

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY

HAT CREEK PROJECT

British Columbia Hydro and Power Authority - Hat Creek Project -
Memorandum - Manpower Requirements - 30 October 1980.

ENVIRONMENTAL IMPACT STATEMENT REFERENCE NUMBER: 13

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY

HAT CREEK PROJECT

MANPOWER REQUIREMENTS

Prepared by: W.N. Lewis
Revised 30 October 1980

E.I.S. Reference No. 13

HAT CREEK 2000 MW PROJECT

DIRECT EMPLOYMENT

TOTAL MANPOWER

<u>Operating Year</u>	<u>Construction</u>	<u>Operation</u>	<u>Total</u>
1983	229	0	229
1984	519	1	520
1985	967	38	1005
1986	2315	111	2426
1987	2780	359	3139
1988	2497	657	3154
1989	1850	804	2654
1990	1056	978	2034
1991	322	1069	1391
1992	10	1157	1167
1993	0	1198	1198
1994 - 2003	0	1224	1224
2004 - 2013	0	1159	1159
2014 - 2023	0	1067	1067
2024 - 2033	0	13	13

Note: a) Operations numbers were revised for mine by memo WCF to WNL
4 January 1978.

- b) Revision 23 March 1981
to include: (a) Partial Wet Flue Gas Desulphurization System
(Emission \leq 0.27 mg/Kj)
(b) ESP's (Emission \leq 0.03 mg/kJ.)
(c) 366 m Stack

PROJECT CONTROL
Revision 23 March 1981

DIRECT EMPLOYMENT
HAT CREEK 2000 MW PROJECT
CONSTRUCTION

<u>Operating Year</u> ¹	<u>Powerplant</u> ²	<u>Mine</u> ³	<u>Offsites</u> ⁴	<u>Environment</u> ⁵	<u>Total</u>
1983	103	0	125	1	229
1984	237	100	180	2	519
1985	577	273	115	2	967
1986	1402	359	540	14	2315
1987	2254	394	115	17	2780
1988	2349	121	10	17*	2497
1989	1777	63	10	-	1850
1990	1046	0	10	-	1056
1991	312	0	10	-	322
1992	0	0	10	-	10
1993	0	0	0	-	0

Notes:

1. Construction manpower is keyed approximately to a 1st unit in-service in August 1988, with 3 additional units at 1-year intervals.
 2. Reproduced from W.N. Lewis' August 1977 Manpower Summary. Includes culinary and office and technical, supervisory and field engineers. Original source:
 - (a) Integ-Ebasco 12 August 1977 letter to M.A. Favell.
 - (b) IE - Air Quality Control System - Oct. 1979.
 - (c) Letter IE to BCH (MAF) 17 March 1981 - Revised 23 March 1981 to include FGD + 366m stack + improved ESPs.
 3. Originally compiled in CMJV Mining Feasibility Report July 1978, Table 2-2, Vol. VI; with the addition of mechanical and electrical mine construction forces supplied to W.E. Meeks from CMJV on February 23, 1979, addition of 5% field forces for culinary and exclusion of Vancouver based management and design personnel. Assumed that these data do not include any personnel for environmental protection.
 4. Reproduced from W.N. Lewis' August 1977 Manpower Summary, with modifications by C.K. Harman, on 7 February 1979. Includes culinary and contractors supervision estimate; B.C. Hydro supervision assumed minimal. Operating year totals are only approximate and will vary with scheduled in-service date.
 5. Hat Creek Project Environment Protection Monitoring and Reclamation - Summary of Costs and Manpower Requirements. October 1980.
- * This group "transfers" to Operation.

PROJECT CONTROL
Revision 23 March 1981

DIRECT EMPLOYMENT
HAT CREEK 2000 MW PROJECT
OPERATION

<u>Operating Year</u> ¹	<u>Powerplant</u> ²	<u>Mine</u> ³	<u>Environment</u> ⁴	<u>Total</u>
1984	1	1	0	1
1985	1	37	0	38
1986	3	108	0	111
1987	54	305	*	359
1988	207	450		657
1989	234	553	17	804
1990	316	645	17	978
1991	340	712	17	1069
1992	340	800	17	1157
1993	340	841	17	1198
1994 - 2003	340	867	17	1224
2004 - 2013	340	802	17	1159
2014 - 2023	340	710	17	1067
2024 - 2033	0	0	13	13

Notes:

1. Operating manpower is keyed to a 1st unit in-service in August 1988, with additional units at 1-year intervals.
 2. Based on G.H. Barr Report August 23, 1976, and reproduced from W.N. Lewis August 1977 Manpower Summary with the addition of 37 men/year from 1989 onward to account for new ash scheme detailed in "Alternative 'B' Ash Disposal Study" by Integ-Ebasco, November 1978. Manpower estimates are yearly averages. No culinary is included. Revised 23 March 1981 to include FGD + improved ESPs, + 366 m stack.
(a) IE Air Quality Control Study - Oct. 1979.
(b) Letter IE to BCH (MAF) 17 March 1981.
 3. Based on 1979 Mining Report, Tables 13-1 and 13.2. See 4 January memo from WCF to WNL on 2000 MW Project, Manpower Requirement Revision, Mine Operations. Manpower originally included in Mine for Environmental Protection now included under Environment.
 4. Hat Creek Project Environmental Protection, Monitoring and Reclamation. April 1981
- * This group "transfers" from Construction.

PROJECT CONTROL
Revision 23 March 1981