APPENDIX R

CONVERSION FACTORS

R-1. Volume.

1 acre foot (AF)	=	43,560 cubic feet
	=	1,233 cubic meters
	=	0.505 cfs-days (sfd) 1/
1 cubic foot	=	7.48 U.S. gallons
	=	0.0283 cubic meters
1 cubic meter	=	35.31 cubic feet
1 cfs-day (sfd)	=	1.983 AF
	=	86,400 cubic feet

R-2. Rate of Flow.

1 cubic foot per second (cfs)	=	448.83 gallons per minute (gpm)
	=	0.646 million gallons per day (mgd)
	=	1.98 AF/day
	=	724 AF/year
	=	0.0283 cubic meters per second (cms)
1 acre-foot/day (AF/day)	=	0.504 cfs
	=	0.0143 cms

R-3. Energy.

1 kilowatt-hour (kWh)	=	3,413 BTU 2/
	=	2,656,000 foot-pounds
	=	3,600,000 joules
	=	860 kg-calories

1/ the term cfs-day is sometimes called "second-foot day" (sfd).
2/ 1 BTU (British thermal unit) is the amount of energy required to raise the temperature of one pound of water one degree Farenheit.

R-4. Power.

1 kilowatt (kW)	=	1,000 watts
	=	1.341 horsepower
	=	56.88 BTU/minute
	=	737.56 ft-lbs/second
1 megawatt (MW)	=	1,000 kilowatts
1 gigawatt (gW)	=	1,000 megawatts

R-5. Energy Equivalents.

1 barrel of oil (42 gals.)	=	470 kWh @ 27% efficiency 3/
	=	520 kWh @ 30% efficiency
	=	660 kWh @ 38% efficiency 4/
1 ton of coal	=	2,500 kWh @ 37% efficiency 5/
1,000 cubic feet (mcf) of natural gas	=	59 kWh @ 27% efficiency 3/
	=	83 kWh @ 38% efficiency 4/

3/ typical efficiency for a combustion turbine
4/ typical efficiency for new oil- or gas-fired base load steam plant or combined cycle plant
5/ typical efficiency for a new base load coal-fired steam plant