBINE CYCLE

(a) Continued. SI units

STORAGE PRESSURE (N/M**2)	PRESS. DIFF. OF COMP. STAGE (N/M**2)	EFFICIENCY OF COMP. STAGE	COMPRESSOR PRESSURE (N/M**2)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS. DIFF. OF TURB. STAGE (N/M**2)	EFFICIENCY OF TURB. STAGE	PRESS AT EXIT OF TURB. STAGE (N/M**2)
5.07E+04	1.01E+07	0.85	4.560E+08	944.4	1.01E+07	0.85	1.01E+06

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (W/(KG/S))	AVAILABLE WORK (W/(KG/S))	HEAT TRANSFERRED (MEG-W/(KG/S))
0.390	5.330E+06	1.510E+07	11.900

	TEMPERATURE (DEG. K)	PRESSURE (N/M**2)	DENSITY (KG/M**3)	ENTHALPY (J/KG)	ENTROPY (J/(KG-K))
STORAGE TANK	18.1	5.07E+04	7.310E+01	-2.76E+05	7.01E+03
COMPRESSOR EXIT	147.0	4.56E+08	1.160E+02	5.05E+06	1.79E+04
HEAT EXCHANGER EXIT	944.0	4.56E+08	6.460E+01	1.69E+07	4.65E+04
TURBINE EXIT	235.0	1.01E+06	1.040E+00	3.22E+06	5.16E+04

STORAGE PRESSURE (N/M**2)	PRESS. DIFF. OF COMP. STAGE (N/M**2)	EFFICIENCY OF COMP. STAGE	COMPRESSOR PRESSURE (N/M**2)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS. DIFF. OF TURB. STAGE (N/M**2)	EFFICIENCY OF TURB. STAGE	PRESS AT EXIT OF TURB. STAGE (N/M**2)
5.07E+04	1.01E+07	0.85	5.066E+08	944.4	1.01E+07	0.85	1.01E+06

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (W/(KG/S))	AVAILABLE WORK (W/(KG/S))	HEAT TRANSFERRED (MEG-W/(KG/S))
0.410	5.840E+06	1.440E+07	11.700

	TEMPERATURE (DEG. K)	PRESSURE (N/M**2)	DENSITY (KG/M**3)	ENTHALPY (J/KG)	ENTROPY (J/(KG-K))
STORAGE TANK	18.1	5.07E+04	7.310E+01	-2.76E+05	7.01E+03
COMPRESSOR EXIT	156.0	5.07E+08	1.180E+02	5.56E+06	1.84E+04
HEAT EXCHANGER EXIT	944.0	5.07E+08	6.870E+01	1.73E+07	4.61E+04
TURBINE EXIT	230.0	1.01E+06	1.060E+00	3.14E+06	5.13E+04

STORAGE PRESSURE (N/M**2)	PRESS. DIFF. OF COMP. STAGE (N/M**2)	EFFICIENCY OF COMP. STAGE	COMPRESSOR PRESSURE (N/M**2)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS. DIFF. OF TURB. STAGE (N/M**2)	EFFICIENCY OF TURB. STAGE	PRESS AT EXIT OF TURB. STAGE (N/M**2)
5.07E+04	1.01E+07	0.85	5.066E+07	1111.0	1.01E+07	0.85	1.01E+06

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (W/(KG/S))	AVAILABLE WORK (W/(KG/S))	HEAT TRANSFERRED (MEG-W/(KG/S))
0.071	7.270E+05	3.690E+07	16.100

	TEMPERATURE (DEG. K)	PRESSURE (N/M**2)	DENSITY (KG/M**3)	ENTHALPY (J/KG)	ENTROPY (J/(KG-K))
STORAGE TANK	18.1	5.07E+04	7.310E+01	-2.76E+05	7.01E+03
COMPRESSOR EXIT	43.3	5.07E+07	8.650E+01	4.51E+05	1.04E+04
HEAT EXCHANGER EXIT	1110.0	5.07E+07	1.020E+01	1.66E+07	5.82E+04
TURBINE EXIT	451.0	1.01E+06	5.400E-01	6.41E+06	6.12E+04

STORAGE PRESSURE (N/M**2)	PRESS. DIFF. OF COMP. STAGE (N/M**2)	EFFICIENCY OF COMP. STAGE	COMPRESSOR PRESSURE (N/M**2)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS. DIFF. OF TURB. STAGE (N/M**2)	EFFICIENCY OF TURB. STAGE	PRESS AT EXIT OF TURB. STAGE (N/M**2)
5.07E+04	1.01E+07	0.85	1.013E+08	1111.0	1.01E+07	0.85	1.01E+06

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (W/(KG/S))	AVAILABLE WORK (W/(KG/S))	HEAT TRANSFERRED (MEG-W/(KG/S))
0.120	1.390E+06	3.200E+07	15.900

	TEMPERATURE (DEG. K)	PRESSURE (N/M**2)	DENSITY (KG/M**3)	ENTHALPY (J/KG)	ENTROPY (J/(KG-K))
STORAGE TANK	18.1	5.07E+04	7.310E+01	-2.76E+05	7.01E+03
COMPRESSOR EXIT	64.3	1.01E+08	9.280E+01	1.11E+06	1.22E+04
HEAT EXCHANGER EXIT	1110.0	1.01E+08	1.890E+01	1.70E+07	5.53E+04
TURBINE EXIT	383.0	1.01E+06	6.400E-01	5.43E+06	5.89E+04

TABLE III. - Continued. ADIABATIC TURBINE CYCLE

(a) Continued. SI units

STORAGE PRESSURE (N/M**2)	PRESS. DIFF. OF COMP. STAGE (N/M**2)	EFFICIENCY OF COMP. STAGE	COMPRESSOR PRESSURE (N/M**2)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS. DIFF. OF TURB. STAGE (N/M**2)	EFFICIENCY OF TURB. STAGE	PRESS AT EXIT OF TURB. STAGE (N/M**2)
5.07E+04	1.01E+07	0.85	1.520E+08	1111.0	1.01E+07	0.85	1.01E+06

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (W/(KG/S))	AVAILABLE WORK (W/(KG/S))	HEAT TRANSFERRED (MEG-W/(KG/S))
0.160	2.010E+06	2.900E+07	15.600

	TEMPERATURE (DEG. K)	PRESSURE (N/M**2)	DENSITY (KG/M**3)	ENTHALPY (J/KG)	ENTROPY (J/(KG-K))
STORAGE TANK	18.1	5.07E+04	7.310E+01	-2.76E+05	7.01E+03
COMPRESSOR EXIT	80.7	1.52E+08	9.790E+01	1.74E+06	1.35E+04
HEAT EXCHANGER EXIT	1110.0	1.52E+08	2.650E+01	1.74E+07	5.37E+04
TURBINE EXIT	350.0	1.01E+06	7.000E-01	4.94E+06	5.75E+04

STORAGE PRESSURE (N/M**2)	PRESS. DIFF. OF COMP. STAGE (N/M**2)	EFFICIENCY OF COMP. STAGE	COMPRESSOR PRESSURE (N/M**2)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS. DIFF. OF TURB. STAGE (N/M**2)	EFFICIENCY OF TURB. STAGE	PRESS AT EXIT OF TURB. STAGE (N/M**2)
5.07E+04	1.01E+07	0.85	2.026E+08	1111.0	1.01E+07	0.85	1.01E+06

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (W/(KG/S))	AVAILABLE WORK (W/(KG/S))	HEAT TRANSFERRED (MEG-W/(KG/S))
0.200	2.610E+06	2.670E+07	15.400

	TEMPERATURE (DEG. K)	PRESSURE (N/M**2)	DENSITY (KG/M**3)	ENTHALPY (J/KG)	ENTROPY (J/(KG-K))
STORAGE TANK	18.1	5.07E+04	7.310E+01	-2.76E+05	7.01E+03
COMPRESSOR EXIT	94.5	2.03E+08	1.020E+02	2.33E+06	1.45E+04
HEAT EXCHANGER EXIT	1110.0	2.03E+08	3.320E+01	1.78E+07	5.25E+04
TURBINE EXIT	328.0	1.01E+06	7.400E-01	4.62E+06	5.66E+04

STORAGE PRESSURE (N/M**2)	PRESS. DIFF. OF COMP. STAGE (N/M**2)	EFFICIENCY OF COMP. STAGE	COMPRESSOR PRESSURE (N/M**2)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS. DIFF. OF TURB. STAGE (N/M**2)	EFFICIENCY OF TURB. STAGE	PRESS AT EXIT OF TURB. STAGE (N/M**2)
5.07E+04	1.01E+07	0.85	2.533E+08	1111.0	1.01E+07	0.85	1.01E+06

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (W/(KG/S))	AVAILABLE WORK (W/(KG/S))	HEAT TRANSFERRED (MEG-W/(KG/S))
0.230	3.190E+06	2.500E+07	15.200

	TEMPERATURE (DEG. K)	PRESSURE (N/M**2)	DENSITY (KG/M**3)	ENTHALPY (J/KG)	ENTROPY (J/(KG-K))
STORAGE TANK	18.1	5.07E+04	7.310E+01	-2.76E+05	7.01E+03
COMPRESSOR EXIT	107.0	2.53E+08	1.060E+02	2.91E+06	1.54E+04
HEAT EXCHANGER EXIT	1110.0	2.53E+08	3.930E+01	1.81E+07	5.15E+04
TURBINE EXIT	312.0	1.01E+06	7.800E-01	4.39E+06	5.59E+04

STORAGE PRESSURE (N/M**2)	PRESS. DIFF. OF COMP. STAGE (N/M**2)	EFFICIENCY OF COMP. STAGE	COMPRESSOR PRESSURE (N/M**2)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS. DIFF. OF TURB. STAGE (N/M**2)	EFFICIENCY OF TURB. STAGE	PRESS AT EXIT OF TURB. STAGE (N/M**2)
5.07E+04	1.01E+07	0.85	3.040E+08	1111.0	1.01E+07	0.85	1.01E+06

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (W/(KG/S))	AVAILABLE WORK (W/(KG/S))	HEAT TRANSFERRED (MEG-W/(KG/S))
0.260	3.740E+06	2.350E+07	15.000

	TEMPERATURE (DEG. K)	PRESSURE (N/M**2)	DENSITY (KG/M**3)	ENTHALPY (J/KG)	ENTROPY (J/(KG-K))
STORAGE TANK	18.1	5.07E+04	7.310E+01	-2.76E+05	7.01E+03
COMPRESSOR EXIT	118.0	3.04E+08	1.090E+02	3.47E+06	1.61E+04
HEAT EXCHANGER EXIT	1110.0	3.04E+08	4.490E+01	1.85E+07	5.08E+04
TURBINE EXIT	300.0	1.01E+06	8.100E-01	4.21E+06	5.53E+04

TABLE III. - Continued. ADIABATIC TURBINE CYCLE

(a) Concluded. SI units

STORAGE PRESSURE (N/M**2)	PRESS. DIFF. OF COMP. STAGE (N/M**2)	EFFICIENCY OF COMP. STAGE	COMPRESSOR PRESSURE (N/M**2)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS. DIFF. OF TURB. STAGE (N/M**2)	EFFICIENCY OF TURB. STAGE	PRESS AT EXIT OF TURB. STAGE (N/M**2)
5.07E+04	1.01E+07	0.85	3.546E+08	1111.0	1.01E+07	0.85	1.01E+06

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (W/(KG/S))	AVAILABLE WORK (W/(KG/S))	HEAT TRANSFERRED (MEG-W/(KG/S))
0.290	4.280E+06	2.220E+07	14.800

	TEMPERATURE (DEG. K)	PRESSURE (N/M**2)	DENSITY (KG/M**3)	ENTHALPY (J/KG)	ENTROPY (J/(KG-K))
STORAGE TANK	18.1	5.07E+04	7.310E+01	-2.76E+05	7.01E+03
COMPRESSOR EXIT	128.0	3.55E+08	1.120E+02	4.01E+06	1.68E+04
HEAT EXCHANGER EXIT	1110.0	3.55E+08	4.990E+01	1.88E+07	5.01E+04
TURBINE EXIT	291.0	1.01E+06	8.400E-01	4.06E+06	5.48E+04

STORAGE PRESSURE (N/M**2)	PRESS. DIFF. OF COMP. STAGE (N/M**2)	EFFICIENCY OF COMP. STAGE	COMPRESSOR PRESSURE (N/M**2)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS. DIFF. OF TURB. STAGE (N/M**2)	EFFICIENCY OF TURB. STAGE	PRESS AT EXIT OF TURB. STAGE (N/M**2)
5.07E+04	1.01E+07	0.85	4.053E+08	1111.0	1.01E+07	0.85	1.01E+06

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (W/(KG/S))	AVAILABLE WORK (W/(KG/S))	HEAT TRANSFERRED (MEG-W/(KG/S))
0.320	4.810E+06	2.110E+07	14.600

	TEMPERATURE (DEG. K)	PRESSURE (N/M**2)	DENSITY (KG/M**3)	ENTHALPY (J/KG)	ENTROPY (J/(KG-K))
STORAGE TANK	18.1	5.07E+04	7.310E+01	-2.76E+05	7.01E+03
COMPRESSOR EXIT	138.0	4.05E+08	1.140E+02	4.54E+06	1.74E+04
HEAT EXCHANGER EXIT	1110.0	4.05E+08	5.460E+01	1.92E+07	4.96E+04
TURBINE EXIT	282.0	1.01E+06	8.600E-01	3.94E+06	5.44E+04

STORAGE PRESSURE (N/M**2)	PRESS. DIFF. OF COMP. STAGE (N/M**2)	EFFICIENCY OF COMP. STAGE	COMPRESSOR PRESSURE (N/M**2)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS. DIFF. OF TURB. STAGE (N/M**2)	EFFICIENCY OF TURB. STAGE	PRESS AT EXIT OF TURB. STAGE (N/M**2)
5.07E+04	1.01E+07	0.85	4.560E+08	1111.0	1.01E+07	0.85	1.01E+06

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (W/(KG/S))	AVAILABLE WORK (W/(KG/S))	HEAT TRANSFERRED (MEG-W/(KG/S))
0.340	5.330E+06	2.020E+07	14.500

	TEMPERATURE (DEG. K)	PRESSURE (N/M**2)	DENSITY (KG/M**3)	ENTHALPY (J/KG)	ENTROPY (J/(KG-K))
STORAGE TANK	18.1	5.07E+04	7.310E+01	-2.76E+05	7.01E+03
COMPRESSOR EXIT	147.0	4.56E+08	1.160E+02	5.05E+06	1.79E+04
HEAT EXCHANGER EXIT	1110.0	4.56E+08	5.890E+01	1.95E+07	4.91E+04
TURBINE EXIT	273.0	1.01E+06	9.000E-01	3.79E+06	5.38E+04

STORAGE PRESSURE (N/M**2)	PRESS. DIFF. OF COMP. STAGE (N/M**2)	EFFICIENCY OF COMP. STAGE	COMPRESSOR PRESSURE (N/M**2)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS. DIFF. OF TURB. STAGE (N/M**2)	EFFICIENCY OF TURB. STAGE	PRESS AT EXIT OF TURB. STAGE (N/M**2)
5.07E+04	1.01E+07	0.85	5.066E+08	1111.0	1.01E+07	0.85	1.01E+06

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (W/(KG/S))	AVAILABLE WORK (W/(KG/S))	HEAT TRANSFERRED (MEG-W/(KG/S))
0.360	5.840E+06	1.930E+07	14.300

	TEMPERATURE (DEG. K)	PRESSURE (N/M**2)	DENSITY (KG/M**3)	ENTHALPY (J/KG)	ENTROPY (J/(KG-K))
STORAGE TANK	18.1	5.07E+04	7.310E+01	-2.76E+05	7.01E+03
COMPRESSOR EXIT	156.0	5.07E+08	1.180E+02	5.56E+06	1.84E+04
HEAT EXCHANGER EXIT	1110.0	5.07E+08	6.300E+01	1.98E+07	4.86E+04
TURBINE EXIT	270.0	1.01E+06	9.000E-01	3.75E+06	5.37E+04

TABLE III. - Continued. ADIABATIC TURBINE CYCLE

(b) U.S. customary units

STORAGE PRESSURE (ATM)	PRESS. DIFF. OF COMP. STAGE (ATM)	EFFICIENCY OF COMP. STAGE	COMPRESSOR PRESSURE (ATM)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS. DIFF. OF TURB. STAGE (ATM)	EFFICIENCY OF TURB. STAGE	PRESS AT EXIT OF TURB. STAGE (ATM)
0.50	100.0	0.85	500.0	944.4	100.0	0.85	10.00

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (HP/(LB/S))	AVAILABLE WORK (HP/(LB/S))	HEAT TRANSFERRED (MEG-W/(LB/S))
0.084	442.0	17700.0	6.170

	TEMPERATURE (DEG. K)	PRESSURE (ATM)	DENSITY (G/CM**3)	ENTHALPY (CAL/G)	ENTROPY (CAL/(G-K))
STORAGE TANK	18.1	0.50	7.310E-02	-65.9	1.68
COMPRESSOR EXIT	43.3	500.00	8.650E-02	108.0	2.49
HEAT EXCHANGER EXIT	944.0	500.00	1.180E-02	3360.0	13.30
TURBINE EXIT	381.0	10.00	6.410E-04	1290.0	14.10

STORAGE PRESSURE (ATM)	PRESS. DIFF. OF COMP. STAGE (ATM)	EFFICIENCY OF COMP. STAGE	COMPRESSOR PRESSURE (ATM)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS. DIFF. OF TURB. STAGE (ATM)	EFFICIENCY OF TURB. STAGE	PRESS AT EXIT OF TURB. STAGE (ATM)
0.50	100.0	0.85	1000.0	944.4	100.0	0.85	10.00

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (HP/(LB/S))	AVAILABLE WORK (HP/(LB/S))	HEAT TRANSFERRED (MEG-W/(LB/S))
0.140	844.0	15200.0	6.060

	TEMPERATURE (DEG. K)	PRESSURE (ATM)	DENSITY (G/CM**3)	ENTHALPY (CAL/G)	ENTROPY (CAL/(G-K))
STORAGE TANK	18.1	0.50	7.310E-02	-65.9	1.68
COMPRESSOR EXIT	64.3	1000.00	9.280E-02	266.0	2.92
HEAT EXCHANGER EXIT	944.0	1000.00	2.160E-02	3460.0	12.60
TURBINE EXIT	321.0	10.00	7.600E-04	1080.0	13.50

STORAGE PRESSURE (ATM)	PRESS. DIFF. OF COMP. STAGE (ATM)	EFFICIENCY OF COMP. STAGE	COMPRESSOR PRESSURE (ATM)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS. DIFF. OF TURB. STAGE (ATM)	EFFICIENCY OF TURB. STAGE	PRESS AT EXIT OF TURB. STAGE (ATM)
0.50	100.0	0.85	1500.0	944.4	100.0	0.85	10.00

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (HP/(LB/S))	AVAILABLE WORK (HP/(LB/S))	HEAT TRANSFERRED (MEG-W/(LB/S))
0.190	1220.0	13700.0	5.950

	TEMPERATURE (DEG. K)	PRESSURE (ATM)	DENSITY (G/CM**3)	ENTHALPY (CAL/G)	ENTROPY (CAL/(G-K))
STORAGE TANK	18.1	0.50	7.310E-02	-65.9	1.68
COMPRESSOR EXIT	80.7	1500.00	9.790E-02	415.0	3.23
HEAT EXCHANGER EXIT	944.0	1500.00	3.000E-02	3550.0	12.20
TURBINE EXIT	297.0	10.00	8.230E-04	992.0	13.20

STORAGE PRESSURE (ATM)	PRESS. DIFF. OF COMP. STAGE (ATM)	EFFICIENCY OF COMP. STAGE	COMPRESSOR PRESSURE (ATM)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS. DIFF. OF TURB. STAGE (ATM)	EFFICIENCY OF TURB. STAGE	PRESS AT EXIT OF TURB. STAGE (ATM)
0.50	100.0	0.85	2000.0	944.4	100.0	0.85	10.00

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (HP/(LB/S))	AVAILABLE WORK (HP/(LB/S))	HEAT TRANSFERRED (MEG-W/(LB/S))
0.230	1590.0	12500.0	5.850

	TEMPERATURE (DEG. K)	PRESSURE (ATM)	DENSITY (G/CM**3)	ENTHALPY (CAL/G)	ENTROPY (CAL/(G-K))
STORAGE TANK	18.1	0.50	7.310E-02	-65.9	1.68
COMPRESSOR EXIT	94.5	2000.00	1.000E-01	557.0	3.47
HEAT EXCHANGER EXIT	944.0	2000.00	3.740E-02	3640.0	11.90
TURBINE EXIT	278.0	10.00	8.770E-04	928.0	12.90

TABLE III. - Continued. ADIABATIC TURBINE CYCLE

(b) Continued. U.S. customary units

STORAGE PRESSURE (ATM)	PRESS. DIFF. OF COMP. STAGE (ATM)	EFFICIENCY OF COMP. STAGE	COMPRESSOR PRESSURE (ATM)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS. DIFF. OF TURB. STAGE (ATM)	EFFICIENCY OF TURB. STAGE	PRESS AT EXIT OF TURB. STAGE (ATM)
0.50	100.0	0.85	2500.0	944.4	100.0	0.85	10.00

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (HP/(LB/S))	AVAILABLE WORK (HP/(LB/S))	HEAT TRANSFERRED (MEG-W/(LB/S))
0.270	1940.0	11600.0	5.750

	TEMPERATURE (DEG. K)	PRESSURE (ATM)	DENSITY (G/CM**3)	ENTHALPY (CAL/G)	ENTROPY (CAL/(G-K))
STORAGE TANK	18.1	0.50	7.310E-02	-65.9	1.68
COMPRESSOR EXIT	107.0	2500.00	1.100E-01	696.0	3.68
HEAT EXCHANGER EXIT	944.0	2500.00	4.390E-02	3720.0	11.70
TURBINE EXIT	263.0	10.00	9.300E-04	870.0	12.70

STORAGE PRESSURE (ATM)	PRESS. DIFF. OF COMP. STAGE (ATM)	EFFICIENCY OF COMP. STAGE	COMPRESSOR PRESSURE (ATM)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS. DIFF. OF TURB. STAGE (ATM)	EFFICIENCY OF TURB. STAGE	PRESS AT EXIT OF TURB. STAGE (ATM)
0.50	100.0	0.85	3000.0	944.4	100.0	0.85	10.00

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (HP/(LB/S))	AVAILABLE WORK (HP/(LB/S))	HEAT TRANSFERRED (MEG-W/(LB/S))
0.300	2280.0	10900.0	5.660

	TEMPERATURE (DEG. K)	PRESSURE (ATM)	DENSITY (G/CM**3)	ENTHALPY (CAL/G)	ENTROPY (CAL/(G-K))
STORAGE TANK	18.1	0.50	7.310E-02	-65.9	1.68
COMPRESSOR EXIT	118.0	3000.00	1.100E-01	828.0	3.85
HEAT EXCHANGER EXIT	944.0	3000.00	4.980E-02	3810.0	11.50
TURBINE EXIT	255.0	10.00	9.550E-04	845.0	12.60

STORAGE PRESSURE (ATM)	PRESS. DIFF. OF COMP. STAGE (ATM)	EFFICIENCY OF COMP. STAGE	COMPRESSOR PRESSURE (ATM)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS. DIFF. OF TURB. STAGE (ATM)	EFFICIENCY OF TURB. STAGE	PRESS AT EXIT OF TURB. STAGE (ATM)
0.50	100.0	0.85	350C.0	944.4	100.0	0.85	10.CC

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (HP/(LB/S))	AVAILABLE WORK (HP/(LB/S))	HEAT TRANSFERRED (MEG-W/(LB/S))
0.330	2600.0	10300.0	5.570

	TEMPERATURE (DEG. K)	PRESSURE (ATM)	DENSITY (G/CM**3)	ENTHALPY (CAL/G)	ENTROPY (CAL/(G-K))
STORAGE TANK	18.1	0.50	7.310E-02	-65.9	1.68
COMPRESSOR EXIT	128.0	3500.00	1.100E-01	958.0	4.01
HEAT EXCHANGER EXIT	944.0	3500.00	5.520E-02	3890.0	11.40
TURBINE EXIT	247.0	10.00	9.860E-04	815.0	12.50

STORAGE PRESSURE (ATM)	PRESS. DIFF. OF COMP. STAGE (ATM)	EFFICIENCY OF COMP. STAGE	COMPRESSOR PRESSURE (ATM)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS. DIFF. OF TURB. STAGE (ATM)	EFFICIENCY OF TURB. STAGE	PRESS AT EXIT OF TURB. STAGE (ATM)
0.50	100.0	0.85	4000.0	944.4	100.0	0.85	10.CC

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (HP/(LB/S))	AVAILABLE WORK (HP/(LB/S))	HEAT TRANSFERRED (MEG-W/(LB/S))
0.360	2930.0	9700.0	5.480

	TEMPERATURE (DEG. K)	PRESSURE (ATM)	DENSITY (G/CM**3)	ENTHALPY (CAL/G)	ENTROPY (CAL/(G-K))
STORAGE TANK	18.1	0.50	7.310E-02	-65.9	1.68
COMPRESSOR EXIT	138.0	4000.00	1.100E-01	1C80.0	4.15
HEAT EXCHANGER EXIT	944.0	4000.00	6.010E-02	3970.0	11.20
TURBINE EXIT	238.0	10.00	1.020E-03	781.0	12.40

TABLE III. - Continued. ADIABATIC TURBINE CYCLE

(b) Continued. U. S. customary units

STORAGE PRESSURE (ATM)	PRESS. DIFF. OF COMP. STAGE (ATM)	EFFICIENCY OF COMP. STAGE	COMPRESSOR PRESSURE (ATM)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS. DIFF. OF TURB. STAGE (ATM)	EFFICIENCY OF TURB. STAGE	PRESS AT EXIT OF TURB. STAGE (ATM)
0.50	100.0	0.85	4500.0	944.4	100.0	0.85	10.00

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (HP/(LB/S))	AVAILABLE WORK (HP/(LB/S))	HEAT TRANSFERRED (MEG-W/(LB/S))
0.390	3240.0	9210.0	5.390

	TEMPERATURE (DEG. K)	PRESSURE (ATM)	DENSITY (G/CM**3)	ENTHALPY (CAL/G)	ENTROPY (CAL/(G-K))
STORAGE TANK	18.1	0.50	7.310E-02	-65.9	1.68
COMPRESSOR EXIT	147.0	4500.00	1.200E-01	1210.0	4.28
HEAT EXCHANGER EXIT	944.0	4500.00	6.460E-02	4050.0	11.10
TURBINE EXIT	235.0	10.00	1.040E-03	770.0	12.30

STORAGE PRESSURE (ATM)	PRESS. DIFF. OF COMP. STAGE (ATM)	EFFICIENCY OF COMP. STAGE	COMPRESSOR PRESSURE (ATM)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS. DIFF. OF TURB. STAGE (ATM)	EFFICIENCY OF TURB. STAGE	PRESS AT EXIT OF TURB. STAGE (ATM)
0.50	100.0	0.85	5000.0	944.4	100.0	0.85	10.00

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (HP/(LB/S))	AVAILABLE WORK (HP/(LB/S))	HEAT TRANSFERRED (MEG-W/(LB/S))
0.410	3550.0	8770.0	5.310

	TEMPERATURE (DEG. K)	PRESSURE (ATM)	DENSITY (G/CM**3)	ENTHALPY (CAL/G)	ENTROPY (CAL/(G-K))
STORAGE TANK	18.1	0.50	7.310E-02	-65.9	1.68
COMPRESSOR EXIT	156.0	5000.00	1.200E-01	1330.0	4.40
HEAT EXCHANGER EXIT	944.0	5000.00	6.870E-02	4130.0	11.00
TURBINE EXIT	230.0	10.00	1.060E-03	751.0	12.30

STORAGE PRESSURE (ATM)	PRESS. DIFF. OF COMP. STAGE (ATM)	EFFICIENCY OF COMP. STAGE	COMPRESSOR PRESSURE (ATM)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS. DIFF. OF TURB. STAGE (ATM)	EFFICIENCY OF TURB. STAGE	PRESS AT EXIT OF TURB. STAGE (ATM)
0.50	100.0	0.85	500.0	1111.0	100.0	0.85	10.CC

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (HP/(LB/S))	AVAILABLE WORK (HP/(LB/S))	HEAT TRANSFERRED (MEG-W/(LB/S))
0.071	442.0	22500.0	7.310

	TEMPERATURE (DEG. K)	PRESSURE (ATM)	DENSITY (G/CM**3)	ENTHALPY (CAL/G)	ENTROPY (CAL/(G-K))
STORAGE TANK	18.1	0.50	7.310E-02	-65.9	1.68
COMPRESSOR EXIT	43.3	500.00	8.650E-02	108.0	2.49
HEAT EXCHANGER EXIT	1110.0	500.0C	1.020E-02	3560.0	13.90
TURBINE EXIT	451.0	10.00	5.420E-04	1530.0	14.6C

STORAGE PRESSURE (ATM)	PRESS. DIFF. OF COMP. STAGE (ATM)	EFFICIENCY OF COMP. STAGE	COMPRESSOR PRESSURE (ATM)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS. DIFF. OF TURB. STAGE (ATM)	EFFICIENCY OF TURB. STAGE	PRESS AT EXIT OF TURB. STAGE (ATM)
0.50	100.0	0.85	1000.0	1111.0	100.0	0.85	10.CC

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (HP/(LB/S))	AVAILABLE WORK (HP/(LB/S))	HEAT TRANSFERRED (MEG-W/(LB/S))
0.120	844.0	19500.0	7.2CC

	TEMPERATURE (DEG. K)	PRESSURE (ATM)	DENSITY (G/CM**3)	ENTHALPY (CAL/G)	ENTROPY (CAL/(G-K))
STORAGE TANK	18.1	0.50	7.310E-02	-65.9	1.68
COMPRESSOR EXIT	64.3	1000.00	9.280E-02	266.0	2.92
HEAT EXCHANGER EXIT	1110.0	1000.00	1.890E-02	4C60.0	13.20
TURBINE EXIT	383.0	10.00	6.370E-04	1300.0	14.10

TABLE III. - Continued. ADIABATIC TURBINE CYCLE

(b) Continued. U.S. customary units

STORAGE PRESSURE (ATM)	PRESS. DIFF. OF COMP. STAGE (ATM)	EFFICIENCY OF COMP. STAGE	COMPRESSOR PRESSURE (ATM)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS. DIFF. OF TURB. STAGE (ATM)	EFFICIENCY OF TURB. STAGE	PRESS AT EXIT OF TURB. STAGE (ATM)
0.50	100.0	0.85	1500.0	1111.0	100.0	0.85	10.00

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (HP/(LB/S))	AVAILABLE WORK (HP/(LB/S))	HEAT TRANSFERRED (MEG-W/(LB/S))
0.160	1220.0	17600.0	7.090

	TEMPERATURE (DEG. K)	PRESSURE (ATM)	DENSITY (G/CM**3)	ENTHALPY (CAL/G)	ENTROPY (CAL/(G-K))
STORAGE TANK	18.1	0.50	7.310E-02	-65.9	1.68
COMPRESSOR EXIT	80.7	1500.00	9.790E-02	415.0	3.23
HEAT EXCHANGER EXIT	1110.0	1500.00	2.650E-02	4150.0	12.80
TURBINE EXIT	350.0	10.00	6.980E-04	1180.0	13.80

STORAGE PRESSURE (ATM)	PRESS. DIFF. OF COMP. STAGE (ATM)	EFFICIENCY OF COMP. STAGE	COMPRESSOR PRESSURE (ATM)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS. DIFF. OF TURB. STAGE (ATM)	EFFICIENCY OF TURB. STAGE	PRESS AT EXIT OF TURB. STAGE (ATM)
0.50	100.0	0.85	2000.0	1111.0	100.0	0.85	10.00

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (HP/(LB/S))	AVAILABLE WORK (HP/(LB/S))	HEAT TRANSFERRED (MEG-W/(LB/S))
0.200	1590.0	16300.0	7.000

	TEMPERATURE (DEG. K)	PRESSURE (ATM)	DENSITY (G/CM**3)	ENTHALPY (CAL/G)	ENTROPY (CAL/(G-K))
STORAGE TANK	18.1	0.50	7.310E-02	-65.9	1.68
COMPRESSOR EXIT	94.5	2000.00	1.000E-01	557.0	3.47
HEAT EXCHANGER EXIT	1110.0	2000.00	3.320E-02	4240.0	12.50
TURBINE EXIT	328.0	10.00	7.450E-04	1100.0	13.50

STORAGE PRESSURE (ATM)	PRESS. DIFF. OF COMP. STAGE (ATM)	EFFICIENCY OF COMP. STAGE	COMPRESSOR PRESSURE (ATM)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS. DIFF. OF TURB. STAGE (ATM)	EFFICIENCY OF TURB. STAGE	PRESS AT EXIT OF TURB. STAGE (ATM)
0.50	100.0	0.85	2500.0	1111.0	100.0	0.85	10.CC

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (HP/(LB/S))	AVAILABLE WORK (HP/(LB/S))	HEAT TRANSFERRED (MEG-W/(LB/S))
0.230	1940.0	15200.0	6.900

	TEMPERATURE (DEG. K)	PRESSURE (ATM)	DENSITY (G/CM**3)	ENTHALPY (CAL/G)	ENTROPY (CAL/(G-K))
STORAGE TANK	18.1	0.50	7.310E-02	-65.9	1.68
COMPRESSOR EXIT	107.0	2500.00	1.100E-01	696.0	3.68
HEAT EXCHANGER EXIT	1110.0	2500.00	3.930E-02	4330.0	12.3C
TURBINE EXIT	312.0	10.00	7.820E-04	1C50.0	13.40

STORAGE PRESSURE (ATM)	PRESS. DIFF. OF COMP. STAGE (ATM)	EFFICIENCY OF COMP. STAGE	COMPRESSOR PRESSURE (ATM)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS. DIFF. OF TURB. STAGE (ATM)	EFFICIENCY OF TURB. STAGE	PRESS AT EXIT OF TURB. STAGE (ATM)
0.50	100.0	0.85	3000.0	1111.0	100.0	0.85	10.CC

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (HP/(LB/S))	AVAILABLE WORK (HP/(LB/S))	HEAT TRANSFERRED (MEG-W/(LB/S))
0.260	2280.0	14300.0	6.81C

	TEMPERATURE (DEG. K)	PRESSURE (ATM)	DENSITY (G/CM**3)	ENTHALPY (CAL/G)	ENTROPY (CAL/(G-K))
STORAGE TANK	18.1	0.50	7.310E-02	-65.9	1.68
COMPRESSOR EXIT	118.0	3000.00	1.100E-01	828.0	3.85
HEAT EXCHANGER EXIT	1110.0	3000.00	4.490E-02	4420.0	12.1C
TURBINE EXIT	300.0	10.00	8.130E-04	1C10.0	13.20

TABLE III. - Concluded. ADIABATIC TURBINE CYCLE

(b) Concluded. U. S. customary units

STORAGE PRESSURE (ATM)	PRESS. DIFF. OF COMP. STAGE (ATM)	EFFICIENCY OF COMP. STAGE	COMPRESSOR PRESSURE (ATM)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS. DIFF. OF TURB. STAGE (ATM)	EFFICIENCY OF TURB. STAGE	PRESS AT EXIT OF TURB. STAGE (ATM)
0.50	100.0	0.85	3500.0	1111.0	100.0	0.85	10.00

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (HP/(LB/S))	AVAILABLE WORK (HP/(LB/S))	HEAT TRANSFERRED (MEG-W/(LB/S))
0.290	2600.0	13500.0	6.720

	TEMPERATURE (DEG. K)	PRESSURE (ATM)	DENSITY (G/CM**3)	ENTHALPY (CAL/G)	ENTROPY (CAL/(G-K))
STORAGE TANK	18.1	0.50	7.310E-02	-65.9	1.68
COMPRESSOR EXIT	128.0	3500.00	1.100E-01	958.0	4.01
HEAT EXCHANGER EXIT	1110.0	3500.00	4.990E-02	4500.0	12.00
TURBINE EXIT	291.0	10.00	8.400E-04	971.0	13.10

STORAGE PRESSURE (ATM)	PRESS. DIFF. OF COMP. STAGE (ATM)	EFFICIENCY OF COMP. STAGE	COMPRESSOR PRESSURE (ATM)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS. DIFF. OF TURB. STAGE (ATM)	EFFICIENCY OF TURB. STAGE	PRESS AT EXIT OF TURB. STAGE (ATM)
0.50	100.0	0.85	4000.0	1111.0	100.0	0.85	10.00

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (HP/(LB/S))	AVAILABLE WORK (HP/(LB/S))	HEAT TRANSFERRED (MEG-W/(LB/S))
0.320	2930.0	12900.0	6.640

	TEMPERATURE (DEG. K)	PRESSURE (ATM)	DENSITY (G/CM**3)	ENTHALPY (CAL/G)	ENTROPY (CAL/(G-K))
STORAGE TANK	18.1	0.50	7.310E-02	-65.9	1.68
COMPRESSOR EXIT	138.0	4000.00	1.100E-01	1080.0	4.15
HEAT EXCHANGER EXIT	1110.0	4000.00	5.460E-02	4580.0	11.80
TURBINE EXIT	282.0	10.00	8.640E-04	942.0	13.00

STORAGE PRESSURE (ATM)	PRESS. DIFF. OF COMP. STAGE (ATM)	EFFICIENCY OF COMP. STAGE	COMPRESSOR PRESSURE (ATM)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS. DIFF. OF TURB. STAGE (ATM)	EFFICIENCY OF TURB. STAGE	PRESS AT EXIT OF TURB. STAGE (ATM)
0.50	100.0	0.85	4500.0	1111.0	100.0	0.85	10.00

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (HP/(LB/S))	AVAILABLE WORK (HP/(LB/S))	HEAT TRANSFERRED (MEG-W/(LB/S))
0.340	3240.0	12300.0	6.560

	TEMPERATURE (DEG. K)	PRESSURE (ATM)	DENSITY (G/CM**3)	ENTHALPY (CAL/G)	ENTROPY (CAL/(G-K))
STORAGE TANK	18.1	0.50	7.310E-02	-65.9	1.68
COMPRESSOR EXIT	147.0	4500.00	1.200E-01	1210.0	4.28
HEAT EXCHANGER EXIT	1110.0	4500.00	5.890E-02	4660.0	11.70
TURBINE EXIT	273.0	10.00	8.950E-04	907.0	12.90

STORAGE PRESSURE (ATM)	PRESS. DIFF. OF COMP. STAGE (ATM)	EFFICIENCY OF COMP. STAGE	COMPRESSOR PRESSURE (ATM)	HEAT EXCHANGER TEMPERATURE (DEG. K)	PRESS. DIFF. OF TURB. STAGE (ATM)	EFFICIENCY OF TURB. STAGE	PRESS AT EXIT OF TURB. STAGE (ATM)
0.50	100.0	0.85	5000.0	1111.0	100.0	0.85	10.00

RATIO OF COMPRESSOR TO TURBINE WORK	COMPRESSOR WORK (HP/(LB/S))	AVAILABLE WORK (HP/(LB/S))	HEAT TRANSFERRED (MEG-W/(LB/S))
0.360	3550.0	11700.0	6.470

	TEMPERATURE (DEG. K)	PRESSURE (ATM)	DENSITY (G/CM**3)	ENTHALPY (CAL/G)	ENTROPY (CAL/(G-K))
STORAGE TANK	18.1	0.50	7.310E-02	-65.9	1.68
COMPRESSOR EXIT	156.0	5000.00	1.200E-01	1330.0	4.40
HEAT EXCHANGER EXIT	1110.0	5000.00	6.300E-02	4740.0	11.60
TURBINE EXIT	270.0	10.00	9.050E-04	896.0	12.80

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