

## UPPER MISSISSIPPI RIVER MAIN STEM--Continued

05267000 MISSISSIPPI RIVER NEAR ROYALTON, MN

LOCATION.--Lat 45°51'41", long 94°21'33", in lot 2, sec. 20, T. 39 N., R. 32 W., Morrison County, Hydrologic Unit 07010104, at plant of Minnesota Power Co., 4 mi northwest of Royalton, 4.5 mi downstream from Swan River, and at mile 956 upstream from Ohio River.

DRAINAGE AREA.--11,600 mi<sup>2</sup> (approximately).

PERIOD OF RECORD.--March 1924 to current year.

REMARKS.--Records fair. Discharges flow-averaged based on nearby gaging stations, furnished record from Minnesota Power Co., and measured flow. Flow partly regulated by power plants and Winnibigoshish, Leech, Pokegama, Sandy, and Gull Lakes and by Pine River Reservoir.

COOPERATION.--Furnished records collected by Minnesota Power Co. in connection with a Federal Energy Regulatory Commission project.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2030	7700	7320	4130	3760	3690	8410	7880	13300	6510	8930	9220
2	1840	7500	7600	4080	3740	3870	8740	7410	12600	6740	8500	8980
3	2000	7320	7550	4070	3720	4010	9450	7030	12600	6600	8260	8640
4	2070	6890	7500	4040	3710	3910	9600	7120	11800	6460	8310	8840
5	2240	6940	7740	4010	3700	4180	10200	7220	11100	6560	8170	9220
6	2220	6790	7700	4000	3700	4310	11300	7500	11400	6510	7790	9600
7	2450	6600	7700	3970	3700	4160	12500	8260	11900	6270	7500	9980
8	2330	6410	7500	3950	3720	4220	13500	9070	12000	6460	7080	9880
9	2620	6320	7320	3950	3700	4290	14400	9780	11200	6790	7030	10100
10	2580	6510	7170	3930	3720	4200	15100	11300	11100	6940	6980	10300
11	2820	6600	7170	3900	3730	4370	15600	13200	10800	7360	6890	10100
12	2820	6320	7120	3880	3740	4230	15200	15500	10300	7500	7410	10300
13	2760	6360	7080	3850	3750	4310	15000	18800	9690	7740	8220	10400
14	2920	6080	7220	3860	3750	4300	15300	21700	9070	8120	8460	10300
15	2910	6270	7120	3860	3760	4400	15200	24400	8790	8220	9360	10400
16	3140	6510	6980	3840	3780	4510	14400	26200	8500	9020	9780	10300
17	4280	6220	6460	3840	3800	4840	13900	27000	7840	9880	9690	9880
18	5040	6320	5600	3840	3780	5040	13900	26800	7500	10600	9880	9500
19	5750	6220	4750	3850	3760	5130	13300	25800	7270	11000	9500	9220
20	6840	6320	3810	3850	3740	5320	13100	24700	6980	11200	9500	8500
21	8310	6410	3150	3840	3700	5600	12900	23300	6600	11200	9880	8260
22	8220	6270	3500	3840	3660	5840	12500	21800	6740	11300	9780	8120
23	8740	6560	3750	3840	3630	5980	12000	20500	6740	11300	9690	7650
24	9070	6980	3970	3840	3610	6270	11400	19600	6890	11000	10100	7270
25	8930	7320	4100	3840	3590	6360	10800	18800	6980	10400	9980	6940
26	8600	7080	4220	3840	3560	6320	10400	18200	7220	10600	9690	7080
27	8500	7120	4260	3830	3560	6320	10100	17500	6980	10100	9690	7500
28	8410	7220	4270	3840	3590	6700	9260	16500	6890	9690	9400	7740
29	8080	7220	4240	3810	---	6980	8930	15800	6700	9690	8880	7930
30	7930	7320	4200	3810	---	7360	8460	14600	6790	9360	9070	8220
31	7600	---	4170	3790	---	7880	---	14200	---	9600	9120	---
TOTAL	154050	201700	182240	120820	103660	158900	364850	507470	274270	270720	272520	270370
MEAN	4969	6723	5879	3897	3702	5126	12160	16370	9142	8733	8791	9012
MAX	9070	7700	7740	4130	3800	7880	15600	27000	13300	11300	10100	10400
MIN	1840	6080	3150	3790	3560	3690	8410	7030	6600	6270	6890	6940
AC-FT	305600	400100	361500	239600	205600	315200	723700	1007000	544000	537000	540500	536300
CFSM	.43	.58	.51	.34	.32	.44	1.05	1.41	.79	.75	.76	.78
IN.	.49	.65	.58	.39	.33	.51	1.17	1.63	.88	.87	.87	.87

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STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1924 - 1999, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	4145	3960	3125	2742	2644	3849	9253	8679	6453	4937	3737	3598
MAX	12930	14640	7297	5713	5480	12290	25430	24600	18160	15250	15230	12940
(WY)	1966	1972	1997	1966	1997	1966	1997	1950	1965	1993	1953	1986
MIN	632	618	627	534	758	968	1924	1663	1071	648	449	535
(WY)	1937	1937	1935	1935	1937	1940	1931	1977	1988	1988	1934	1934

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR	FOR 1999 WATER YEAR	WATER YEARS 1924 - 1999
ANNUAL TOTAL	2056390	2881570	
ANNUAL MEAN	5634	7895	4787
HIGHEST ANNUAL MEAN			9555
LOWEST ANNUAL MEAN			1213
HIGHEST DAILY MEAN	14200	Jun 29	27000
LOWEST DAILY MEAN	1780	Sep 9	1840
ANNUAL SEVEN-DAY MINIMUM	1870	Sep 7	2120
ANNUAL RUNOFF (AC-FT)	4079000	5716000	3468000
ANNUAL RUNOFF (CFSM)	.49	.68	.41
ANNUAL RUNOFF (INCHES)	6.59	9.24	5.61
10 PERCENT EXCEEDS	9150	12700	9850
50 PERCENT EXCEEDS	5100	7220	3480
90 PERCENT EXCEEDS	2340	3740	1320

