UPPER MISSISSIPPI RIVER MAIN STEM

05211000 MISSISSIPPI RIVER AT GRAND RAPIDS, MN

LOCATION.--Lat 4713'56", long 9331'48", in SW *1* / *4* NW *1* / *4* sec. 21, T.55 N., R.25 W., Itasca County, Hydrologic Unit 07010103, on left bank, in super-calendar room of Blandin Paper Mill in Grand Rapids, 400 ft downstream from Blandin Dam, 400 ft upstream from bridge on U.S. Highway 169, 2.5 mi upstream from Prairie River, and at mile 1,182 upstream from Ohio River.
DRAINAGE AREA.--3,370 mi *2* , approximately.
PERIOD OF RECORD.--October 1883 to current year. Monthly discharge only for some periods, published in WSP 1308. Published as "at Pokegama Dam near Grand Rapids" 1942-44.
GAGE.--Water-stage recorder. Datum of gage is 1,242.03 ft above mean sea level. See WSP 1914 for history of changes prior to Jan. 17, 1951.
REMARKS.--Records good, except those for estimated daily discharges, which are fair. Flow regulated by Winnibigoshish Lake (station 05201000), Leech Lake (station 05206000), Pokegama Lake (station 05210500) and occasionally at low flow by power plant at Blandin Dam. Backwater from Prairie River occurs at times in most years.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2240	2380	2380	e1800	1620	1630	764	586	765	1830	1110	455
2	2200	2390	2560	e1800	1630	1530	774	393	872	1740	1080	482
3	2240	2380	2610	e1810	1650	1400	797	432	1060	1670	1100	408
4	2190	2560	2660	e1820	1670	1150	831	512	1000	1720	1140	428
5	2180	2550	2710	e1820	1640	914	784	540	944	1770	1040	496
6	2180	2530	2600	e1820	1640	923	833	581	914	1740	1030	403
7	2170	2520	2620	e1820	1650	937	822	557	939	1700	1000	416
8	2190	2520	2630	e1810	1620	905	847	438	885	1620	1010	462
9	2150	2500	2630	e1800	1600	921	838	329	913	1540	927	450
10	2130	2480	2630	e1790	1600	791	830	362	909	1530	686	352

11	2170	2500	2600	e1780	1620	611	832	413	1020	1540	655	312
12	2260	2500	2630	e1780	1630	579	851	620	1210	1560	574	290
13	2360	2500	2590	e1770	1620	572	856	955	1470	1510	445	385
14	2420	2500	2590	e1720	1620	567	850	1070	1450	1490	317	331
15	2610	2470	2580	e1690	1610	558	854	919	1300	1440	282	315
16	2560	2460	2560	e1690	1640	544	809	797	1130	1470	227	303
17	2580	2390	2540	e1680	1630	532	853	878	1320	1470	223	322
18	2590	2300	2500	e1680	1660	577	835	949	1440	1450	403	333
19	2560	2210	2500	e1670	1620	526	837	1330	1610	1500	425	310
20	2480	2250	2450	e1660	1550	464	769	1470	2080	1510	456	289
21	2480	2280	2400	e1660	1520	395	950	1530	2040	1430	476	316
22	2480	2310	2160	e1650	1490	404	756	1320	1990	1090	450	323
23	2480	2320	2040	e1640	1540	344	841	1070	1980	1360	449	337
24	2450	2290	2050	e1630	1540	275	686	1050	2040	1490	408	307
25	2420	2160	2030	e1620	1560	226	686	1020	2090	1370	483	355
26	2390	2160	2040	e1610	1630	279	721	973	1990	1400	338	261
27	2390	2180	2040	e1600	1690	360	695	840	2030	1310	470	336
28	2360	2220	1950	e1520	1640	453	703	869	2020	1260	389	293
29	2330	2270	1840	e1560	---	460	737	854	2090	1270	473	345
30	2350	2280	1800	e1580	---	679	707	866	2000	1300	419	320
31	2350	---	1810	1580	---	741	---	750	---	1120	513	---
TOTAL	72940	71360	73730	52860	45130	21247	23948	25273	43501	46200	18998	10735
MEAN	2353	2379	2378	1705	1612	685	798	815	1450	1490	613	358
MAX	2610	2560	2710	1820	1690	1630	950	1530	2090	1830	1140	496
MIN	2130	2160	1800	1520	1490	226	686	329	765	1090	223	261
AC-FT	144700	141500	146200	104800	89520	42140	47500	50130	86280	91640	37680	21290
CFSM	.70	.71	.71	.51	.48	.20	.24	.24	.43	.44	.18	.11
IN.	.81	.79	.81	.58	.50	.23	.26	.28	.48	.51	.21	.12

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1942 - 1998, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	1448	1600	1502	1498	1500	1399	1218	1306	1334	1426	1264	1238
MAX	2865	2528	2595	2410	2729	2762	3442	3026	3271	3363	3711	3542
(WY)	1986	1997	1997	1952	1945	1945	1945	1979	1962	1962	1950	1950
MIN	187	174	186	168	177	198	247	32.5	206	125	98.3	195
(WY)	1977	1977	1977	1977	1977	1977	1959	1949	1988	1961	1961	1976

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1942 - 1998		
ANNUAL TOTAL	853233		505922				
ANNUAL MEAN	2338		1386		1394a		
HIGHEST ANNUAL MEAN					2269		1997
LOWEST ANNUAL MEAN					277		1977
HIGHEST DAILY MEAN	3260	Jul 18	2710	Dec 5	4610	Apr 17	1969
LOWEST DAILY MEAN	561	Apr 7	223	Aug 17	.00b	Oct 2	1948
ANNUAL SEVEN-DAY MINIMUM	1100	Apr 4	313	Sep 15	24	May 9	1949
INSTANTANEOUS PEAK FLOW			2740	Dec 5	12500c	Sep 3	1948
INSTANTANEOUS PEAK STAGE			7.65	Dec 5	15.20d	Sep 3	1948
INSTANTANEOUS LOW FLOW			36e	Sep 26			
ANNUAL RUNOFF (AC-FT)	1692000		1003000		1010000		
ANNUAL RUNOFF (INCHES)	9.42		5.58		5.62		
10 PERCENT EXCEEDS	2750		2480		2370		
50 PERCENT	2330		1490		1400		

EXCEEDS							
90 PERCENT EXCEEDS	2020		400		366		

a Average based on 115 years of record is 1211 ft *3* /s; median of annual mean discharges is 1110 ft *3* /s.
b Many days, several years.
c From rating curve extended above 4500 ft *3* /s.
d From floodmark; caused by dam failure.
e Result of regulation.