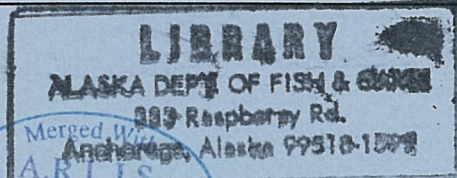


1094-

**SUSITNA
HYDROELECTRIC PROJECT**

FEDERAL ENERGY REGULATORY COMMISSION
PROJECT No. 7114



**PROCESSED CLIMATIC DATA
OCTOBER 1982 - SEPTEMBER 1983**

**VOLUME VII
EKLUTNA LAKE STATION
(No. 0686.5)**



UNDER CONTRACT TO

HARZA-EBASCO
SUSITNA JOINT VENTURE

FINAL REPORT

**JUNE 1984
DOCUMENT No. 1094**

ALASKA POWER AUTHORITY

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SUSITNA HYDROELECTRIC PROJECT

**PROCESSED CLIMATIC DATA
OCTOBER 1982 - SEPTEMBER 1983**

**VOLUME 7
EKLOTNA LAKE STATION (No. 0686.5)**

Report by
R&M Consultants, Inc.

ARLIS
Alaska Resources
Library & Information Services
Anchorage, Alaska

Under Contract to
Harza-Ebasco Susitna Joint Venture

Prepared for
Alaska Power Authority

Final Report
June 1984

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NOTICE

**ANY QUESTIONS OR COMMENTS CONCERNING
THIS REPORT SHOULD BE DIRECTED TO
THE ALASKA POWER AUTHORITY
SUSITNA PROJECT OFFICE**

ALASKA POWER AUTHORITY
SUSITNA HYDROELECTRIC PROJECT

TASK 4 - HYDROLOGY

PROCESSED CLIMATIC DATA (1983)
OCTOBER 1982 - SEPTEMBER 1983

VOLUME INDEX

VOLUME 1: 0610 - SUSITNA GLACIER STATION
VOLUME 2: 0620 - DENALI STATION
VOLUME 3: 0640 - KOSINA CREEK STATION
VOLUME 4: 0650 - WATANA STATION
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VOLUME 6: 0665 - SHERMAN STATION
VOLUME 7: 0686.5 - EKLUTNA LAKE STATION

ALASKA POWER AUTHORITY
SUSITNA HYDROELECTRIC PROJECT

PROCESSED CLIMATIC DATA - EKLUTNA LAKE STATION
OCTOBER 1982 - SEPTEMBER 1983

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Acknowledgments

These climatic data were collected under contract to Acres American, Incorporated (through February 1983) and under contract to Harza-Ebasco Joint Venture (after February) for the Alaska Power Authority's Susitna Hydroelectric Feasibility Study. The data recorders are Model 5100 Weather Wizards manufactured by Meteorology Research, Incorporated (MRI), now part of Belfort Instrument Company. All sensors were supplied by MRI or were replacements obtained from MRI's suppliers. Field maintenance and data collection were performed by the hydrology staff of R&M Consultants, Incorporated. Data reduction and processing were performed by Lisa Fotherby, Len Story, Bob Butera, Carl Schoch, and Jeff Coffin, using computer programs developed by Mark Holmstrand. The computer hardware used was a Hewlett-Packard 9845B system. Review comments were provided by Khalid Jawed of Harza-Ebasco.

ADDENDUM

Subsequent to preparation of the final report and prior to publication, adjustments were made to some of this station's humidity data. Data were adjusted for the months where the RH sensor was seriously out of calibration. The revised mean daily values for both relative humidity and dewpoint are presented in the following table.

June 1984

ADDENDUM

Revised RH and Dewpoint Data

STATION: EKLUTNA

YEAR: 1983

DAY	April		May		June		July		August		September		DAY
	MEAN RH %	MEAN DP DEG C	MEAN RH %	MEAN DP DEG C	MEAN RH %	MEAN DP DEG C	MEAN RH %	MEAN DP DEG C	MEAN RH %	MEAN DP DEG C	MEAN RH %	MEAN DP DEG C	
1	43	-7.4	48	-3.3	37	-3.4	78	8.5	62	8.4	91	6.4	1
2	29	-11.2	78	.3	58	2.4	59	5.6	56	8.2	66	5.3	2
3	46	-6.6	59	-2.4	65	1.7	37	1.6	44	4.9	73	5.3	3
4	69	-3.5	44	-5.3	53	.1	51	6.8	64	8.0	66	.6	4
5	39	-9.2	40	-7.1	36	-1.6	65	9.2	68	8.2	48	-3.9	5
6	31	-13.4	38	-7.6	27	-6.5	87	9.6	37	1.3	40	-5.1	6
7	29	-13.3	34	-6.4	21	-9.5	67	8.2	39	1.9	37	-5.2	7
8	50	-8.8	43	-3.8	33	-5.3	49	2.4	45	3.8	51	.5	8
9	67	-6.6	34	-7.8	69	2.0	47	2.4	68	7.0	**	*****	9
10	34	-14.7	24	-20.0	50	.0	74	8.2	53	4.7	49	.9	10
11	43	-9.9	16	-15.2	24	-9.6	77	4.7	51	4.4	49	1.1	11
12	50	-6.8	27	-6.6	18	-11.8	77	5.4	68	7.6	32	-4.5	12
13	75	-2.2	32	-5.1	28	-4.9	78	7.4	64	3.5	34	-4.3	13
14	37	-8.0	34	-5.5	28	-6.8	51	3.9	54	1.2	70	1.4	14
15	40	-8.1	31	-6.3	50	2.0	51	6.7	54	1.7	58	-1.4	15
16	70	-2.3	29	-7.2	38	-.5	62	8.7	43	2.3	46	-3.0	16
17	66	-4.1	32	-6.6	26	-4.2	79	8.5	60	4.8	55	-2.7	17
18	42	-8.5	34	-6.7	13	-18.9	77	7.5	41	1.5	34	-8.1	18
19	45	-8.6	41	-3.7	44	3.1	64	7.3	36	1.5	39	-3.9	19
20	53	-5.5	42	-2.0	41	.6	79	8.9	30	-3.3	78	6.0	20
21	38	-8.2	62	2.0	38	1.6	62	8.3	72	7.3	91	6.4	21
22	37	-7.3	53	-.0	38	2.9	58	8.5	55	4.8	81	2.7	22
23	34	-8.3	41	-5.1	25	-6.1	77	9.2	74	6.6	75	-4.6	23
24	37	-7.4	36	-5.1	36	1.6	57	6.5	70	5.1	54	-11.3	24
25	39	-8.4	52	.1	23	-9.3	47	2.2	82	3.8	53	-12.5	25
26	49	-4.0	30	-6.7	43	2.6	60	6.9	61	5.5	47	-13.8	26
27	54	-1.9	53	-.2	47	3.7	55	8.2	50	5.1	48	-7.4	27
28	77	-.4	36	-1.5	27	-4.3	44	5.6	50	4.6	57	-2.2	28
29	85	2.3	35	.1	51	3.9	70	10.3	44	1.3	52	1.7	29
30	55	.6	43	1.6	37	1.4	60	7.7	60	5.1	51	.5	30
31			47	.1			66	7.0	76	5.1			31
MONTH	46	-6.7	39	-4.6	35	-2.4	63	6.8	51	4.4	52	-1.9	MONTH

I. BACKGROUND

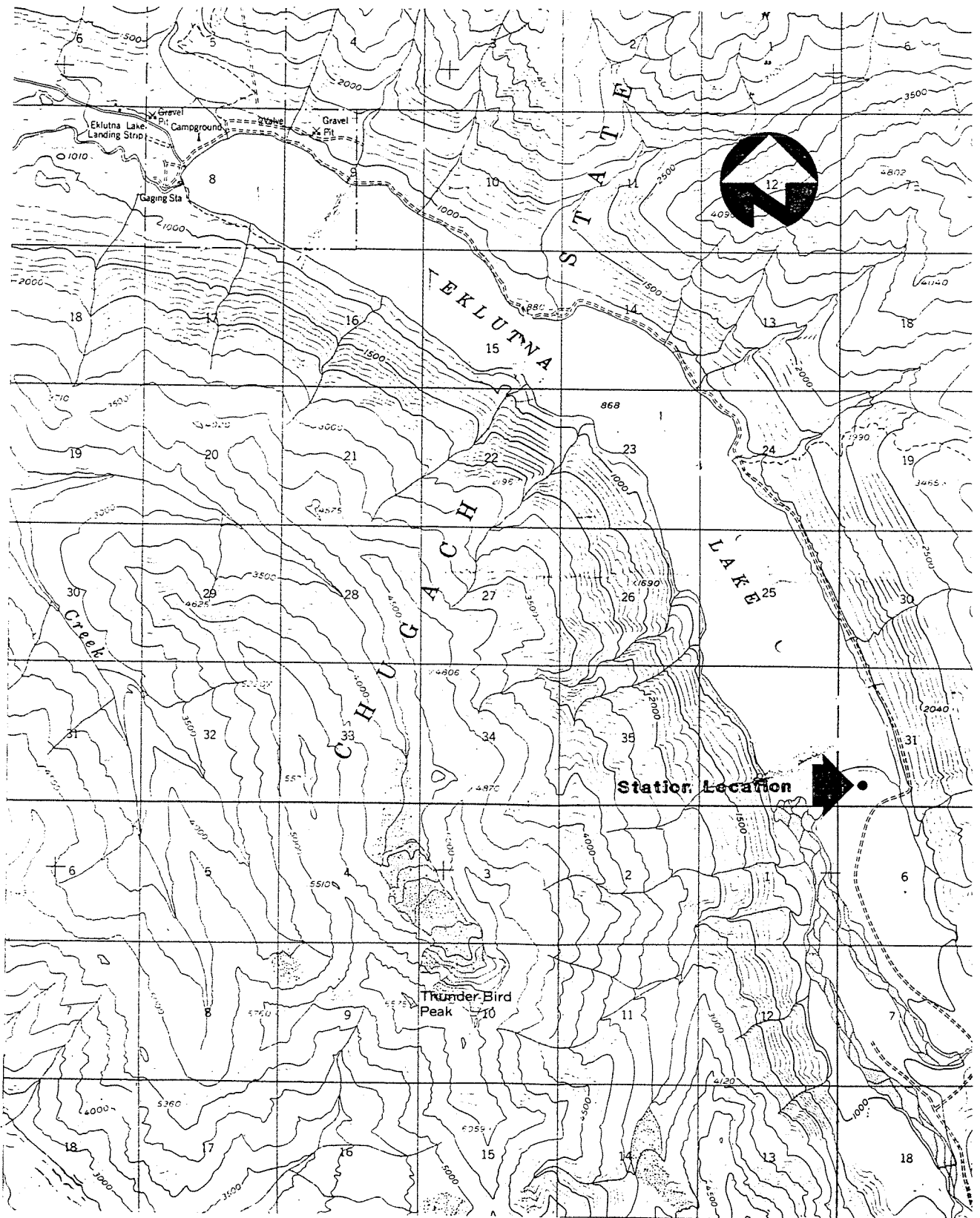
A. Purpose

The only project climate station installed outside of the Susitna basin is at Eklutna Lake. To predict the temperature regime of the proposed Watana Reservoir, the DYRESM computer model of reservoir dynamics is being utilized. However, application of the model for cold regions requires verification of the model on an existing lake system. Eklutna Lake, a deep glacier-fed lake approximately 25 miles northeast of Anchorage, was chosen for concentrated study to verify the DYRESM model. A climate station was necessary to aid in gathering the required data.

B. History of Eklutna Lake Station (No. 0686.5)

Eklutna Station was installed on June 3, 1982 at the upper, or southern, end of Eklutna Lake. The site is on the floodplain of the inflowing river and is composed of glacial till sparsely covered with small birch trees and low brush. The climate station is approximately 100 yards east of the airstrip and a quarter-mile from the reservoir (see Figure 1-1). Estimated elevation of the climate station is 880 feet.

It should be noted that the station identification number has been changed in this year's reports. Last year's station number, 0700, has been changed to the current number, 0686.5. Number 0686.5 is the number used in the R&M Field Data Index and is consistent with use of the system whereby the prefix "06" designates the site as a site for collection of climatic data. The number 0700 was used erroneously in the previous report - the station location has not changed.



USGS ANCHORAGE B-6 (1960) SCALE 1 : 63,360

EKLUTNA CLIMATE STATION

Figure I-1

PREPARED BY:

R&M
R&M CONSULTANTS, INC.
 ENGINEERS GEOLOGISTS PLANNERS SURVEYORS

PREPARED FOR:

HARZA-EBASCO
 SUSITNA JOINT VENTURE

Previous data for this station are reported in:

Report	Period Covered
1. Processed Climatic Data Volume 8 Eklutna Lake Station (No. 0700) Published by R&M Consultants, Inc. December 1982	June - September 1982

II. ANNUAL DATA SUMMARIES

EKLUTNA LAKE STATION (No. 0686.5)

SUMMARY OF CLIMATE DATA RECORDED AT EKLUTNA LAKE STATION (NO. 686.5)
WATER YEAR 1983

Month	Temperature			Wind						Mean RH (%)	Mean DP (°C)	Precip. (mm)	Total Solar Energy (WH/m2)	Month
	Max. (°C)	Min. (°C)	Mean (°C)	Res. Dir. (°True)	Res. Speed (m/sec)	Avg. Speed (m/sec)	Max. Gust Dir. (°True)	Max. Gust Speed (m/sec)	P'val. Dir. (True)					
OCT	10.3	-23.6	-3.7	138M	0.5M	1.3M	150M	12.7M	SSE(M)	36M	-16.6M	M	50,325	OCT
NOV	7.7	-23.9	-4.9	144M	1.6M	1.9M	143M	17.8M	SSE(M)	M	M	M	16,175	NOV
DEC	7.9	-27.0	-4.8	143M	2.1M	2.4M	140M	19.7M	SE(M)	M	M	M	10,918	DEC
JAN	7.7M	-32.6M	-11.8M	133M	0.6M	1.0M	142M	10.8M	SE(M)	M	M	M	13,185M	JAN
FEB	M	M	M	M	M	M	M	M	M	M	M	M	M	FEB
MAR	9.9M	-21.1M	-2.7M	123	0.3	0.8	155	9.5	SSE	M	M	M	109,934M	MAR
APR	17.0	-10.8	2.1	140M	1.0M	1.8M	161M	13.3M	SSE(M)	M	M	37.8	158,021	APR
MAY	19.6M	-2.8M	7.4M	141M	1.1M	2.0M	147M	10.2M	SSE(M)	M	M	5.2	199,142M	MAY
JUN	M	M	M	M	M	M	M	M	M	M	M	26.6	M	JUN
JUL	M	M	M	M	M	M	M	M	M	M	M	29.4M	M	JUL
AUG	M	M	M	M	M	M	M	M	M	M	M	64.2M	M	AUG
SEP	14.4M	-11.8M	5.1M	126M	0.6M	1.5M	145M	15.9M	SE(M)	M	M	91.6M	89,413M	SEP
Annual	M	M	M	M	M	M	M	M	M	M	M	M	M	Annual

Note: Refer to Section III of report for explanation of symbols used.

SUMMARY OF CLIMATE DATA RECORDED AT EKLUTNA LAKE STATION (NO. 686.5)
WATER YEAR 1982

Month	Temperature			Wind						Mean RH (%)	Mean DP (°C)	Precip. (mm)	Total Solar Energy (WH/m ²)	Month
	Max. (°C)	Min. (°C)	Mean (°C)	Res. Dir. (°True)	Res. Speed (m/sec)	Avg. Speed (m/sec)	Max. Gust Dir. (°True)	Max. Gust Speed (m/sec)	P'val. Dir. (True)					
OCT														OCT
NOV														NOV
DEC														DEC
JAN														JAN
FEB														FEB
MAR														MAR
APR														APR
MAY														MAY
JUN	25.3M	-0.7M	10.8M	135M	1.3M	2.2M	144M	13.3M	SSE(M)	33M	-3.7M	5.8M	M	JUN
JUL	M	M	M	M	M	M	M	M	M	M	M	M	M	JUL
AUG	M	M	M	M	M	M	M	M	M	M	M	M	M	AUG
SEP	18.7	-3.2	8.1	137	1.4	2.0	141	21.6	SE	36M	-4.4M	92.2	75,896	SEP
Annual	M	M	M	M	M	M	M	M	M	M	M	M	M	Annual

* Months when RH values were reported in the annual report but subsequent review indicated the data were unusable.

Note: Refer to Section III of report for explanation of symbols used.

III. REPORT PREPARATION

A. DESCRIPTION OF SYMBOLS USED IN ANNUAL AND MONTHLY SUMMARIES

Annual Summary

Blank entries for monthly values indicate the station had not yet been installed at the site or that it had been removed prior to that month. Installation and removal dates are noted on the table as well.

M Insufficient or partial data. M follows average and/or total values if 1-9 daily values were missing data for all or part of the day. M appears alone for the month if 10 or more daily values were missing or contained missing data. Parentheses surround the M where other letters may cause confusion (i.e. in prevailing direction). M follows average and/or total values for the year if any month was missing data. M appears alone for the year if any month was missing enough data to require it to have an M alone or if three or more months were missing any data.

Monthly Summaries

Blank entries for three-hourly, daily, or monthly values (generally just for relative humidity or dewpoint) indicate the R.H. and D.P. data have been deleted for the period. For further explanation, refer to the section "Interpretation of Data."

M Insufficient or partial data. M follows average and/or total values if any readings for the period were missing and would have been required for determination of the table value. M follows the summary values for the month if 1-9 daily values had M's appended to them or had asterisks in their place. M appears alone in place of the monthly values if all daily values had blank entries or asterisks. Parentheses surround the M where other letters may cause confusion (i.e in prevailing direction).

**** Erroneous or missing data (may be from 2 to 6 asterisks, depending on number of digits possible in the value). Appears in place of the value if all readings required for determination of the table value were missing.

- A dash in the hourly precipitation table indicates the volume for that hour is not known, but the cumulative total of precipitation over the interval of consecutive dashed hours is included in the next hour where a value is reported. Similarly, a dash for precipitation in the monthly summary table indicates the volume for that day is not known, but the cumulative total over the interval of consecutive dashed days is included in the next day where a value is reported.

B. DATA COMPUTATION STANDARDS (CLIMATE)

Graphical Data Plot

Graphical representation of valid recorded and/or computed data.

Hourly Precipitation Summary Table

Hourly precipitation values are calculated as the difference between valid (current and preceding) consecutive hourly readings. When either of these hourly precipitation readings is invalid, no value is reported for the current hour.

Monthly Summary Table

1. Maximum daily and monthly temperatures are determined from all valid recorded temperatures.
2. Minimum daily and monthly temperatures are determined from all valid recorded temperatures.
3. Mean daily and monthly temperatures are determined from all valid recorded temperatures. The mean daily temperature is determined from the mean of the maximum and minimum temperatures. The mean monthly temperature is determined from the mean of all reported daily mean temperatures.
4. Resultant daily and monthly wind directions and speeds are summed vectorially from all valid readings.
5. Average daily and month wind speeds are determined for all valid readings (arithmetic mean).

6. Maximum daily and monthly gust speeds are determined from all valid readings. Associated directions are the resultant directions from the recording interval in which the peak interval gust was observed.
7. Prevailing daily and monthly directions are determined from all valid readings. The reported value is the most frequent direction observed.
8. Mean daily and monthly relative humidities are determined from all valid readings (arithmetic mean).
9. Mean daily and monthly dewpoint temperatures are determined from all valid readings (arithmetic mean). Dewpoints are omitted when the wind speed is less than 1 m/s, when the dewpoint calculates to a value greater than the recorded temperature, or when the dewpoint calculates to less than minus 47 degrees or more than 27 degrees Centigrade.
10. Daily and monthly precipitation values are determined from all valid readings.
11. Daily and monthly solar energy values are determined from all valid readings. Daily solar energy is determined by averaging the recorded solar intensity and converting the units. The monthly value is the sum of the daily values.

Three-Hour Summary Tables

1. The temperature reported is the temperature recorded at the specified time.

2. The dewpoint temperature reported is the dewpoint calculated at the specified time. Dewpoints are omitted when the wind speed is less than 1 m/s, when the dewpoint is calculated to a value greater than the recorded temperature, or when the dewpoint calculates to less than minus 47 degrees or more than 27 degrees centigrade, or when either the temperature or R.H. reading is invalid.
3. The relative humidity reported is the humidity recorded at the specified time.
4. The wind direction reported is the three-hour vectorial resultant sum of data recorded up to the specified time.
5. The wind speed reported is the three-hour vectorial resultant of data recorded up to the specified time.
6. The gust direction reported is the direction of the maximum gust recorded during the preceding three-hour period.
7. The gust reported is the maximum recorded during the three-hour period.
8. The radiation reported is the solar radiation intensity recorded at the specified time.

Wind Frequency Summary Table

1. Reported data are determined from all valid readings.

Wind Rose Graphical Plot

1. Plot is a graphical representation of the wind frequency summary table.

General Notes

1. The following are the data ranges assumed valid, based on reasonable expectations for the parameters in south-central Alaska; data outside these ranges are not used:

Time: 0000 through 2400 hours - at specified time intervals.

Temperature: -50 through +35 °C

Wind Speed: 0 through 99.9 meters per second and less than or equal to GUST

Direction: 0 through 360 degrees

Relative Humidity: 0 through 99 percent

Precipitation: 0 through 99.8 mm. Precipitation during recording interval (15 or 30 minutes) should not exceed 30 mm.

Solar: 0 through 150 milliwatts/cm²

Gust: 0 through 99.9 m/sec

Battery: 9 through 14.5 volts

2. Accuracy of the MRI (Meteorology Research, Inc.) sensors and processor are as follows:

Temperature: ±1°C

Wind Speed: ±0.5 meters per second

Wind Direction: ±1% of full scale

Relative Humidity: ±6%

Precipitation: $\pm 1\%$ up to 76.2 mm/hr, $\pm 5\%$ from 76.2 mm/hr to 254 mm/hr

Solar Radiation: $\pm 5 \text{ mw cm}^{-2}$

Tape Recorder Error Rate: 1 bit in 10^7

3. The following are the direction ranges used in the prevailing direction, wind frequency and wind rose summaries:

DIRECTION	COMPASS HEADING
North	350 through 11
North-Northeast	12 through 34
Northeast	35 through 56
East-Northeast	57 through 79
East	80 through 101
East-Southeast	102 through 124
Southeast	125 through 146
South-Southeast	147 through 169
South	170 through 191
South-Southwest	192 through 214
Southwest	215 through 236
West-Southwest	237 through 259
West	260 through 281
West-Northwest	282 through 304
Northwest	305 through 326
North-Northwest	327 through 349

V. MONTHLY CLIMATIC DATA SUMMARIES

EKLUTNA LAKE STATION, WATER YEAR 1983

IV. INTERPRETATION OF DATA

A. GENERAL - Notes on Interpreting Data

1. General

- a. Many of the sensors or the methods of measuring various parameters have peculiarities that affect how the data should be interpreted. The user is encouraged to become familiar with the methods of summation for each parameter and each table. These are described in the section "Data Computation Standards."
- b. The estimates of usable data for the current year in Table IV.1 at the end of this section were prepared by reviewing the published summary tables for each month. Precipitation estimates came from the hourly table; estimates for usable percentages of temperature, relative humidity, and solar radiation data were based on the 3-hour summaries; wind estimates came from comparison with the other parameters and a cursory review of the raw-data printout; and usable longwave radiation estimates were from the raw data.
- c. An enhancement that has been added to this year's series of reports is use of symbols to indicate where data are missing from parameter totals or averages in the summary tables. This is intended to assist the data user in evaluating the quality of the data.

Estimates that are below 90% are reported to the nearest 5%, estimates above 90% are to the nearest 1%. If the data are nearly all good, except for infrequent "bugs," this is

indicated by a "99 + " value. If the estimate is quite rough, this is denoted by a "±" after the value.

2. **Precipitation** - Precipitation data for most stations are reported for April through September only. The stations do not have heaters in their precipitation sensors (tipping buckets), so they are unable to record precipitation when the temperature is below freezing. The sensors are calibrated to tip for 0.2 mm of rainfall and not for snowfall. The sub-freezing temperatures may cause a loss or a delay of the recorded precipitation. Winds frequently blow snow away from or out of (or occasionally into) the collector, and snow collected in the bucket may not be melted and recorded until the next occurrence of warm weather, possibly days or weeks later. The months of October through March very often have sub-freezing temperatures on nearly every day of the month, so their precipitation records have been omitted. It should be noted that even in the months where precipitation data are reported (i.e. April through September), the occurrence of sub-freezing temperatures could affect the timing and the recorded amount of precipitation. The user should exercise caution and make note of the concurrent temperatures in interpreting the precipitation records.

An exception to the normal system of recording winter precipitation is at the Watana Station (No. 0650). That site is equipped with a Wyoming wind gage to eliminate the effects of the wind on the snow, and it also has an AC-powered heater on the precipitation bucket to melt snow that falls into it. The Watana data are thus published for the whole year. Details on the Watana data are included in "Notes on Interpreting Watana Station Data," in the Watana report.

3. **Relative Humidity and Dewpoint** - The relative humidity (R.H.) sensors used are printed circuit elements which sense changes in R.H. by changes in impedance. The sensors, manufactured by Phys-Chem Research Corporation, have chemically-treated surfaces which degrade with time, and are thus very difficult to keep in calibration. Many of the months throughout the year (and at all stations) therefore display significant variations in R.H. patterns. Though the data are generally of poor quality throughout the 1983 year, they are believed to be useful as indicators of the true humidity and have for that reason been left in the report.

When the calibration of the R.H. sensor is too high, readings near the top end (i.e. approaching 100%) may go "over the top" and be read as, say, 110% (if the calibration is high by 10 points). Having only two digits in which to record the R.H., the Weather Wizard will report this as "10," which will drastically affect the computation of instantaneous dewpoint, average R.H., and average dewpoint values. The graphical plot of R.H. will also be misleading, with periodic "spikes" down to very low values. Each plot may be interpreted, however, by mentally adjusting the entire plot downward an appropriate amount to keep the maximum values at 100%. The approximate amount of such adjustment for each month is noted in the following section, "Notes on Interpreting Eklutna Lake Station Data". Because the R.H. and dewpoint values in the monthly summary tables are numerical averages, they are not easily interpreted and have been deleted for the days when RH was "overtopped". Values in the three-hour summaries have been retained since they are instantaneous readings; they should, however, be adjusted by the same amount indicated for the plots.

An additional consideration with respect to dewpoint is the fact that it is not computed when the reported wind speed falls below

1 m/sec, due to inadequate aspiration of the R.H. sensor. This typically causes elimination of at least one dewpoint value on nearly every day of data-collection. However, to avoid undue congestion in the table, daily values have not been individually noted as containing missing records; only the monthly average has been so designated. The same applies to R.H.

4. **Solar Radiation** - Daily and monthly solar radiation values are the cumulative total energy, computed from all valid readings for the period. Either the daily or monthly value can be significantly above or below the true energy value if there are large segments of missing readings (i.e. from the period of very low intensity at night or the period of very high intensity at mid-day). A check should be made, therefore, of the "Usable Data" table and of the graphical plot to get a feel for the frequency and timing of lost solar radiation data. Caution should be used when a significant amount of data is missing.

Another frequent concern in the processing of solar data is the presence of non-zero minimum values. Since the sensors have a stated accuracy of $\pm 1\%$ of the full-scale value of 140 mW/cm^2 , they often record a reading of 0 (during night) as 1 or even 2 mW/cm^2 . This also can bias the daily or monthly totals, making the computed energy much higher than the true solar energy. This type of error in the data is difficult to adjust automatically, but the user can compensate for it in his interpretation by reviewing the instantaneous radiation readings printed in the 3-hour summary tables. If the 3-hour values never drop below 1, even in the winter time, the sensor is very likely reading high. An error of $+1 \text{ mW/cm}^2$ on every reading will cause the computed daily total energy to be high by $240 \text{ watt-hr./cm}^2$. The user can adjust the numbers used accordingly.

5. **Wind Speed and Direction** - The wind frequency summary table in each month's report notes the number of wind observations used in preparing the table. Since data for this year have all been recorded at 15-minute intervals, there were 4 readings recorded per hour and 96 readings per day. This gives a maximum possible number of observations for each month as follows (dependent on the number of days in the month):

Month	Max. Possible # of Observations
October, December, January, March May, July, August (31 days)	2976
November, April, June, September (30 days)	2880
February (28 days)	2688
February in leap years (29 days)	2784

B. Notes on Interpreting EKLUTNA LAKE Station Data

1. **General, June - August** - The recorded data for this period contained numerous "glices" (computer bugs), and quite a few readings of each parameter were not reproduced in full. Many were able to be manually interpreted, however, so every day of the period was not felt to have "missing" data. Monthly summary values were noted with "M" but were retained since they were felt to still represent the actual values.
2. **Precipitation** - Data are presented for April, despite the occurrence of sub-freezing temperatures on several days. This may give errors in the reporting of the timing or the amount of precipitation, and the user should be aware of this in interpreting and applying the data.
3. **Relative Humidity** - As discussed in the preceding section of general notes, many of the R.H. data for the year were considered unreliable or required some "judgment" in their use. Due to calibration problems with the R.H. sensors, some of the data should be adjusted prior to application. The amount of adjustment for each month applicable is listed below, and an example of the interpretation is explained afterward.

Month	Adjustment to Graphical R.H. Values
January 1983	-5 R.H. Points
February	-10
March	-10
April	-15
May	-15
June	-20
July	-20 until 7/5, -10 after 7/5
August	-15
September	-15

Example: In March, the readings peak over the top at about "110 percent" in the graphical plot (The plot does not go to 110, but readings of "10" are equivalent to 110 percent). This value is assumed to correspond to a **true** R.H. of 100 percent. Therefore, 10 points should be subtracted from all the plotted R.H. values. Values from 0-10 should be read as 100-110 (and therefore adjusted to 90-100). The graphical plot may thus be interpreted semi-quantitatively. The numerical values (daily averages), however, are more difficult to interpret and have been deleted from the tables.

4. **Solar Radiation** - Many solar radiation readings are missing during July, at fairly random times of the day. This will bias many of the daily energy totals and the monthly total, causing them to be unreasonably high or low since the valid data are averaged over the period. The user should inspect the 3-hour summaries and the graphical plot to determine the timing of the missing data.

TABLE IV.1

SUSITNA HYDROELECTRIC PROJECT - CLIMATE DATA PROCESSINGAPPROXIMATE PERCENTAGES OF USABLE DATA

Station: Eklutna Lake

Water Year: 1983

	<u>OCT</u>	<u>NOV</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>YEAR</u>
Temperature	100	100	100	90	70	100	100	99+	94	80	93±	96	94
Wind Speed	97	80	85	85	70	100	100	99+	95±	80±	91±	96	90
Wind Direction	94	100	100	90	65	100	98	99+	95±	75±	91±	95	92
Relative Humidity	0	0	0	65	70	100	100	99+	95	85	91±	96	67
Precipitation	0	0	0	0	0	0	100	100	100	98	99+	96	49(1)
Solar Radiation	100	100	100	90	70	100	100	99+	95	85	92±	96	94
Peak Gust	97	80	85	85	70	100	100	99+	95±	85±	91±	96	90
Longwave	5±	35±	25±	0±	0±	0	0	0	45	80±	75±	96	30

(1) Maximum possible recovery percentage is 50% for the year since precipitation bucket is not heated and measurement of sub-freezing precipitation (generally during Oct. - Mar.) is not possible.

No precipitation data for October

(See INTERPRETATION OF DATA).

R & M CONSULTANTS, INC.
SUSTITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR EKLUTNA WEATHER STATION
DATA TAKEN DURING October, 1982

DAY 01

DAY 02

DAY 03

HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.	M/S	DEG.
0300	-1.7	*****	70	119	.7	169	0300	-7.7	*****	59	149	.9	174	0300	.4	*****	70	147	.8
0600	-2.5	*****	59	103	.7	103	0600	-3.3	*****	60	155	.8	158	0600	.2	*****	71	103	.1
0900	3.2	*****	52	113	.7	164	0900	4.4	*****	40	135	.6	163	0900	2.7	*****	51	153	.6
1200	6.8	-11.0	27	199	.3	183	1200	6.5	-10.8	28	250	.1	313	1200	4.3	-8.2	40	130	.4
1500	7.7	*****	27	339	1.2	331	1500	5.3	-7.7	39	343	2.2	344	1500	3.1	-8.4	43	350	2.0
1800	5.0	-9.0	36	358	1.1	350	1800	3.2	-5.2	54	008	1.2	346	1800	2.2	-6.7	52	343	1.6
2100	1.6	*****	56	140	.5	147	2100	1.6	*****	61	143	1.0	147	2100	1.1	*****	59	034	.6
2400	-7.7	-7.7	59	150	.7	194	2400	.5	*****	66	144	.6	165	2400	-1.1	*****	65	140	.6

DAY 04

DAY 05

DAY 06

HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.	M/S	DEG.
0300	-1.3	*****	64	150M	.3M	159M	0300	-7.0	*****	56	***	***	***	0300	-5.8	*****	55	154	.8
0600	-1.2	*****	57	***	***	***	0600	-8.1	*****	56	***	***	***	0600	-4.3	*****	54	***	***
0900	1.0	*****	42	142M	.6M	134M	0900	-1.6	*****	43	111M	.8M	111	0900	-6.6	-12.7	40	153M	1.1M
1200	4.0	*****	21	120	.5	173	1200	2.4	-17.2	22	015	.3	147	1200	1.6	-16.4	25	349	.1
1500	2.6	*****	28	190	1.0	184	1500	2.6	*****	20	238	.5	342	1500	2.7	-16.0	24	157	.2
1800	-1.6	-9.5	55	153	.7	165	1800	-7.7	*****	38	143	.7	140	1800	0.0	*****	33	048	.3
2100	-3.9	*****	58	151M	.7M	163	2100	-3.2	*****	47	155	.8	144	2100	-1.0	*****	41	145	.7
2400	-5.2	*****	56	***	***	***	2400	-4.2	*****	51	155	.7	166	2400	-4.4	-12.5	40	152	.8

DAY 07

DAY 08

DAY 09

HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.	M/S	DEG.
0300	-7.7	*****	53	146	.7	189	0300	-2.4	*****	59	002	1.1	351	0300	-4.4	*****	57	040	.1
0600	-1.3	*****	61	138	.4	023	0600	-3.3	*****	57	146	.1	133	0600	-3.3	-8.7	53	032	.4
0900	-2.2	*****	51	159	.6	131	0900	-1.1	*****	45	157	.2	324	0900	.1	*****	47	032	.1
1200	1.6	-10.0	42	343	1.1	348	1200	1.9	-15.7	26	127	.4	148	1200	.5	-10.1	45	014	1.1
1500	1.7	-9.3	44	342	2.4	344	1500	1.5	*****	38	212	.4	143	1500	.4	-8.9	50	355	1.1
1800	.7	*****	52	350	2.1	347	1800	.2	-11.0	43	017	1.1	013	1800	-1.1	*****	44	351M	1.4M
2100	.2	-6.9	59	005	.6	358	2100	-4.4	*****	58	170	.4	153	2100	-1.2	*****	49	***	***
2400	-8.8	-7.6	60	351	1.6	350	2400	-5.5	*****	59	138	.1	137	2400	-1.2	*****	52	***	***

R & M CONSULTANTS, INC.

SUSTITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR EKLUTNA WEATHER STATION
DATA TAKEN DURING October, 1982

DAY 10

DAY 11

DAY 12

HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.		
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	
	DEG C	DEG C	%	DEG.	M/S	DEG.		DEG C	DEG C	%	DEG.	M/S	DEG.		DEG C	DEG C	%	DEG.	M/S	DEG.	
0300	-1.4	*****	56	***	****	***	0300	-6.1	-15.1	49	149	.9	160	2.5	1	0300	.2	*****	50	245	.3
0600	-.9	*****	45	***	****	***	0600	-2.1	-12.5	45	136	.6	165	3.2	1	0600	5.3	-9.8	33	040	.8
0900	-.2	*****	36	002M	.2M	002M	0900	-1.1	*****	40	209	.3	338	3.8	8	0900	9.0	-15.5	16	162	3.1
1200	.6	*****	22	357	1.3	352	1200	-1.1	-11.9	44	150	.7	146	2.5	6	1200	10.2	-19.1	11	147	4.8
1500	-.3	-16.7	28	098	.3	006	1500	3.3	-9.5	39	282	.7	319	5.1	16	1500	4.1	-11.3	32	115	2.1
1800	-2.0	*****	44	151	.7	142	1800	2.4	-8.1	46	344	2.7	345	7.6	1	1800	2.6	-9.1	42	330	1.8
2100	-4.6	*****	54	137	.7	132	2100	8.6	-15.9	16	144	1.8	144	8.9	2	2100	1.8	-7.3	51	352	.8
2400	-7.1	*****	49	142	.9	157	2400	1.8	-13.3	32	274	.6	163	7.0	1	2400	.7	-7.8	53	359	1.8

DAY 13

DAY 14

DAY 15

HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.		
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	
0300	-.8	-8.7	55	356	2.2	352	0300	-6.0	*****	49	146	.6	132	1.3	1	0300	-1.1	*****	46	006	1.0
0600	-1.0	-8.9	55	012	.8	002	0600	-5.0	*****	50	147	.7	140	1.9	1	0600	-1.3	*****	47	022	.9
0900	-1.3	-10.7	49	356	1.5	352	0900	.5	-6.8	58	077	.2	328	3.2	2	0900	.1	*****	39	139	.6
1200	-1.0	-11.5	45	350	1.8	347	1200	2.6	-3.7	63	343	1.4	352	3.8	35	1200	2.9	*****	24	175	.9
1500	-.6	*****	45	355	1.1	350	1500	1.7	-8.8	46	340	2.3	348	4.4	15	1500	-1.6	-12.9	42	200	.7
1800	-1.5	*****	54	146	.3	344	1800	-.7	-8.9	54	339	2.1	337	3.8	1	1800	-4.1	-13.5	48	166	.9
2100	-2.1	*****	54	151	.5	132	2100	-.8	-9.0	54	347	1.9	341	3.2	1	2100	-6.4	*****	50	158	1.1
2400	-3.5	*****	54	149	.5	130	2400	-1.2	*****	52	354	1.5	345	3.2	1	2400	-4.9	*****	51	162	1.1

DAY 16

DAY 17

DAY 18

HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.		
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	
	DEG C	DEG C	%	DEG.	M/S	DEG.		DEG C	DEG C	%	DEG.	M/S	DEG.		DEG C	DEG C	%	DEG.	M/S	DEG.	
0300	-3.4	*****	49	155	.9	184	0300	.5	-7.3	56	146	.6	166	2.5	1	0300	-4.2	-11.7	56	151	.8
0600	-2.1	*****	51	154	.8	153	0600	.3	*****	58	022	.3	024	3.2	1	0600	-5.0	*****	55	150	.8
0900	5.7	-11.5	28	331	1.0	194	0900	1.5	*****	51	144	.5	144	1.9	12	0900	-.5	-7.5	59	131	.7
1200	5.9	-11.4	28	149	5.4	150	1200	3.0	-10.8	36	350	1.2	337	3.8	18	1200	2.4	-14.0	29	165	.1
1500	6.9	-14.6	20	149	6.1	148	1500	2.7	-11.0	36	329	1.2	355	3.2	10	1500	.1	*****	31	201	.4
1800	7.7	-15.9	17	153	4.3	137	1800	1.2	*****	42	352	1.5	354	3.8	1	1800	1.5	-13.9	31	144	.7
2100	4.4	-9.2	37	147	3.0	158	2100	-1.7	*****	58	156	.7	165	1.9	1	2100	-1.7	-13.7	40	128	.7
2400	2.0	-9.4	43	343	2.1	359	2400	-4.1	-12.0	54	155	.8	158	1.9	0	2400	-.8	-14.2	36	156	.9

R & M CONSULTANTS, INC.
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THREE HOUR SUMMARY FOR EKLUTNA WEATHER STATION
DATA TAKEN DURING October, 1982

DAY 19

DAY 20

DAY 21

HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW	
0300	1.0	*****	34	167	.9	190	3.2	1	0300	-1.9	*****	46	130	.0	248	.6	1
0600	-.5	-12.6	40	154	.7	127	1.9	1	0600	-2.3	*****	47	***	0.0	110	.6	1
0900	.1	*****	48	157	.8	176	1.9	5	0900	0.0	-17.8	25	335	.1	335	2.5	11
1200	3.2	*****	33	141	.5	160	1.9	18	1200	1.5	-19.7	19	318	1.2	329	3.2	41
1500	1.8	*****	45	154	.1	014	1.3	3	1500	1.0	-24.4	13	247	.6	309	7.0	7
1800	2.3	-3.8	64	347	1.8	356	4.4	1	1800	-1.7	-24.3	16	329	2.3	303	6.3	1
2100	-1.7	-11.9	46	028	.7	051	3.8	1	2100	-7.0	-22.2	29	142	1.0	058	2.5	2
2400	0.0	*****	35	143	.3	147	1.9	1	2400	-10.1	-22.1	37	143	1.1	145	2.5	1

DAY 22

DAY 23

DAY 24

HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW	
0300	-12.8	-23.4	41	151	1.2	157	2.5	1	0300	-10.1	-21.0	41	157	1.1	166	2.5	1
0600	-14.3	-24.8	41	151	1.0	160	1.9	1	0600	-12.8	*****	43	151	1.0	165	2.5	1
0900	-9.6	-26.9	23	148	.9	138	1.9	22	0900	-9.0	-26.4	23	156	1.0	167	2.5	25
1200	-4.2	-25.0	18	158	.8	134	1.9	34	1200	-4.6	-19.7	30	187	.8	328	3.8	16
1500	-5.2	-24.2	21	170	1.3	175	2.5	8	1500	-6.9	-21.0	32	330	.3	355	3.8	6
1800	-8.8	*****	30	140	1.0	155	1.9	1	1800	-10.4	-20.7	43	155	1.1	158	1.9	1
2100	-12.4	-23.6	39	151	1.0	172	1.9	1	2100	-14.0	*****	41	147	.9	166	1.9	1
2400	-10.3	-21.7	39	155	1.0	126	1.9	1	2400	-11.9	*****	41	153	1.0	161	2.5	1

DAY 25

DAY 26

DAY 27

HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW	
0300	-14.2	-25.0	40	160	1.2	168	2.5	1	0300	-20.5	*****	38	148	1.2	173	2.5	2
0600	-10.7	*****	42	147	.9	151	2.5	1	0600	-17.1	-28.1	38	150	1.1	159	3.2	2
0900	-6.5	*****	34	098	.5	097	4.4	9	0900	-14.7	-29.3	28	153	1.2	154	2.5	23
1200	-3.3	-25.6	16	161	.4	349	2.5	32	1200	-9.3	-27.6	21	170	1.4	171	2.5	47
1500	-7.0	-23.0	27	319	2.5	006	7.0	7	1500	-9.9	-26.7	24	151	1.0	192	2.5	7
1800	-13.2	*****	33	003	1.5	012	6.3	1	1800	-17.3	-31.2	29	120	.7	012	3.2	1
2100	-16.0	-26.9	39	161	1.2	173	2.5	1	2100	-18.9	-32.2	30	140	1.2	152	2.5	2
2400	-19.2	*****	39	153	1.2	153	2.5	1	2400	-20.8	-34.2	29	142	1.3	137	2.5	2

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THREE HOUR SUMMARY FOR EKLUTNA WEATHER STATION

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DAY 28

DAY 29

DAY 30

HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD
	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW
0300	-10.9	*****	36	144	.8	166	1.9	1	0300	-5.9	-18.7	36	030	.2	339	5.1	1
0600	-9.9	*****	38	147	.8	137	1.9	1	0600	-7.1	*****	35	339	1.0	335	3.8	1
0900	-.1	-19.9	21	333	1.6	141	10.2	5	0900	-9.8	*****	33	151	.9	161	1.9	7
1200	.2	-20.8	19	141	7.7	142	11.4	10	1200	-5.0	-25.7	18	169	1.1	184	2.5	17
1500	2.6	-5.1	57	143	5.8	141	11.4	3	1500	-5.4	-23.8	22	161	1.3	180	1.9	3
1800	-6.0	*****	33	351	1.4	161	10.2	1	1800	-6.5	-23.8	24	155	1.0	160	2.5	1
2100	-5.9	-19.4	34	159	.4	321	2.5	1	2100	-4.9	-17.8	36	133	.7	037	3.8	1
2400	-5.6	*****	36	151	.7	141	1.9	1	2400	-5.4	-19.6	32	004	1.6	004	3.8	1

DAY 31

HR	DEW	WIND	WIND	GUST	MAX.		
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST
	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S
0300	-17.3	-32.9	29	157	1.3	154	3.2
0600	-17.8	-33.4	29	153	1.1	167	2.5
0900	-18.2	*****	27	158	1.2	160	2.5
1200	-17.4	*****	12	166	1.1	166	3.2
1500	-16.3	*****	11	153	.6	058	2.5
1800	1.7	-29.2	8	150	4.5	147	10.2
2100	2.6	-28.5	8	147	5.6	146	10.8
2400	3.6	-27.8	8	149	7.2	150	12.7

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SUSITNA HYDROELECTRIC PROJECT

MONTHLY SUMMARY FOR EKLUTNA WEATHER STATION
DATA TAKEN DURING October, 1982

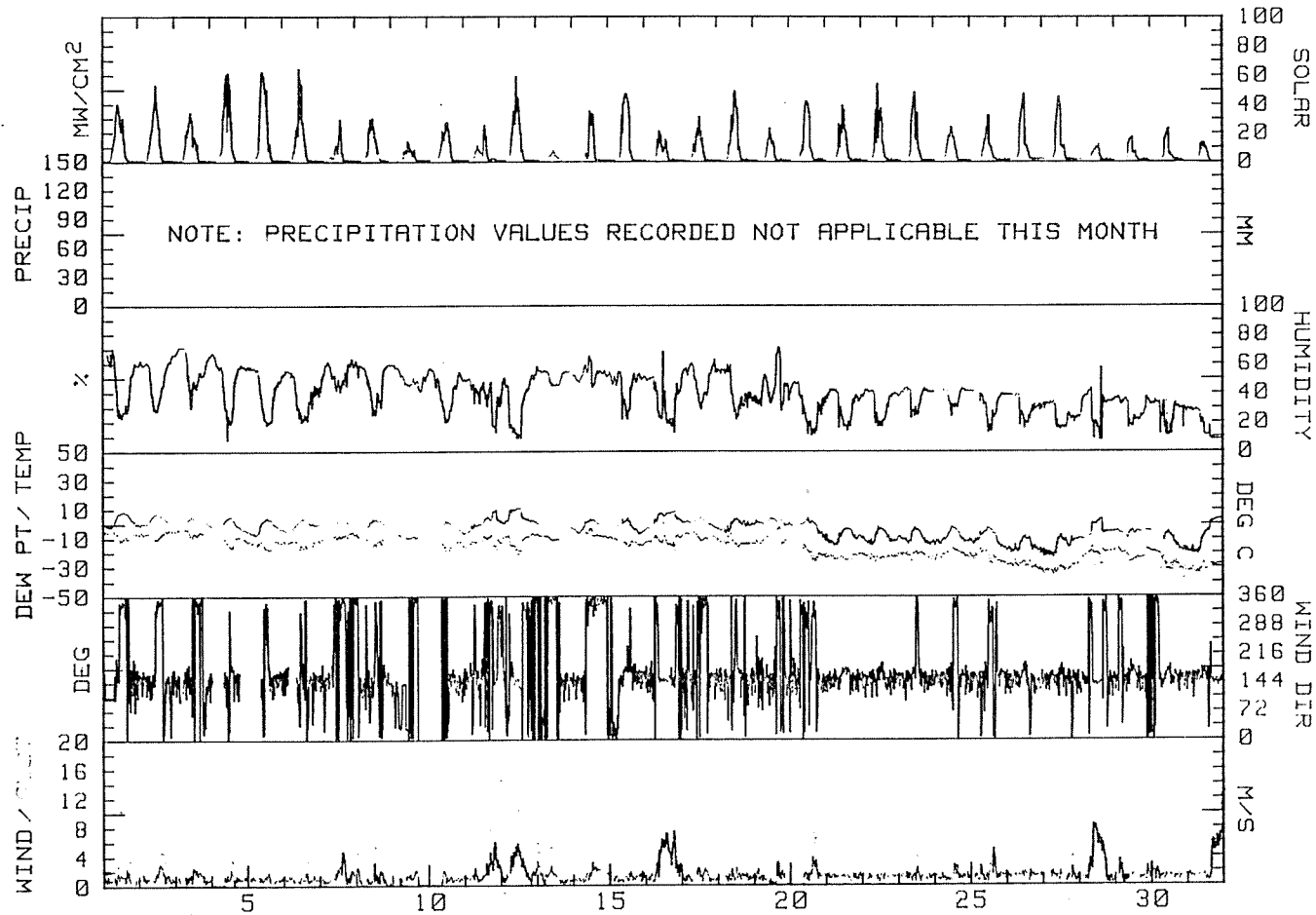
DAY	MAX. TEMP. DEG C	MIN. TEMP. DEG C	MEAN TEMP. DEG C	RES. WIND DIR. DEG	RES. WIND SPD. M/S	AVG. WIND SPD. M/S	MAX. GUST DIR. DEG	MAX. GUST SPD. M/S	P'VAL DIR.	MEAN RH %	MEAN DP DEG C	PRECIP MM	DAY'S SOLAR ENERGY WH/SQHM	DAY
1	8.0	-2.5	2.8	089	.3	.9	350	3.2	ESE	39	-9.2	****	2270	1
2	6.8	-1.5	2.7	092	.2	1.1	344	4.4	SSE	46	-7.7	****	2345	2
3	4.6	-1.2	1.7	027	.3	1.0	348	3.8	SE	52	-6.6	****	1835	3
4	4.6	-5.2	-.3	159M	.6M	.6M	184M	3.2M	SSE(M)	36	-13.7	****	2995	4
5	3.8	-8.1	-2.2	159M	.4M	.9	342	2.5	SSE(M)	40	-14.9	****	3225	5
6	3.4	-5.8	-1.2	145M	.4M	.9	350M	3.2	SSE(M)	38	-14.1	****	2353	6
7	2.0	-1.3	.4	353	.8	1.3	347	7.0	N	51	-8.4	****	935	7
8	2.9	-3.3	-.2	037	.1	.7	013	5.7	SE	41	-11.8	****	1570	8
9	.9	-1.2	-.2	004M	.6M	.5M	337M	3.2M	NNE(M)	48	-9.6	****	760	9
10	1.9	-7.2	-2.7	108M	.3M	.6M	352M	3.8M	SSE(M)	36	-15.7	****	1515	10
11	9.1	-7.8	.7	171	.1	1.9	144	8.9	SSE	37	-12.4	****	1055	11
12	10.3	.1	5.2	125	.7	2.3	153	10.2	SSE	31	-12.6	****	2398	12
13	.1	-3.5	-1.7	001	.8	1.1	352	5.7	N	51	-9.9	****	465	13
14	2.8	-6.9	-2.1	348	1.0	1.4	348	4.4	NNW	54	-8.1	****	1353	14
15	3.4	-7.5	-2.1	153	.4	1.0	355	3.2	S	44	-13.2	****	2513	15
16	8.6	-4.7	2.0	149	2.2	3.3	158	11.4	SSE	33	-11.9	****	1075	16
17	4.0	-4.1	-.1	013	.2	1.0	337	3.8	SSE	44	-9.7	****	1338	17
18	3.0	-6.8	-1.9	149	.6	1.1	059	4.4	SSE	39	-13.7	****	2165	18
19	3.2	-1.7	.8	116	.2	.9	356	4.4	SSE	46	-10.3	****	1010	19
20	3.4	-12.0	-4.3	308	.2	1.0	309	7.0	SE	23	-21.9	****	2015	20
21	-4.0	-15.3	-9.7	155	1.0	1.0	162	2.5	SSE	32	-23.8	****	1658	21
22	-2.8	-15.1	-9.0	154	1.0	1.1	157	2.5	SSE	34	-23.6	****	1995	22
23	-3.1	-15.1	-9.1	158	.8	1.1	328	3.8	SSE	36	-22.0	****	1910	23
24	-2.5	-15.4	-9.0	142	.4	1.1	352	4.4	SSE	38	-21.4	****	1285	24
25	-3.3	-19.2	-11.3	141	.2	1.4	006	7.0	SSE	32	-24.7	****	1275	25
26	-9.0	-21.1	-15.1	149	1.1	1.3	159	3.2	SSE	31	-29.9	****	1918	26
27	-8.3	-23.6	-16.0	152	1.1	1.2	004	3.8	SSE	25	-32.2	****	1900	27
28	2.7	-10.9	-4.1	139	1.7	3.0	142	11.4	SE	28	-20.8	****	685	28
29	-4.7	-10.1	-7.4	134	.3	1.2	339	5.1	SSE	27	-22.5	****	850	29
30	-5.4	-19.9	-12.7	145	.6	1.3	355	3.8	SSE	27	-27.0	****	960	30
31	3.6	-21.6	-9.0	151	2.8	2.9	150	12.7	SSE	17	-30.6	****	700	31
MONTH	10.3	-23.6	-3.7	138M	.5M	1.3M	150M	12.7M	SSE(M)	36M	-16.6M	****	50325	

GUST VEL. AT MAX. GUST MINUS 2 INTERVALS 10.2
GUST VEL. AT MAX. GUST MINUS 1 INTERVAL 11.4
GUST VEL. AT MAX. GUST PLUS 1 INTERVAL 10.8
GUST VEL. AT MAX. GUST PLUS 2 INTERVALS 10.8

NOTE: RELATIVE HUMIDITY READINGS ARE UNRELIABLE WHEN WIND SPEEDS ARE LESS THAN ONE METER PER SECOND. SUCH READINGS HAVE NOT BEEN INCLUDED IN THE DAILY OR MONTHLY MEAN FOR RELATIVE HUMIDITY AND DEW POINT.

**** SEE NOTES AT THE BACK OF THIS REPORT ****

R&M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT
EKLUTNA WEATHER STATION
October, 1982



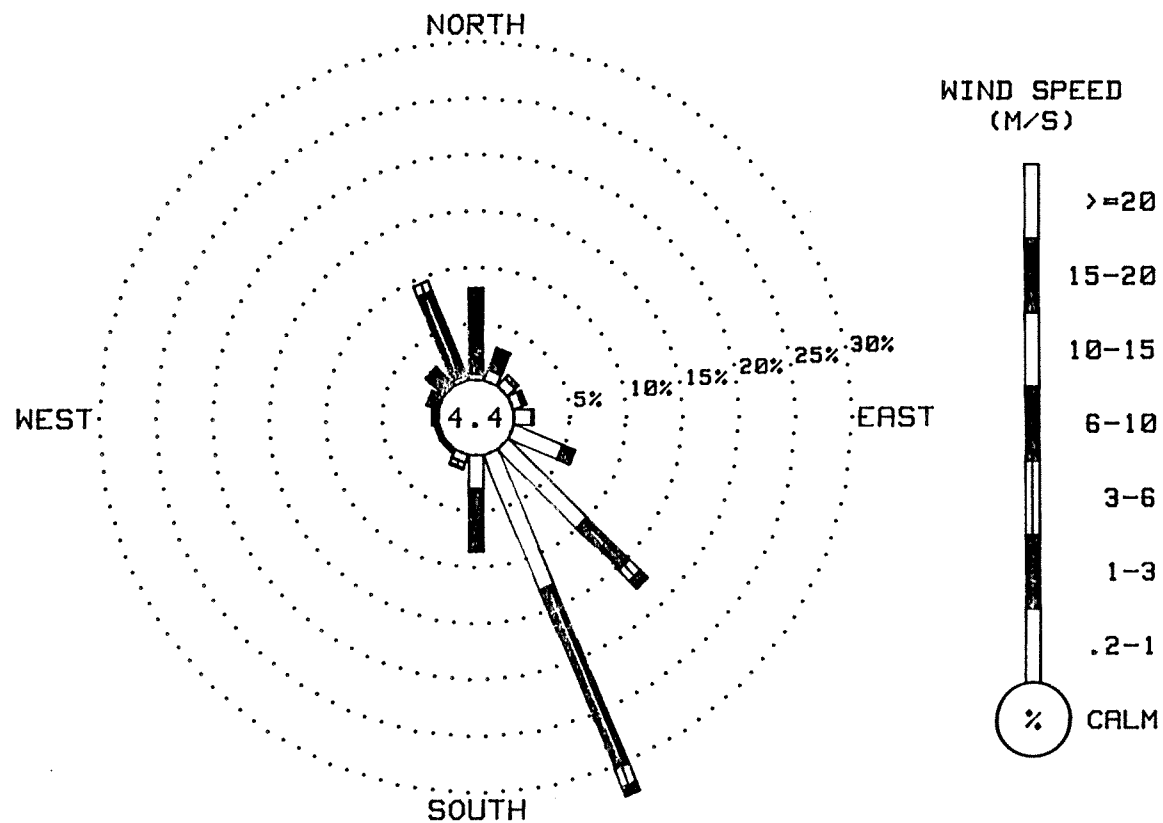
R & M CONSULTANTS, INC.
SUSTITNA HYDROELECTRIC PROJECT

WIND FREQUENCY SUMMARY FOR EKLUTNA WEATHER STATION
DATA TAKEN DURING October, 1982

DIRECTION	VELOCITY (M/S)							TOTAL
	0.2 TO 1.0	1.0 TO 3.0	3.0 TO 6.0	6.0 TO 10.0	10.0 TO 15.0	15.0 TO 20.0	20.0 OR GREATER	
N	.54	7.38	.21	0.00	0.00	0.00	0.00	8.13
NNE	1.03	1.93	.11	0.00	0.00	0.00	0.00	3.07
NE	.96	.36	0.00	0.00	0.00	0.00	0.00	1.32
ENE	.89	.32	0.00	0.00	0.00	0.00	0.00	1.21
E	1.64	.07	.04	0.00	0.00	0.00	0.00	1.75
ESE	4.74	1.14	0.00	0.00	0.00	0.00	0.00	5.89
SE	9.88	5.28	1.39	.93	0.00	0.00	0.00	17.48
SSE	12.99	17.12	1.82	.78	0.00	0.00	0.00	32.72
S	3.00	5.42	.11	0.00	0.00	0.00	0.00	8.53
SSW	.75	.50	.07	0.00	0.00	0.00	0.00	1.32
SW	.21	.11	0.00	0.00	0.00	0.00	0.00	.32
WSW	.14	.18	0.00	0.00	0.00	0.00	0.00	.32
W	.21	.32	.04	0.00	0.00	0.00	0.00	.57
WNW	.25	.86	.07	0.00	0.00	0.00	0.00	1.18
NW	.21	1.93	.21	0.00	0.00	0.00	0.00	2.35
NNW	.50	7.99	1.00	0.00	0.00	0.00	0.00	9.49
CALM								4.35
TOTAL	37.96	50.91	5.07	1.71	0.00	0.00	0.00	100.00

NOTE: ALL FREQUENCIES ARE EXPRESSED IN PERCENT
2803 VALID WIND OBSERVATIONS USED TO DEVELOP FREQUENCY SUMMARY

R&M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT
EKLUTNA WEATHER STATION
October, 1982



WIND ROSE PLOT

No precipitation data for November

(See INTERPRETATION OF DATA) .

R & M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR EKLUTNA WEATHER STATION
DATA TAKEN DURING November, 1982

DAY 01

DAY 02

DAY 03

HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.	
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S
0300	3.8	*****	**	151	5.6	147	0300	.1	*****	**	121	.4	027	0300	-11.8	*****	**	***	***	***
0600	4.0	*****	**	147	6.9	145	0600	-3.0	*****	**	146M	.7M	148M	0600	-9.9	*****	**	***	***	***
0900	4.7	*****	**	147	7.8	148	0900	-2.7	*****	**	***	***	***	0900	-7.4	*****	**	***	***	***
1200	2.3	*****	**	145	5.0	149	1200	1.5	*****	**	149M	.8M	159M	1200	-4.3	*****	**	***	***	***
1500	.6	*****	**	160	.5	139	1500	-2.3	*****	**	162	.7	103	1500	-4.6	*****	**	***	***	***
1800	.2	*****	**	009	.2	356	1800	-5.8	*****	**	156M	.6M	160M	1800	-4.5	*****	**	***	***	***
2100	.4	*****	**	139	.5	118	2100	-8.3	*****	**	***	***	***	2100	-5.0	*****	**	***	***	***
2400	1.3	*****	**	118	.5	177	2400	-9.1	*****	**	***	***	***	2400	-5.4	*****	**	***	***	***

DAY 04

DAY 05

DAY 06

HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.	
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S
0300	-5.1	*****	**	***	***	***	0300	-9.9	*****	**	***	***	***	0300	-4.7	*****	**	***	***	***
0600	-5.0	*****	**	***	***	***	0600	-8.3	*****	**	***	***	***	0600	-4.9	*****	**	***	***	***
0900	-3.8	*****	**	***	***	***	0900	-5.7	*****	**	***	***	***	0900	-3.8	*****	**	***	***	***
1200	-2.7	*****	**	***	***	***	1200	-3.0	*****	**	***	***	***	1200	-4.3	*****	**	***	***	***
1500	-2.9	*****	**	***	***	***	1500	-2.6	*****	**	***	***	***	1500	-4.4	*****	**	***	***	***
1800	-4.2	*****	**	***	***	***	1800	-3.8	*****	**	***	***	***	1800	-5.0	*****	**	***	***	***
2100	-6.1	*****	**	***	***	***	2100	-4.4	*****	**	***	***	***	2100	-5.7	*****	**	***	***	***
2400	-8.7	*****	**	***	***	***	2400	-4.5	*****	**	***	***	***	2400	-5.9	*****	**	***	***	***

DAY 07

DAY 08

DAY 09

HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.	
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S
0300	-6.8	*****	**	***	***	***	0300	.5	*****	**	***	***	***	0300	-8.2	*****	**	138	.6	118
0600	-9.4	*****	**	***	***	***	0600	.9	*****	**	144	6.2	144	0600	-10.5	*****	**	146	.8	163
0900	-11.9	*****	**	***	***	***	0900	2.7	*****	**	143	7.5	144	0900	-11.5	*****	**	148	.9	155
1200	-8.5	*****	**	***	***	***	1200	1.8	*****	**	140	7.7	142	1200	-4.5	*****	**	159	1.3	169
1500	-11.5	*****	**	***	***	***	1500	2.8	*****	**	133	5.6	135	1500	-8.5	*****	**	148	1.1	159
1800	-14.4	*****	**	***	***	***	1800	-1.9	*****	**	179	.4	148	1800	-12.9	*****	**	154	1.1	131
2100	-14.9	*****	**	***	***	***	2100	-4.4	*****	**	335	2.4	340	2100	-14.6	*****	**	156	1.2	150
2400	-7.4	*****	**	***	***	***	2400	-4.2	*****	**	142	.6	163	2400	-12.7	*****	**	149	1.1	144

R & M CONSULTANTS, INC.

SUSTITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR EKLUTNA WEATHER STATION
DATA TAKEN DURING November, 1982

DAY 10

DAY 11

DAY 12

HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.		
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	
0300	-13.7	*****	**	154	1.0	145 2.5	1	0300	2.8	*****	**	133	4.2 138 8.3	1	0300	5.4	*****	**	148	5.4 145 10.2	0
0600	-6.8	*****	**	147	1.1	168 2.5	1	0600	4.3	*****	**	144	2.4 126 7.0	0	0600	5.6	*****	**	148	7.5 142 14.6	0
0900	-6.5	*****	**	155	1.1	165 3.2	3	0900	1.1	*****	**	182	.7 153 6.3	6	0900	5.6	*****	**	150	8.3 154 14.0	2
1200	3.3	*****	**	150	1.6	146 7.0	4	1200	1.1	*****	**	166	.4 173 2.5	10	1200	5.7	*****	**	148	7.4 146 15.2	11
1500	3.9	*****	**	149	4.8	164 8.9	2	1500	-1.6	*****	**	162	.8 214 2.5	3	1500	5.8	*****	**	146	10.5 143 17.8	1
1800	3.7	*****	**	146	4.4	157 8.9	0	1800	-5.0	*****	**	144	.7 167 2.5	1	1800	4.7	*****	**	145	8.2 145 15.9	0
2100	2.4	*****	**	153	3.9	158 8.9	1	2100	3.6	*****	**	135	1.1 136 5.1	0	2100	3.0	*****	**	143	4.3 150 10.8	1
2400	3.4	*****	**	154	3.5	157 8.3	0	2400	5.4	*****	**	144	4.7 141 9.5	0	2400	5.5	*****	**	140	5.9 143 12.7	0

DAY 13

DAY 14

DAY 15

HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.		
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	
	DEG C	DEG C	%	DEG.	M/S	DEG.		DEG C	DEG C	%	DEG.	M/S	DEG.		DEG C	DEG C	%	DEG.	M/S	DEG.	
0300	5.7	*****	**	147	5.9	144 11.4	0	0300	-2.1	*****	146	.5	156 1.3	1	0300	-1.2	*****	**	147	.5	148 1.9
0600	5.1	*****	**	150	6.9	145 11.4	0	0600	-1.3	*****	150	.8	131 2.5	1	0600	-1.9	*****	**	110	.3	051 1.9
0900	5.8	*****	**	144	6.1	153 11.4	3	0900	-1.5	*****	160	.9	171 1.9	6	0900	-2.0	*****	**	142	.6	149 1.9
1200	6.2	*****	**	138	5.7	141 9.5	12	1200	.8	*****	152	.6	146 1.9	16	1200	-2.7	*****	**	154	.7	143 1.9
1500	4.7	*****	**	146	3.4	146 8.3	2	1500	.3	*****	131	.2	116 1.9	2	1500	-5.4	*****	**	144	.9	150 1.9
1800	4.1	*****	**	142	2.4	124 6.3	0	1800	-7	*****	062	.1	024 1.9	1	1800	-10.4	*****	**	144	.8	142 1.9
2100	3.0	*****	**	051	.2	346 3.2	1	2100	-8	*****	158	.6	151 1.3	1	2100	-12.2	*****	**	153	.9	163 1.9
2400	.1	*****	**	104	.3	351 3.2	1	2400	-1.1	*****	141	.4	136 1.3	1	2400	-11.9	*****	**	154	.9	161 2.5

DAY 16

DAY 17

DAY 18

HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.		
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	
	DEG C	DEG C	%	DEG.	M/S	DEG.		DEG C	DEG C	%	DEG.	M/S	DEG.		DEG C	DEG C	%	DEG.	M/S	DEG.	
0300	-14.3	*****	**	156	1.0	157 1.9	1	0300	-17.9	*****	**	154	.9 169 1.9	1	0300	-20.6	*****	**	157	1.0 157 1.9	1
0600	-14.3	*****	**	154	1.0	162 2.5	1	0600	-19.3	*****	**	149	.8 138 1.9	1	0600	-22.5	*****	**	155	1.0 161 1.9	1
0900	-13.1	*****	**	158	1.1	171 1.9	2	0900	-17.7	*****	**	155	.8 160 1.9	3	0900	-21.7	*****	**	152	1.0 155 1.9	2
1200	-9.5	*****	**	163	1.1	176 1.9	5	1200	-13.3	*****	**	158	.9 158 1.9	4	1200	-15.7	*****	**	156	1.0 157 1.9	4
1500	-8.5	*****	**	148	.7	155 1.9	2	1500	-17.0	*****	**	158	1.0 167 1.9	2	1500	-19.1	*****	**	150	1.0 162 1.9	2
1800	-10.7	*****	**	169	1.1	165 2.5	1	1800	-18.9	*****	**	154	.9 145 1.9	1	1800	-21.6	*****	**	154	.9 159 1.9	1
2100	-11.8	*****	**	163	1.3	160 2.5	1	2100	-20.6	*****	**	152	.9 165 1.9	1	2100	-22.6	*****	**	147	.9 152 1.9	1
2400	-14.1	*****	**	160	1.2	170 1.9	1	2400	-21.0	*****	**	153	.9 153 1.9	1	2400	-23.1	*****	**	150	1.0 163 2.5	1

R & M CONSULTANTS, INC.

SUSITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR EKLUTNA WEATHER STATION
DATA TAKEN DURING November, 1982

DAY 19

DAY 20

DAY 21

HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	TEMP.	POINT	RH	DIR.	SPD.	DIR.	TEMP.	POINT	RH	DIR.	SPD.
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.	M/S	DEG.	DEG C	DEG C	%	DEG.	M/S
						MW											MW
0300	-22.7	*****	**	155	1.0	149	1.9	1	0300	-10.9	*****	**	145	.7	141	1.9	2
0600	-23.8	*****	**	154	1.0	160	1.9	1	0600	-8.8	*****	**	147	.8	162	1.9	1
0900	-22.7	*****	**	153	.9	162	1.9	2	0900	-5.2	*****	**	151	.6	105	2.5	2
1200	-16.7	*****	**	156	1.0	150	1.9	4	1200	-2.3	*****	**	360	.5	291	3.2	5
1500	-19.4	*****	**	154	.9	161	1.9	1	1500	-4.2	*****	**	200	.2	326	3.2	2
1800	-19.4	*****	**	152	.9	149	1.9	1	1800	-6.5	*****	**	154	.8	164	2.5	1
2100	-14.0	*****	**	150	.8	161	2.5	1	2100	-7.1	*****	**	153	.9	133	1.9	1
2400	-11.7	*****	**	154	.8	163	2.5	1	2400	-6.7	*****	**	149	.9	138	1.9	1

DAY 22

DAY 23

DAY 24

HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.	M/S	DEG.	DEG C	DEG C	%	DEG.	M/S
						MW											MW
0300	4.1	*****	**	124	4.1	109	8.9	0	0300	6.6	*****	**	138	4.4	136	7.6	0
0600	4.6	*****	**	121	4.0	115	9.5	0	0600	7.3	*****	**	137	4.1	140	7.6	0
0900	4.9	*****	**	143	4.1	134	8.9	2	0900	2.3	*****	**	138	.9	145	7.0	2
1200	5.3	*****	**	143	3.6	146	8.9	6	1200	1.6	*****	**	332	1.6	316	3.8	5
1500	5.6	*****	**	144	4.5	154	9.5	1	1500	3.2	*****	**	130	1.6	152	8.3	1
1800	5.7	*****	**	132	5.0	147	10.2	0	1800	.5	*****	**	341	1.3	331	4.4	1
2100	5.3	*****	**	126	5.1	124	9.5	0	2100	-7	*****	**	141	.6	134	2.5	1
2400	6.1	*****	**	134	4.8	125	8.9	0	2400	-1.6	*****	**	345	.6	299	4.4	1

DAY 25

DAY 26

DAY 27

HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.	M/S	DEG.	DEG C	DEG C	%	DEG.	M/S
						MW											MW
0300	-5.0	*****	**	152	.7	155	1.9	1	0300	-4.6	*****	**	146	.8	145	2.5	1
0600	-4.0	*****	**	147	.7	163	1.9	1	0600	-4.3	*****	**	134	.8	141	2.5	1
0900	-3.1	*****	**	143	.7	163	2.5	2	0900	-3.4	*****	**	136	.8	127	1.9	2
1200	-.9	*****	**	140	.5	147	1.9	7	1200	-1.6	*****	**	074	.5	064	1.9	6
1500	-1.2	*****	**	120	.4	094	1.3	1	1500	1.7	*****	**	036	.8	074	5.1	2
1800	0.0	*****	**	132	.4	001	1.9	1	1800	6.9	*****	**	144	2.3	142	8.9	0
2100	-1.6	*****	**	138	.6	132	1.9	1	2100	5.1	*****	**	145	3.8	136	7.6	0
2400	-3.6	*****	**	142	.7	158	1.9	1	2400	3.5	*****	**	138	2.0	137	7.0	0

R & M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR EKLUTNA WEATHER STATION
DATA TAKEN DURING November, 1982

DAY 28

DAY 29

DAY 30

DAY 28								DAY 29								DAY 30										
HOUR	DEW	WIND	WIND	GUST	MAX.			HOUR	DEW	WIND	WIND	GUST	MAX.			HOUR	DEW	WIND	WIND	GUST	MAX.					
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST			
	DEG C	DEG C	%	DEG.	M/S	DEG.	MW		DEG C	DEG C	%	DEG.	M/S	DEG.	MW		DEG C	DEG C	%	DEG.	M/S	DEG.	MW			
0300	-7.7	*****	**	154	.9	152	1.9	1	0300	-3.3	*****	**	100	.2	351	1.9	1	0300	-4.2	*****	**	346	.6	338	3.2	1
0600	-8.5	*****	**	155	.8	166	1.9	1	0600	-3.9	*****	**	136	.4	142	1.3	1	0600	-5.9	*****	**	006	.5	354	4.4	1
0900	-7.2	*****	**	157	.8	163	1.9	2	0900	-5.4	*****	**	145	.6	128	1.3	2	0900	-8.0	*****	**	339	1.8	346	4.4	1
1200	-3.9	*****	**	148	.7	112	1.9	5	1200	-1.7	*****	**	133	.3	125	1.3	3	1200	-8.9	*****	**	343	1.5	350	5.1	2
1500	-3.1	*****	**	121	.3	149	1.9	2	1500	-2.3	*****	**	128	.3	174	1.9	1	1500	-9.3	*****	**	349	1.6	345	3.2	1
1800	-3.2	*****	**	148	.5	171	1.3	1	1800	-1.9	*****	**	119	.3	015	1.9	1	1800	-12.2	*****	**	353	2.2	350	5.1	1
2100	-3.1	*****	**	144	.5	127	1.3	1	2100	-2.7	*****	**	032	.2	345	1.9	1	2100	-12.3	*****	**	011	1.2	003	3.8	1
2400	-2.6	*****	**	033	.2	029	1.9	1	2400	-2.2	*****	**	104	.2	112	1.3	1	2400	-13.5	*****	**	014	1.2	008	3.2	1

R & M CONSULTANTS, INC.

SUSITNA HYDROELECTRIC PROJECT

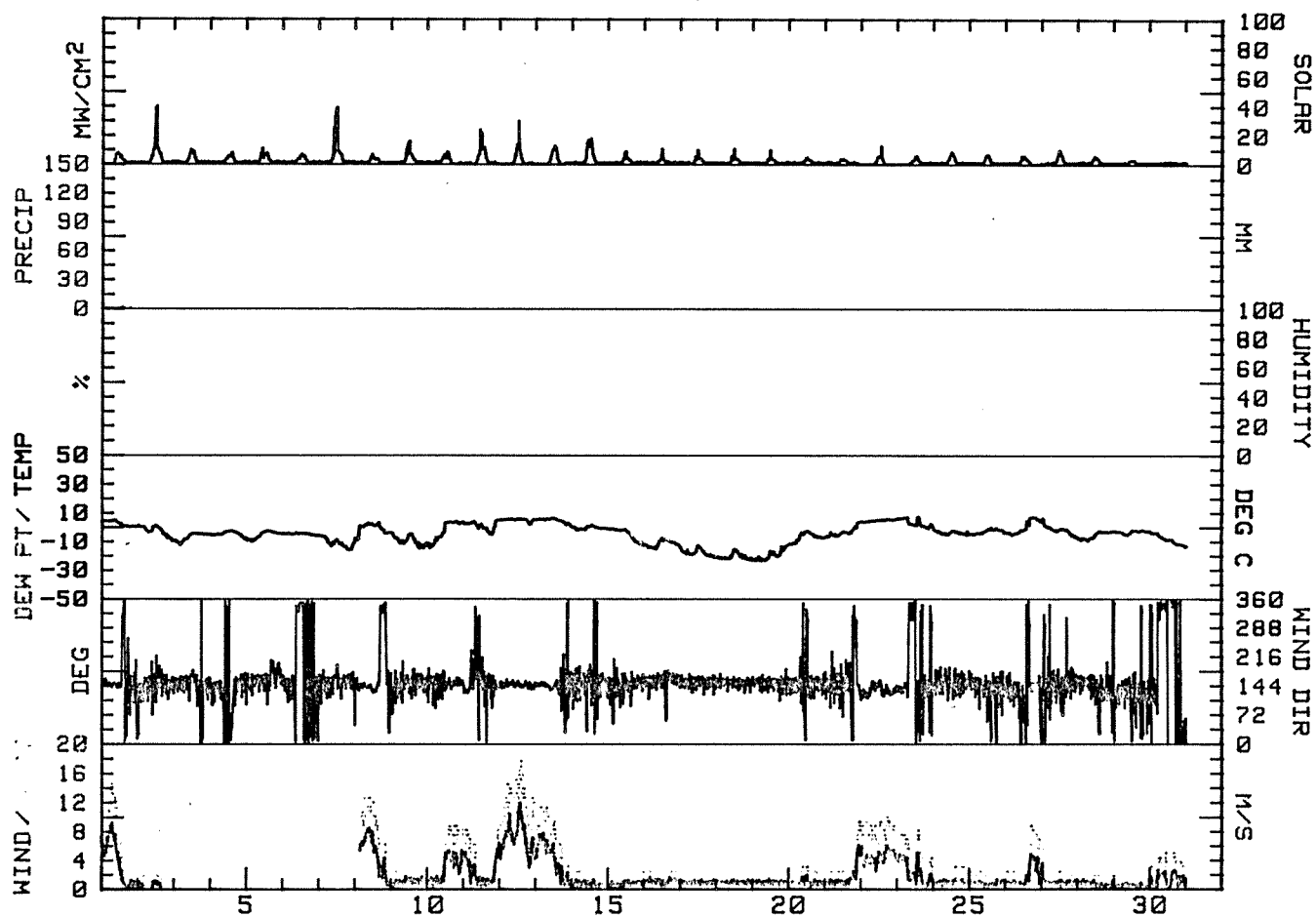
MONTHLY SUMMARY FOR EKLUTNA WEATHER STATION
DATA TAKEN DURING November, 1982

DAY	MAX. TEMP. DEG C	MIN. TEMP. DEG C	MEAN TEMP. DEG C	RES. WIND DIR. DEG	RES. WIND SPD. M/S	AVG. WIND SPD. M/S	MAX. GUST DIR. DEG	MAX. GUST SPD. M/S	P'VAL	MEAN RH %	MEAN DP DEG C	PRECIP MM	DAY'S SOLAR ENERGY WH/SQM	DAY
1	5.3	.1	2.7	147	3.3	3.6	148	14.6	SSE	**	*****		440	1
2	1.5	-10.1	-4.3	148M	.6M	.7M	027M	1.9M	SSE(M)	**	*****		1073	2
3	-4.2	-12.7	-8.5	***	****	****	***	****	***	**	*****		588	3
4	-2.4	-9.1	-5.8	***	****	****	***	****	***	**	*****		518	4
5	-2.5	-10.2	-6.4	***	****	****	***	****	***	**	*****		623	5
6	-3.8	-6.2	-5.0	***	****	****	***	****	***	**	*****		518	6
7	-6.0	-16.3	-11.2	***	****	****	***	****	***	**	*****		1388	7
8	3.4	-9.8	-3.2	140M	3.6M	4.8M	144M	12.7M	SE (M)	**	*****		438	8
9	-4.2	-15.1	-9.7	151	1.0	1.1	163	2.5	SSE	**	*****		738	9
10	4.3	-14.9	-5.3	150	2.7	2.7	164	8.9	SSE	**	*****		490	10
11	5.5	-5.4	.1	143	1.8	2.2	141	9.5	SE	XX	XXXX		825	11
12	6.3	2.0	4.2	146	7.2	7.2	143	17.8	SE	**	*****		590	12
13	6.8	.1	3.5	144	3.8	4.1	144	11.4	SE	**	*****		558	13
14	1.8	-2.1	-.2	150	.5	.7	131	2.5	SSE	XX	XXXX		885	14
15	-.9	-12.8	-6.9	146	.7	.7	161	2.5	SSE	**	*****		473	15
16	-7.3	-15.5	-11.4	160	1.1	1.1	162	2.5	SSE	**	*****		443	16
17	-12.4	-21.7	-17.1	154	.9	.9	169	1.9	SSE	**	*****		468	17
18	-15.1	-23.8	-19.5	153	1.0	1.0	163	2.5	SSE	**	*****		438	18
19	-11.7	-23.9	-17.8	153	.9	.9	161	2.5	SSE	**	*****		435	19
20	-2.1	-11.8	-7.0	148	.5	.9	291	3.2	SSE	**	*****		380	20
21	4.3	-6.8	-1.3	147	1.0	1.6	145	9.5	SSE	**	*****		343	21
22	6.3	4.0	5.2	133	4.4	4.4	147	10.2	SE	**	*****		298	22
23	7.7	-1.6	3.1	129	1.1	2.4	152	8.3	SE	**	*****		335	23
24	-1.6	-5.7	-3.7	152	.9	.9	147	3.2	SSE	**	*****		513	24
25	.1	-5.3	-2.6	141	.6	.7	163	2.5	SE	**	*****		443	25
26	7.4	-5.8	.8	135	1.3	1.7	142	8.9	SE	**	*****		348	26
27	6.5	-7.8	-.7	143	.6	.9	125	5.7	SSE	**	*****		520	27
28	-2.3	-9.7	-6.0	148	.5	.7	152	1.9	SSE	**	*****		433	28
29	-1.6	-5.4	-3.5	123	.3	.4	351	1.9	SE	**	*****		335	29
30	-3.3	-13.8	-8.6	354	1.2	1.3	350	5.1	N	**	*****		308	30
MONTH	7.7	-23.9	-4.9	144M	1.6M	1.9M	143M	17.8M	SSE(M)	XX	XXXX	XXXX	16175	

GUST VEL. AT MAX. GUST MINUS 2 INTERVALS 15.2
GUST VEL. AT MAX. GUST MINUS 1 INTERVAL 17.1
GUST VEL. AT MAX. GUST PLUS 1 INTERVAL 15.9
GUST VEL. AT MAX. GUST PLUS 2 INTERVALS 13.3

NOTE: RELATIVE HUMIDITY READINGS ARE UNRELIABLE WHEN WIND SPEEDS ARE LESS THAN ONE METER PER SECOND. SUCH READINGS HAVE NOT BEEN INCLUDED IN THE DAILY OR MONTHLY MEAN FOR RELATIVE HUMIDITY AND DEW POINT.

R&M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT
EKLUTNA WEATHER STATION
November, 1982



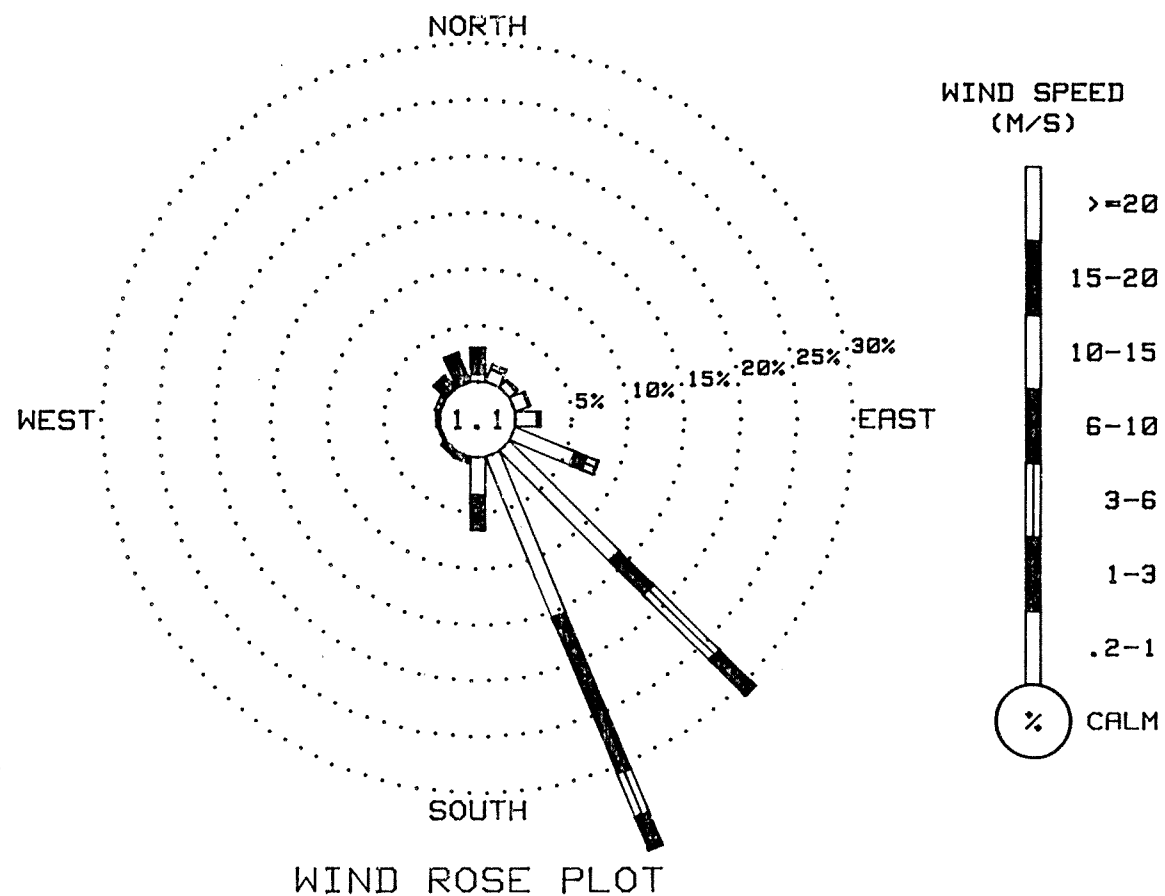
R & M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT

WIND FREQUENCY SUMMARY FOR EKLUTNA WEATHER STATION
DATA TAKEN DURING November, 1982

DIRECTION	VELOCITY (M/S)							TOTAL
	0.2	1.0	3.0	6.0	10.0	15.0	20.0	
	TO 1.0	TO 3.0	TO 6.0	TO 10.0	TO 15.0	TO 20.0	OR GREATER	
N	.69	2.29	.04	0.00	0.00	0.00	0.00	3.02
NNE	1.21	.47	0.00	0.00	0.00	0.00	0.00	1.68
NE	.82	.17	0.00	0.00	0.00	0.00	0.00	.99
ENE	1.29	.13	0.00	0.00	0.00	0.00	0.00	1.42
E	1.94	.30	0.00	0.00	0.00	0.00	0.00	2.24
ESE	5.78	1.03	1.12	.04	0.00	0.00	0.00	7.98
SE	13.84	4.27	8.24	4.18	.30	0.00	0.00	30.83
SSE	15.48	15.05	4.23	2.93	.17	0.00	0.00	37.86
S	3.41	3.10	0.00	0.00	0.00	0.00	0.00	6.51
SSW	.34	.26	0.00	0.00	0.00	0.00	0.00	.60
SW	.34	.13	.04	0.00	0.00	0.00	0.00	.52
WSW	0.00	.17	0.00	0.00	0.00	0.00	0.00	.17
W	.22	.09	0.00	0.00	0.00	0.00	0.00	.30
WNW	.04	.43	0.00	0.00	0.00	0.00	0.00	.47
NW	.13	1.34	.04	0.00	0.00	0.00	0.00	1.51
NNW	.26	2.29	.26	0.00	0.00	0.00	0.00	2.80
CALM								1.08
TOTAL	45.80	31.52	13.97	7.16	.47	0.00	0.00	100.00

NOTE: ALL FREQUENCIES ARE EXPRESSED IN PERCENT
2319 VALID WIND OBSERVATIONS USED TO DEVELOP FREQUENCY SUMMARY
2880 WIND OBSERVATIONS WOULD HAVE BEEN CORRECT FOR 15 MINUTE DATA.

R&M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT
EKLUTNA WEATHER STATION
November, 1982



No precipitation data for December

(See INTERPRETATION OF DATA).

R & M CONSULTANTS, INC.

SUSITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR EKLUTNA WEATHER STATION
DATA TAKEN DURING December, 1982

DAY 01

DAY 02

DAY 03

HR	DEW	WIND	WIND	GUST	MAX.	HR	DEW	WIND	WIND	GUST	MAX.	HR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	TEMP.	POINT	RH	DIR.	SPD.	DIR.	TEMP.	POINT	RH	DIR.	SPD.
	DEG C	DEG C	%	DEG.	M/S	DEG.	DEG C	DEG C	%	DEG.	M/S	DEG.	DEG C	DEG C	%	DEG.	M/S
					MW						MW						MW
0300	-13.7	*****	**	015	.8	356	3.2	1	0300	-14.9	*****	**	052	.3	067	1.9	1
0600	-13.5	*****	**	142	.6	150	1.9	1	0600	-16.4	*****	**	130	.4	108	1.3	1
0900	-14.3	*****	**	135	.4	032	1.9	2	0900	-19.4	*****	**	146	.5	124	1.3	2
1200	-12.8	*****	**	143	.6	166	1.9	3	1200	-20.7	*****	**	148	.9	158	1.9	3
1500	-15.0	*****	**	152	.6	165	1.9	1	1500	-22.1	*****	**	148	.7	149	1.9	1
1800	-14.5	*****	**	131	.7	141	2.5	1	1800	-24.6	*****	**	149	.8	158	1.9	1
2100	-15.3	*****	**	142	.8	156	1.9	1	2100	-25.7	*****	**	149	.9	158	1.9	1
2400	-15.0	*****	**	137	.6	154	1.9	2	2400	-25.7	*****	**	149	.9	142	2.5	1

DAY 04

DAY 05

DAY 06

HR	DEW	WIND	WIND	GUST	MAX.	HR	DEW	WIND	WIND	GUST	MAX.	HR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	TEMP.	POINT	RH	DIR.	SPD.	DIR.	TEMP.	POINT	RH	DIR.	SPD.
	DEG C	DEG C	%	DEG.	M/S	DEG.	DEG C	DEG C	%	DEG.	M/S	DEG.	DEG C	DEG C	%	DEG.	M/S
					MW						MW						MW
0300	-24.4	*****	**	146	.8	160	2.5	1	0300	2.1	*****	**	140	2.3	137	5.1	0
0600	-24.2	*****	**	142	.7	143	1.9	1	0600	3.0	*****	**	131	3.6	131	7.6	0
0900	-20.2	*****	**	140	.6	135	2.5	2	0900	3.9	*****	**	121	4.3	117	8.9	1
1200	-16.4	*****	**	126	.7	118	2.5	3	1200	4.9	*****	**	136	4.4	130	8.9	4
1500	-15.1	*****	**	137	.5	121	1.9	1	1500	4.9	*****	**	142	3.3	192	7.6	0
1800	-14.6	*****	**	127	.5	128	1.9	1	1800	4.6	*****	**	147	3.4	138	7.0	0
2100	-11.6	*****	**	124	.6	109	2.5	1	2100	4.3	*****	**	142	4.1	140	7.6	0
2400	.8	*****	**	146	1.3	138	5.7	1	2400	5.0	*****	**	146	3.7	151	7.0	0

DAY 07

DAY 08

DAY 09

HR	DEW	WIND	WIND	GUST	MAX.	HR	DEW	WIND	WIND	GUST	MAX.	HR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	TEMP.	POINT	RH	DIR.	SPD.	DIR.	TEMP.	POINT	RH	DIR.	SPD.
	DEG C	DEG C	%	DEG.	M/S	DEG.	DEG C	DEG C	%	DEG.	M/S	DEG.	DEG C	DEG C	%	DEG.	M/S
					MW						MW						MW
0300	2.4	*****	**	148	8.5	144	14.0	1	0300	1.8	*****	**	135	2.5	151	8.9	1
0600	3.2	*****	**	151	7.6	149	15.2	1	0600	.5	*****	**	347	.5	352	5.7	1
0900	3.3	*****	**	151	5.8	145	11.4	1	0900	4.4	*****	**	142	2.0	151	7.6	1
1200	4.6	*****	**	139	4.8	135	9.5	6	1200	6.5	*****	**	154	4.7	160	9.5	5
1500	4.8	*****	**	159	2.6	143	7.6	0	1500	5.6	*****	**	149	6.1	145	11.4	0
1800	5.2	*****	**	143	5.0	136	9.5	0	1800	5.1	*****	**	143	4.5	147	8.9	0
2100	5.9	*****	**	150	5.3	149	10.2	0	2100	.7	*****	**	355	.6	134	7.6	1
2400	5.7	*****	**	147	5.5	149	10.8	0	2400	.1	*****	**	338	.1	010	3.8	1

R & M CONSULTANTS, INC.

SUSTITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR EKLUTNA WEATHER STATION
DATA TAKEN DURING December, 1982

DAY 10

DAY 11

DAY 12

HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.	
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S
0300	-13.8	*****	**	***	***	***	2 0300	-7.8	*****	**	***	***	***	1 0300	-5.6	*****	**	***	***	***
0600	-14.3	*****	**	***	***	***	1 0600	-6.2	*****	**	***	***	***	1 0600	-5.4	*****	**	***	***	***
0900	-14.7	*****	**	***	***	***	2 0900	-5.5	*****	**	***	***	***	2 0900	-3.3	*****	**	***	***	***
1200	-9.6	*****	**	***	***	***	5 1200	-3.7	*****	**	***	***	***	6 1200	-.2	*****	**	***	***	***
1500	-8.4	*****	**	***	***	***	2 1500	-4.7	*****	**	***	***	***	2 1500	.9	*****	**	114M	.6M	009M
1800	-8.7	*****	**	***	***	***	1 1800	-6.8	*****	**	***	***	***	1 1800	1.3	*****	**	149	1.1	125
2100	-9.3	*****	**	***	***	***	1 2100	-7.4	*****	**	***	***	***	1 2100	.4	*****	**	160	.9	169
2400	-7.7	*****	**	***	***	***	1 2400	-8.2	*****	**	***	***	***	1 2400	.4	*****	**	111	.4	109

DAY 13

DAY 14

DAY 15

HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.		
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	
	DEG C	DEG C	%	DEG.	M/S	DEG.		DEG C	DEG C	%	DEG.	M/S	DEG.		DEG C	DEG C	%	DEG.	M/S	DEG.	
0300	.8	*****	**	040	.4	075	1.9	1	0300	.9	*****	**	343	.5	1	0300	-.6	*****	**	114	.6
0600	1.8	*****	**	125	.5	085	10.2	1	0600	.7	*****	**	149	.9	1	0600	-1.0	*****	**	153	.7
0900	3.2	*****	**	148	4.1	148	10.2	1	0900	-2.7	*****	**	123	.5	2	0900	2.6	*****	**	168	.9
1200	3.3	*****	**	145	3.3	142	7.0	6	1200	-1.2	*****	**	129	.5	5	1200	1.6	*****	**	126	.5
1500	3.1	*****	**	153	3.1	152	7.6	0	1500	-1.6	*****	**	126	.5	1	1500	1.1	*****	**	141	1.8
1800	3.7	*****	**	148	4.4	134	8.3	0	1800	-1.2	*****	**	064	.4	1	1800	3.5	*****	**	159	.3
2100	2.9	*****	**	132	1.9	125	6.3	0	2100	-2.1	*****	**	097	.3	1	2100	-.3	*****	**	173	.6
2400	2.1	*****	**	250	.5	109	3.2	1	2400	-2.0	*****	**	054	.3	1	2400	4.4	*****	**	137	.5

DAY 16

DAY 17

DAY 18

HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.		
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	
	DEG C	DEG C	%	DEG.	M/S	DEG.		DEG C	DEG C	%	DEG.	M/S	DEG.		DEG C	DEG C	%	DEG.	M/S	DEG.	
0300	2.1	*****	**	164	1.3	164	3.8	1	0300	4.5	*****	**	147	.8	0	0300	-9.0	*****	**	148	.5
0600	2.4	*****	**	151	1.7	144	6.3	1	0600	5.2	*****	**	126	2.9	0	0600	-10.1	*****	**	150	.6
0900	.8	*****	**	105	.4	077	3.2	2	0900	-1.3	*****	**	127	2.2	2	0900	-8.4	*****	**	146	.6
1200	3.2	*****	**	124	.5	190	3.2	5	1200	-1.1	*****	**	354	.6	6	1200	-6.3	*****	**	136	.5
1500	5.9	*****	**	113	1.1	135	5.1	0	1500	-2.9	*****	**	154	.5	1	1500	-8.6	*****	**	140	.5
1800	5.8	*****	**	139	3.8	146	7.6	0	1800	-6.3	*****	**	130	.5	1	1800	-11.2	*****	**	148	.7
2100	5.5	*****	**	138	4.3	136	9.5	0	2100	-8.2	*****	**	150	.6	1	2100	-11.1	*****	**	145	.6
2400	5.3	*****	**	126	3.2	130	7.6	0	2400	-8.6	*****	**	145	.6	1	2400	-10.5	*****	**	141	.7

R & M CONSULTANTS, INC.

SUSITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR EKLUTNA WEATHER STATION
DATA TAKEN DURING December, 1982

DAY 19

DAY 20

DAY 21

HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.		
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	
0300	-10.1	*****	**	137	.7	130	1.9	1	0300	-2.0	*****	**	353	1.2	358	3.2	1	0300	-8.4	*****	**
0600	-7.8	*****	**	139	.7	139	2.5	1	0600	-.4	*****	**	128	1.2	128	8.9	1	0600	-7.7	*****	**
0900	-4.4	*****	**	110	.7	154	2.5	2	0900	-1.4	*****	**	013	.8	293	2.5	2	0900	-10.8	*****	**
1200	3.1	*****	**	126	1.2	128	5.7	7	1200	-.2	*****	**	028	.8	075	3.8	6	1200	-10.4	*****	**
1500	3.4	*****	**	120	2.9	117	6.3	0	1500	-2.4	*****	**	035	.6	335	1.9	1	1500	-12.4	*****	**
1800	2.2	*****	**	135	2.8	134	6.3	0	1800	-4.9	*****	**	352	.6	348	2.5	2	1800	-14.3	*****	**
2100	-1.1	*****	**	167	.3	146	4.4	1	2100	-6.3	*****	**	136	.7	173	2.5	1	2100	-16.1	*****	**
2400	-2.4	*****	**	339	1.3	344	3.2	1	2400	-8.5	*****	**	149	.8	162	2.5	1	2400	-16.8	*****	**

DAY 22

DAY 23

DAY 24

HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.		
NDNG	TEMP	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP	POINT	RH	DIR.	SPD.	DIR.	
	DEG C	DEG C	%	DEG.	M/S	DEG.		DEG C	DEG C	%	DEG.	M/S	DEG.		DEG C	DEG C	%	DEG.	M/S	DEG.	
0300	-17.2	*****	**	151	.6	158	1.3	1	0300	-18.9	*****	**	143	.6	117	1.9	1	0300	-14.6	*****	**
0600	-17.6	*****	**	152	.6	162	1.9	1	0600	-19.3	*****	**	153	.7	154	1.3	1	0600	-14.8	*****	**
0900	-18.5	*****	**	154	.7	165	1.9	2	0900	-19.4	*****	**	149	.6	133	1.3	2	0900	-13.3	*****	**
1200	-16.5	*****	**	148	.6	158	1.3	6	1200	-17.2	*****	**	148	.6	159	1.3	6	1200	-9.7	*****	**
1500	-17.7	*****	**	148	.5	136	1.3	1	1500	-18.2	*****	**	139	.5	145	1.9	1	1500	-8.4	*****	**
1800	-17.9	*****	**	150	.6	164	1.3	1	1800	-14.6	*****	**	144	.5	146	1.9	1	1800	-9.3	*****	**
2100	-16.7	*****	**	145	.6	166	1.9	1	2100	-14.9	*****	**	134	.6	107	1.3	1	2100	-12.8	*****	**
2400	-15.8	*****	**	146	.6	141	1.9	1	2400	-12.8	*****	**	136	.5	146	1.3	1	2400	-14.5	*****	**

DAY 25

DAY 26

DAY 27

HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.							
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.						
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S						
0300	-14.6	*****	**	***	***	***	2	0300	2.9	*****	**	146	5.5	140	10.8	0	0300	6.0	*****	**	149	6.5	153	12.7	0	
0600	-16.1	*****	**	136M	.5M	156M	1.3M	1	0600	4.4	*****	**	150	7.7	147	15.2	0	0600	6.0	*****	**	143	5.8	145	10.8	0
0900	-15.8	*****	**	133	.5	127	1.3	2	0900	5.1	*****	**	152	7.3	150	16.5	1	0900	6.6	*****	**	140	5.9	127	10.2	0
1200	-13.2	*****	**	141	.3	117	1.3	6	1200	5.1	*****	**	149	9.5	146	15.2	4	1200	6.4	*****	**	134	7.6	132	13.3	2
1500	-14.3	*****	**	121	.3	143	1.3	1	1500	5.5	*****	**	150	8.8	158	15.9	0	1500	5.7	*****	**	140	7.9	138	14.6	0
1800	-10.4	*****	**	118	.4	130	1.3	1	1800	5.8	*****	**	151	9.2	150	16.5	0	1800	5.4	*****	**	142	7.5	143	15.9	0
2100	2.0	*****	**	142	1.8	149	7.6	0	2100	6.0	*****	**	150	8.5	153	14.6	0	2100	4.4	*****	**	145	9.9	146	18.4	1
2400	3.3	*****	**	149	4.7	145	9.5	0	2400	5.2	*****	**	146	7.5	149	14.6	0	2400	4.7	*****	**	144	9.5	142	15.9	1

R & M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR EKLUTNA WEATHER STATION
DATA TAKEN DURING December, 1982

DAY 28

DAY 29

DAY 30

HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.									
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD									
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW			
0300	2.7	*****	**	145	7.5	140	14.0	1	0300	5.2	*****	**	142	10.9	140	19.7	0	0300	-2.0	*****	**	016	.9	048	3.8	1
0600	3.4	*****	**	141	5.5	142	9.5	1	0600	5.5	*****	**	138	9.7	141	17.8	0	0600	-3.8	*****	**	038	.7	022	3.2	1
0900	4.3	*****	**	146	7.8	149	13.3	1	0900	5.5	*****	**	144	8.3	147	14.6	1	0900	-6.2	*****	**	107	.4	015	2.5	2
1200	4.2	*****	**	145	6.4	151	14.0	2	1200	3.6	*****	**	143	5.8	142	12.7	2	1200	-3.7	*****	**	141	.4	179	1.9	7
1500	7.1	*****	**	141	5.2	137	12.1	0	1500	2.3	*****	**	153	2.1	138	7.0	1	1500	-4.4	*****	**	101	.2	332	1.3	1
1800	7.6	*****	**	151	5.7	153	12.1	0	1800	2.2	*****	**	202	.9	177	3.8	1	1800	-6.4	*****	**	136	.4	154	1.9	1
2100	6.6	*****	**	148	7.6	151	15.2	0	2100	3.3	*****	**	173	1.7	174	5.7	1	2100	-6.9	*****	**	146	.5	173	1.9	1
2400	6.5	*****	**	144	10.0	140	19.7	0	2400	-1.1	*****	**	048	.8	057	2.5	1	2400	-7.2	*****	**	148	.6	103	1.9	1

DAY 31

HOUR	DEW	WIND	WIND	GUST	MAX.			
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW	
0300	-8.3	*****	**	139	.6	155	2.5	1
0600	-7.5	*****	**	137	.6	097	2.5	1
0900	-7.2	*****	**	125	.5	158	1.3	2
1200	-4.7	*****	**	112	.4	125	1.9	4
1500	-4.3	*****	**	049	.4	036	2.5	2
1800	-3.8	*****	**	125	.5	150	1.9	1
2100	-4.2	*****	**	129	.6	134	1.9	2
2400	-3.4	*****	**	126	.5	090	1.3	1

R & M CONSULTANTS, INC.

SUSITNA HYDROELECTRIC PROJECT

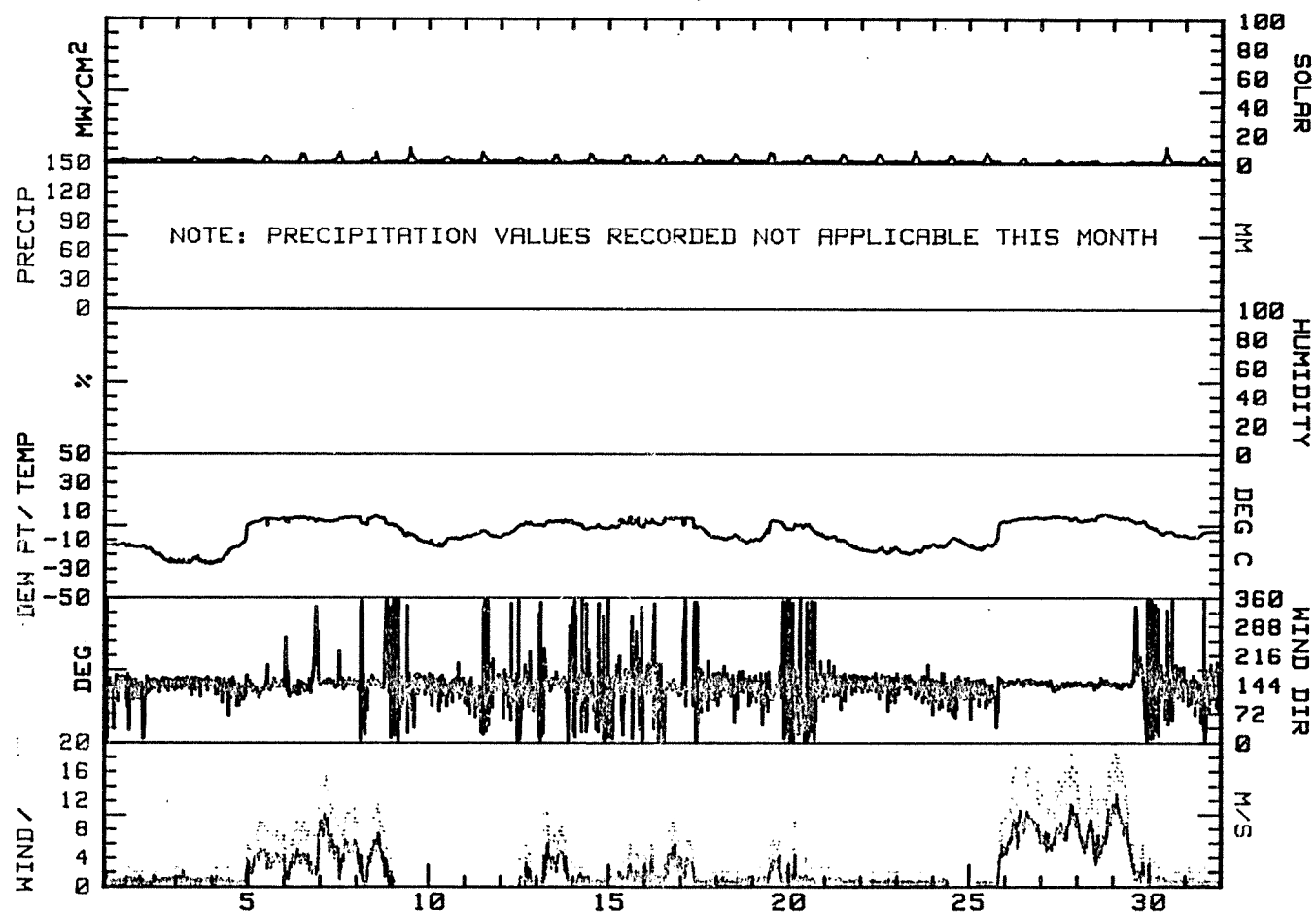
MONTHLY SUMMARY FOR EKLUTNA WEATHER STATION
DATA TAKEN DURING December, 1982

DAY	MAX. TEMP. DEG C	MIN. TEMP. DEG C	MEAN TEMP. DEG C	RES. WIND DIR. DEG	RES. WIND SPD. M/S	AVG. WIND SPD. M/S	MAX. GUST DIR. DEG	MAX. GUST SPD. M/S	P'VAL DIR.	MEAN RH %	MEAN DP DEG C	PRECIP MM	DAY'S SOLAR ENERGY WH/SQM	DAY
1	-12.6	-15.3	-14.0	131	.5	.7	356	3.2	SE	**	*****	****	348	1
2	-14.1	-26.1	-20.1	143	.6	.7	142	2.5	SSE	**	*****	****	340	2
3	-21.1	-27.0	-24.1	149	.8	.9	156	2.5	SSE	**	*****	****	338	3
4	1.0	-26.7	-12.9	138	.7	.7	138	5.7	SE	**	*****	****	335	4
5	5.1	-.2	2.5	138	3.6	3.7	117	8.9	SE	**	*****	****	200	5
6	6.0	1.8	3.9	144	2.8	3.3	157	12.7	SE	**	*****	****	273	6
7	6.0	2.4	4.2	148	5.6	5.7	149	15.2	SSE	**	*****	****	328	7
8	7.0	.1	3.6	144	2.3	3.2	145	11.4	SE	**	*****	****	315	8
9	.6	-12.3	-5.9	332M	.7M	.8M	273M	1.9M	N (M)	**	*****	****	468	9
10	-7.6	-15.0	-11.3	***	****	****	***	****	***	**	*****	****	405	10
11	-3.2	-8.4	-5.8	***	****	****	***	****	***	**	*****	****	450	11
12	2.8	-8.1	-2.7	142M	.7M	.9M	125M	5.7M	SE (M)	**	*****	****	338	12
13	4.2	-.6	1.8	146	2.1	2.6	085	10.2	SSE	**	*****	****	278	13
14	1.9	-2.8	-.5	109	.3	.8	327	2.5	ESE	**	*****	****	425	14
15	6.1	-1.7	2.2	146	.7	1.1	123	5.7	SSE	**	*****	****	410	15
16	5.9	.5	3.2	136	2.0	2.3	136	9.5	SE	**	*****	****	290	16
17	6.0	-8.6	-1.3	130	.9	1.4	136	6.3	SE	**	*****	****	360	17
18	-6.1	-12.6	-9.4	145	.6	.6	172	1.9	SE	**	*****	****	460	18
19	3.9	-10.9	-3.5	124	1.0	1.5	117	6.3	SE	**	*****	****	438	19
20	1.4	-8.5	-3.6	052	.4	1.0	128	8.9	NNE	**	*****	****	425	20
21	-7.0	-16.9	-12.0	149	.7	.7	203	2.5	SSE	**	*****	****	453	21
22	-14.6	-19.4	-17.0	149	.6	.6	162	1.9	SSE	**	*****	****	438	22
23	-12.4	-20.2	-16.3	144	.6	.6	117	1.9	SE	**	*****	****	443	23
24	-8.4	-15.2	-11.8	135M	.5M	.5M	155M	1.9M	SE (M)	**	*****	****	438	24
25	3.4	-17.0	-6.8	143M	1.3M	1.4M	145M	9.5M	SE (M)	**	*****	****	425	25
26	6.2	2.6	4.4	149	8.0	8.0	150	16.5	SSE	**	*****	****	143	26
27	6.8	3.5	5.2	142	7.5	7.5	146	18.4	SE	**	*****	****	120	27
28	7.9	2.7	5.3	145	7.0	7.0	140	19.7	SE	**	*****	****	188	28
29	6.2	-1.1	2.6	143	4.8	5.2	140	19.7	SE	**	*****	****	180	29
30	-.7	-7.5	-4.1	097	.3	.7	048	3.8	SE	**	*****	****	478	30
31	-3.2	-8.4	-5.8	123	.5	.6	155	2.5	ESE	**	*****	****	395	31
MONTH	7.9	-27.0	-4.8	143M	2.1M	2.4M	140M	19.7M	SE (M)	**	*****	****	10918	

GUST VEL. AT MAX. GUST MINUS 2 INTERVALS 16.5
GUST VEL. AT MAX. GUST MINUS 1 INTERVAL 14.6
GUST VEL. AT MAX. GUST PLUS 1 INTERVAL 17.1
GUST VEL. AT MAX. GUST PLUS 2 INTERVALS 14.6

NOTE: RELATIVE HUMIDITY READINGS ARE UNRELIABLE WHEN WIND SPEEDS ARE LESS THAN ONE METER PER SECOND. SUCH READINGS HAVE NOT BEEN INCLUDED IN THE DAILY OR MONTHLY MEAN FOR RELATIVE HUMIDITY AND DEW POINT.

R&M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT
EKLUTNA WEATHER STATION
December, 1982



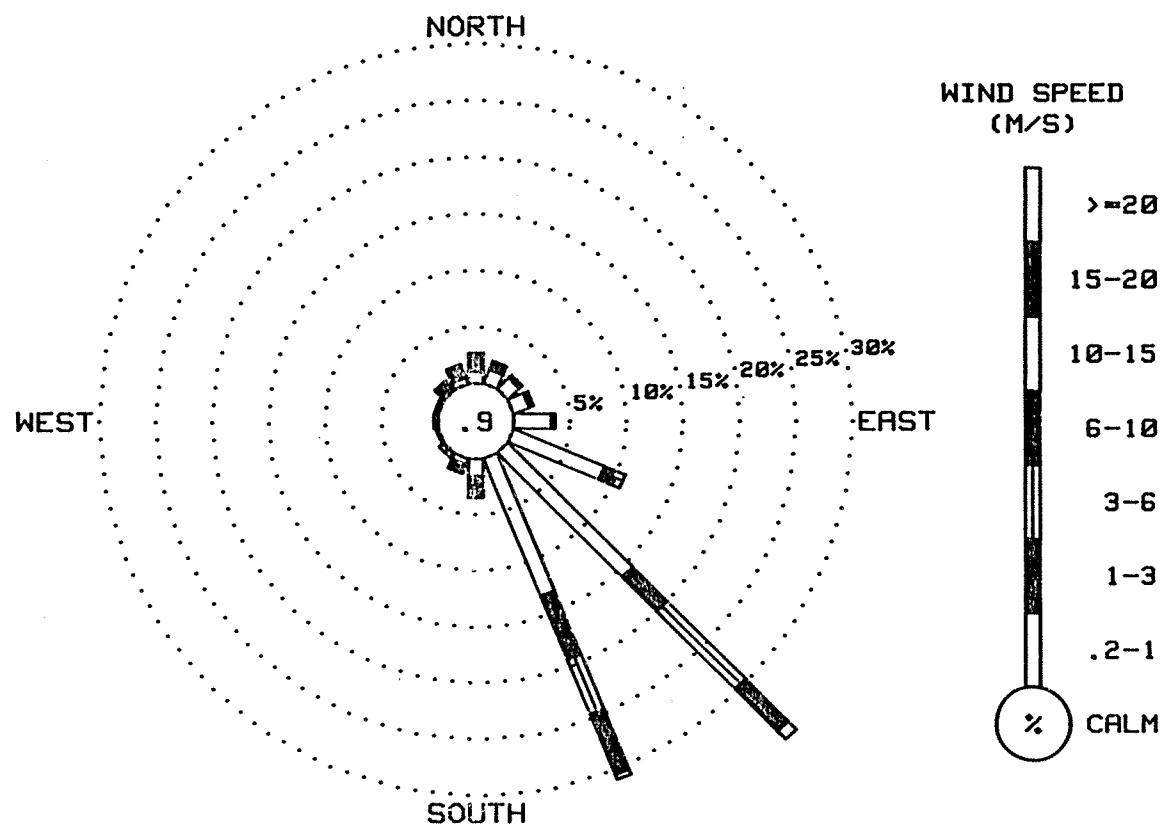
R & M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT

WIND FREQUENCY SUMMARY FOR EKLUTNA WEATHER STATION
DATA TAKEN DURING December, 1982

DIRECTION	VELOCITY (M/S)							TOTAL
	0.2 TO 1.0	1.0 TO 3.0	3.0 TO 6.0	6.0 TO 10.0	10.0 TO 15.0	15.0 TO 20.0	20.0 OR GREATER	
N	1.05	1.52	.12	0.00	0.00	0.00	0.00	2.69
NNE	1.36	.78	0.00	0.00	0.00	0.00	0.00	2.14
NE	1.44	.35	0.00	0.00	0.00	0.00	0.00	1.79
ENE	1.52	.39	0.00	0.00	0.00	0.00	0.00	1.91
E	3.35	.27	.04	0.00	0.00	0.00	0.00	3.66
ESE	8.73	.86	1.09	0.00	0.00	0.00	0.00	10.68
SE	15.63	4.25	9.82	5.22	1.05	0.00	0.00	35.98
SSE	13.22	6.08	5.30	5.77	.47	0.00	0.00	30.84
S	1.52	1.87	.08	0.00	0.00	0.00	0.00	3.47
SSW	.62	.78	.04	0.00	0.00	0.00	0.00	1.44
SW	.12	.47	0.00	0.00	0.00	0.00	0.00	.58
WSW	.04	.16	0.00	0.00	0.00	0.00	0.00	.19
W	.08	.31	0.00	0.00	0.00	0.00	0.00	.39
WNW	.08	.27	0.00	0.00	0.00	0.00	0.00	.35
NW	.27	.86	0.00	0.00	0.00	0.00	0.00	1.13
NNW	.62	1.09	.12	0.00	0.00	0.00	0.00	1.83
CALM								.90
TOTAL	49.67	20.31	16.61	10.99	1.52	0.00	0.00	100.00

NOTE: ALL FREQUENCIES ARE EXPRESSED IN PERCENT
2565 VALID WIND OBSERVATIONS USED TO DEVELOP FREQUENCY SUMMARY
2976 WIND OBSERVATIONS WOULD HAVE BEEN CORRECT FOR 15 MINUTE DATA.

R&M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT
EKLUTNA WEATHER STATION
December, 1982



No precipitation data for January

(See INTERPRETATION OF DATA).

R & M CONSULTANTS, INC.

SUSITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR EKLUTNA LAKE WEATHER STATION
DATA TAKEN DURING January, 1983

DAY 01

DAY 02

DAY 03

HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.								
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	TEMP.	POINT	RH	DIR.	SPD.	DIR.	TEMP.	POINT	RH	DIR.	SPD.								
	DEC C	DEC C	%	DEC.	M/S	DEC.		DEC C	DEC C	%	DEC.	M/S	DEC.	DEC C	DEC C	%	DEC.								
					M/S	MW						MW					MW								
0300	-2.6	*****		121	.5	066	1.9	1	0300	-2.6	*****	142	.7	154	1.9	1	0300	-6.6	*****		135	.5	144	1.9	1
0600	-3.3	*****		144	.2	351	2.5	1	0600	-3.7	*****	127	.6	128	2.5	1	0600	-6.9	*****		143	.4	137	1.9	1
0900	-3.1	*****		150	.4	148	1.9	1	0900	-3.8	*****	140	.6	095	1.9	1	0900	-6.4	*****		116	.4	125	1.9	2
1200	-2.5	*****		111	.2	162	1.9	4	1200	-3.6	*****	134	.3	171	1.3	6	1200	-5.2	*****		147	.3	189	1.3	5
1500	-2.2	*****		080	.2	314	1.9	1	1500	-3.0	*****	134	.5	143	3.2	1	1500	-5.1	*****		035	.3	015	1.9	1
1800	-2.4	*****		126	.4	169	1.9	1	1800	-4.1	*****	127	.4	140	1.9	1	1800	-5.4	*****		028	.1	145	1.3	1
2100	-2.6	*****		118	.2	174	1.3	1	2100	-3.9	*****	132	.5	144	1.9	1	2100	-5.8	*****		358	.6	354	1.9	1
2400	-2.7	*****		083	.3	100	1.3	1	2400	-5.5	*****	122	.6	125	1.9	1	2400	-6.0	*****		024	.2	023	1.3	1

DAY 04

DAY 05

DAY 06

HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	TEMP.	POINT	RH	DIR.	SPD.	DIR.	TEMP.	POINT	RH	DIR.	SPD.
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.	M/S	DEG.	DEG C	DEG C	%	DEG.	M/S
0300	-6.6	*****	135	.5	144	1.9	1	0300	-18.5	*****	133	.4	159	1.3	1	0300	-27.3
0600	-6.9	*****	143	.4	137	1.9	1	0600	-20.8	*****	146	.4	169	1.3	1	0600	-27.5
0900	-6.4	*****	116	.4	125	1.9	2	0900	-21.3	*****	146	.4	170	1.9	2	0900	-23.2
1200	-5.2	*****	147	.3	189	1.3	5	1200	-20.6	*****	111m	.3m	145m	1.3m	3	1200	-18.5
1500	-5.1	*****	035	.3	015	1.9	1	1500	-22.7	*****	***	***	***	***	1	1500	-17.7
1800	-5.4	*****	028	.1	145	1.3	1	1800	-23.7	*****	***	***	***	***	1	1800	-17.7
2100	-5.8	*****	358	.6	354	1.9	1	2100	-26.4	*****	***	***	***	***	1	2100	-17.7
2400	-6.0	*****	024	.2	023	1.3	1	2400	-26.8	*****	***	***	***	***	1	2400	-18.7

DAY 07

DAY 08

DAY 09

HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	TEMP.	POINT	RH	DIR.	SPD.	DIR.	TEMP.	POINT	RH	DIR.	SPD.
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.	M/S	DEG.	DEG C	DEG C	%	DEG.	M/S
0300	-19.0	*****	357	.7	352	2.5	1	0300	-30.9	*****	142	.4	154	1.9	1	0300	*****
0600	-19.0	*****	018	.4	000	1.9	1	0600	-31.1	*****	128	.4	147	1.3	1	0600	*****
0900	-19.4	*****	009	.5	002	1.9	1	0900	-32.2	*****	143	.5	156	1.9	1	0900	*****
1200	-20.1	*****	059	.2	026	1.3	3	1200	-29.5	*****	135	.4	155	1.9	3	1200	*****
1500	-19.9	*****	040	.3	006	1.9	1	1500	-30.3	*****	120m	.2m	117m	.6m	1500	*****	
1800	-20.4	*****	000	.4	347	1.9	1	1800	*****	*****	***	***	***	***	1800	*****	
2100	-25.8	*****	018	.2	356	1.3	1	2100	*****	*****	***	***	***	***	2100	*****	
2400	-28.7	*****	141	.4	154	1.3	1	2400	*****	*****	***	***	***	***	2400	*****	

R & M CONSULTANTS, INC.
SUSTITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR EKLUTNA LAKE WEATHER STATION
DATA TAKEN DURING January, 1983

DAY 10

DAY 11

DAY 12

HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.		
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.		
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	
0300	*****	*****	**	***	***	350m 1.3m	0300	*****	*****	**	***	***	***	0300	-28.4	*****	69	143	.6	128	
0600	*****	*****	**	***	***	***	0600	*****	*****	**	***	***	***	0600	-29.1	*****	69	146	.6	148	
0900	*****	*****	**	***	***	***	0900	*****	*****	**	***	***	***	0900	-22.9	*****	73	129	.4	154	
1200	*****	*****	**	***	***	***	1200	*****	*****	**	***	***	***	1200	-26.6	*****	73	036	.2	355	
1500	*****	*****	**	***	***	***	1500	*****	*****	**	***	***	***	1500	-23.2	*****	73	054	.2	029	
1800	*****	*****	**	***	***	***	1800	-24.8	*****	72	150m	.5m	073m 1.9m	1800	-24.9	*****	72	140	.5	164	
2100	*****	*****	**	***	***	***	2100	-27.3	*****	71	140	.4	135 1.3	1	2100	-23.9	*****	73	128	.4	151
2400	*****	*****	**	***	***	***	2400	-26.0	*****	71	135	.4	140 1.9	1	2400	-26.4	*****	72	136	.5	143

DAY 13

DAY 14

DAY 15

HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.							
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.							
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S						
0300	-25.8	*****	71	126	.3	137	1.3	1	0300	-19.4	*****	75	112	.2	147	1.9	1	0300	-13.1	*****	80	114	.4	117	1.3	1
0600	-26.2	*****	71	135	.4	174	1.9	1	0600	-21.4	*****	75	135	.4	151	1.9	1	0600	-12.3	*****	79	108	.5	129	1.9	0
0900	-27.4	*****	70	132	.4	118	1.3	1	0900	-19.4	*****	76	125	.4	075	1.3	1	0900	-10.9	*****	79	073	.8	051	3.2	1
1200	-24.0	*****	73	121	.4	111	1.9	8	1200	-15.9	*****	75	130	.3	133	1.9	9	1200	-9.6	*****	79	099	.3	116	1.9	4
1500	-22.2	*****	73	078	.4	140	1.3	1	1500	-16.4	*****	76	083	.2	027	1.3	1	1500	-6.3	-9.2	80	123	.7	148	3.2	1
1800	-24.7	*****	72	121	.3	168	1.9	1	1800	-16.7	*****	77	139	.4	128	1.3	1	1800	-6.1	*****	83	103	.5	091	1.9	1
2100	-21.0	*****	74	114	.3	124	1.3	1	2100	-17.2	*****	77	121	.5	168	1.9	1	2100	-3.0	*****	93	150	.8	136	3.2	0
2400	-18.4	*****	76	102	.2	014	1.3	1	2400	-13.9	*****	78	092	.4	112	1.9	0	2400	.9	-9.9	88	050	1.0	059	3.8	0

DAY 16

DAY 17

DAY 18

HOUR	DEW								WIND	WIND	GUST	MAX.	HOUR	DEW								WIND	WIND	GUST	MAX.	
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD
	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW
0300	2.1	-1.5	77	071	1.3	059	7.0	1	0300	-4.6	*****	98	068	.2	155	1.3	1	0300	-5.8	*****	94	100	.4	145	1.9	0
0600	.4	-.8	92	349	1.0	324	4.4	1	0600	-5.4	*****	96	138	.2	157	1.3	1	0600	-4.8	*****	96	122	.5	052	1.9	1
0900	0.0	*****	97	149	.5	230	2.5	1	0900	-5.1	*****	95	101	.1	353	.6	1	0900	-1.6	-1.9	98	136	.6	130	1.9	1
1200	.4	*****	95	139	.4	127	1.9	4	1200	-4.2	*****	88	135	.1	093	.6	4	1200	.8	.5	98	149	1.1	147	2.5	2
1500	-.2	*****	97	156	.4	197	2.5	1	1500	-8.3	*****	93	143	.2	132	1.3	1	1500	2.7	1.0	89	162	1.7	174	5.7	1
1800	-1.5	-3.1	89	342	.6	339	4.4	0	1800	-8.6	*****	92	077	.3	047	1.3	0	1800	3.4	1.1	85	156	.9	148	6.3	0
2100	-3.0	*****	93	005	1.3	343	5.1	1	2100	-8.1	*****	92	139	.2	111	1.3	1	2100	3.0	-.4	78	155	2.0	144	6.3	1
2400	-3.6	*****	96	135	.2	009	1.3	1	2400	-6.7	*****	92	112	.2	105	1.3	0	2400	3.2	*****	76	183	1.6	138	6.3	1

R & M CONSULTANTS, INC.

SUSITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR EKLUTNA LAKE WEATHER STATION
DATA TAKEN DURING January, 1983

DAY 19

DAY 20

DAY 21

HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.																		
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	
	DEC C	DEC C	%	DEG.	M/S	DEG.		DEC C	DEC C	%	DEG.	M/S	DEC.	M/S		DEC C	DEC C	%	DEG.	M/S	DEC.		DEC C	DEC C	%	DEG.	M/S	DEC.		DEC C	DEC C	%	DEG.	M/S	DEC.
0300	-1.9	-3.6	88	043	1.1	353	7.0	1	0300	1.9	-7.2	51	140	3.9	123	7.6	1	0300	-4.4	-11.2	59	305	1.1	305	3.8	1	0300	-4.4	-11.2	59	305	1.1	305	3.8	1
0600	-3.7	-4.8	92	001	3.2	010	6.3	0	0600	.6	*****	57	131	2.4	122	6.3	0	0600	4.5	-13.9	25	013	1.0	108	7.6	2	0600	4.5	-13.9	25	013	1.0	108	7.6	2
0900	-4.6	*****	93	353	1.6	007	3.8	1	0900	2.6	-7.4	48	144	2.9	143	7.0	1	0900	5.6	-15.1	21	141	4.5	139	8.9	3	0900	5.6	-15.1	21	141	4.5	139	8.9	3
1200	-3.7	*****	81	348	.9	356	3.2	16	1200	2.9	-9.5	40	146	3.4	149	7.0	13	1200	5.7	-15.0	21	145	4.6	142	10.9	15	1200	5.7	-15.0	21	145	4.6	142	10.9	15
1500	-1.4	-8.8	53	124	.9	141	6.3	2	1500	2.6	-11.8	34	139	2.5	144	7.6	3	1500	5.3	-15.3	21	139	2.8	134	7.6	3	1500	5.3	-15.3	21	139	2.8	134	7.6	3
1800	.9	-7.6	53	156	3.9	150	7.6	0	1800	-2.6	-8.4	64	027	.3	154	4.4	1	1800	-2.6	-11.4	51	146	1.5	151	8.9	1	1800	-2.6	-11.4	51	146	1.5	151	8.9	1
2100	2.4	-6.5	52	151	4.6	153	8.3	1	2100	-4.1	-10.1	63	336	1.4	326	3.8	0	2100	-7.1	*****	62	003	.4	287	4.4	1	2100	-7.1	*****	62	003	.4	287	4.4	1
2400	2.7	-6.5	51	147	3.8	150	7.6	1	2400	-4.1	-9.9	64	329	1.6	314	4.4	1	2400	-8.7	*****	66	137	.9	043	2.5	1	2400	-8.7	*****	66	137	.9	043	2.5	1

DAY 22

DAY 23

DAY 24

HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.							
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.						
	DEC C	DEC C	%	DEG.	M/S	DEG.		DEC C	DEC C	%	DEG.	M/S	DEG.		DEC C	DEC C	%	DEG.	M/S	DEG.						
					M/S	MW						M/S	MW						M/S	MW						
0300	-11.3	*****	76	099	.8	070	3.2	0	0300	-18.9	*****	82	128	.5	167	1.9	1	0300	-18.2	*****	82	154	.9	159	3.2	0
0600	-14.6	*****	83	161	.8	154	2.5	1	0600	-19.7	*****	81	144	.6	121	1.9	1	0600	-18.8	*****	82	139	.6	151	1.9	0
0900	-16.0	*****	84	144	.8	172	3.2	2	0900	-19.4	*****	91	151	.6	155	1.9	2	0900	-15.0	*****	93	149	.6	103	1.9	2
1200	-12.0	*****	70	143	.5	168	1.9	21	1200	-14.2	*****	90	122	.4	159	1.9	20	1200	-9.2	*****	86	151	.5	078	2.5	6
1500	-13.4	*****	79	108	.4	041	1.9	3	1500	-14.7	-17.1	82	081	.5	051	1.9	3	1500	-7.6	*****	88	110	.4	128	1.9	2
1800	-16.3	*****	83	152	.5	180	1.9	1	1800	-17.1	*****	82	144	.6	148	1.9	1	1800	-9.6	*****	90	144	.7	118	2.5	1
2100	-18.5	*****	82	156	.6	158	2.5	0	2100	-16.8	*****	82	153	.8	158	2.5	1	2100	-11.0	*****	89	148	.6	153	2.5	0
2400	-18.1	-20.4	82	158	.8	170	2.5	0	2400	-19.1	*****	92	141	.8	147	2.5	1	2400	-8.4	*****	90	136	.7	148	1.9	1

DAY 25

DAY 26

DAY 27

HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.							
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.						
	DEG C	DEG C	%	DEG.	M/S	DEG.		DEG C	DEG C	%	DEG.	M/S	DEG.		DEG C	DEG C	%	DEG.	M/S	DEG.						
0300	-7.9	*****	91	152	.7	173	1.9	0	0300	-7.5	*****	91	143	.5	174	1.9	1	0300	0.0	*****	95	134	.9	117	2.5	1
0600	-8.7	*****	91	146	.6	126	2.5	1	0600	-5.7	*****	90	100	.5	105	1.9	1	0600	-2.2	*****	4	135	.5	066	1.9	0
0900	-11.1	-12.6	89	124	.5	174	1.9	2	0900	-1.5	-2.1	96	095	.5	357	3.2	1	0900	-4.6	*****	1	140	.3	146	1.9	3
1200	-8.2	-10.1	86	149	.7	172	2.5	10	1200	5.7	2.4	79	144	1.3	161	7.6	6	1200	-1.9	*****	93	139	.3	313	1.3	13
1500	-9.3	*****	88	134	.6	165	2.5	2	1500	4.4	1.4	81	150	4.8	143	8.9	3	1500	-2.6	*****	96	127	.3	102	1.9	3
1800	-9.5	*****	89	126	.7	040	2.5	0	1800	7.5	.0	59	149	2.8	153	7.0	1	1800	-4.0	*****	99	140	.9	147	2.5	0
2100	-7.5	*****	91	146	.7	126	1.9	1	2100	3.5	-.7	74	161	2.0	132	7.0	1	2100	-5.2	*****	0	152	.5	109	1.9	0
2400	-7.9	*****	91	149	.6	141	2.5	0	2400	1.8	.0	89	093	.3	064	5.1	0	2400	-6.0	*****	99	112	.6	157	1.9	1

R & M CONSULTANTS, INC.

SUSTITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR EKLUTNA LAKE WEATHER STATION
DATA TAKEN DURING January, 1983

DAY 28

DAY 29

DAY 30

HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW	
0300	-3.9	*****	99	157	.8	183	2.5	0	0300	-13.4	*****	91	138	.3	125	1.3	0
0600	-4.9	*****	0	153	.7	166	2.5	1	0600	-14.3	*****	91	145	.4	146	1.3	0
0900	-6.3	*****	98	121	.5	178	1.9	2	0900	-14.1	*****	91	130	.4	142	1.3	2
1200	-3.4	*****	88	118	.4	164	1.9	22	1200	-10.1	-11.2	92	146	.5	157	1.3	16
1500	-5.3	*****	95	143	.6	138	1.9	3	1500	-11.0	*****	92	088	.1	330	1.3	3
1800	-9.0	*****	96	143	.5	165	1.9	1	1800	-14.2	*****	90	147	.5	151	1.9	0
2100	-11.1	*****	94	146	.6	171	1.9	0	2100	-15.3	*****	91	138	.3	160	1.9	0
2400	-12.9	*****	92	136	.3	128	1.3	0	2400	-14.1	*****	90	139	.4	161	1.3	0
0300	-13.9	*****	91	136	.5	126	1.9	0	0300	-13.9	*****	91	136	.5	126	1.9	0
0600	-13.4	*****	91	142	.5	140	1.9	1	0600	-13.4	*****	91	142	.5	140	1.9	1
0900	-9.2	*****	93	100	.2	352	1.9	1	0900	-9.2	*****	93	100	.2	352	1.9	1
1200	-4.0	*****	95	149	.6	182	1.9	8	1200	-4.0	*****	95	149	.6	182	1.9	8
1500	-2.8	-3.8	93	091	.6	033	3.2	3	1500	-2.8	-3.8	93	091	.6	033	3.2	3
1800	-4.2	-5.2	93	010	1.0	343	3.8	1	1800	-4.2	-5.2	93	010	1.0	343	3.8	1
2100	-1.4	-2.7	91	051	.5	009	3.9	0	2100	-1.4	-2.7	91	051	.5	009	3.9	0
2400	.1	-1.4	90	321	1.0	293	2.5	0	2400	.1	-1.4	90	321	1.0	293	2.5	0

DAY 31

HOOR	DEW	WIND	WIND	GUST	MAX.			
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD
	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW
0300	4.6	.6	75	145	2.9	147	10.2	0
0600	3.9	1.3	83	139	5.4	144	9.5	1
0900	6.0	-5	63	143	4.8	138	9.5	2
1200	5.9	-1	65	153	2.6	157	8.3	7
1500	4.3	.1	74	187	.9	144	6.3	3
1800	3.6	.1	78	310	.4	335	2.5	0
2100	2.7	*****	97	135	.7	161	5.7	0
2400	1.6	*****	3	061	.5	326	1.9	0

R & M CONSULTANTS, INC.

SUSITNA HYDROELECTRIC PROJECT

MONTHLY SUMMARY FOR EKLUTNA LAKE WEATHER STATION
DATA TAKEN DURING January, 1983

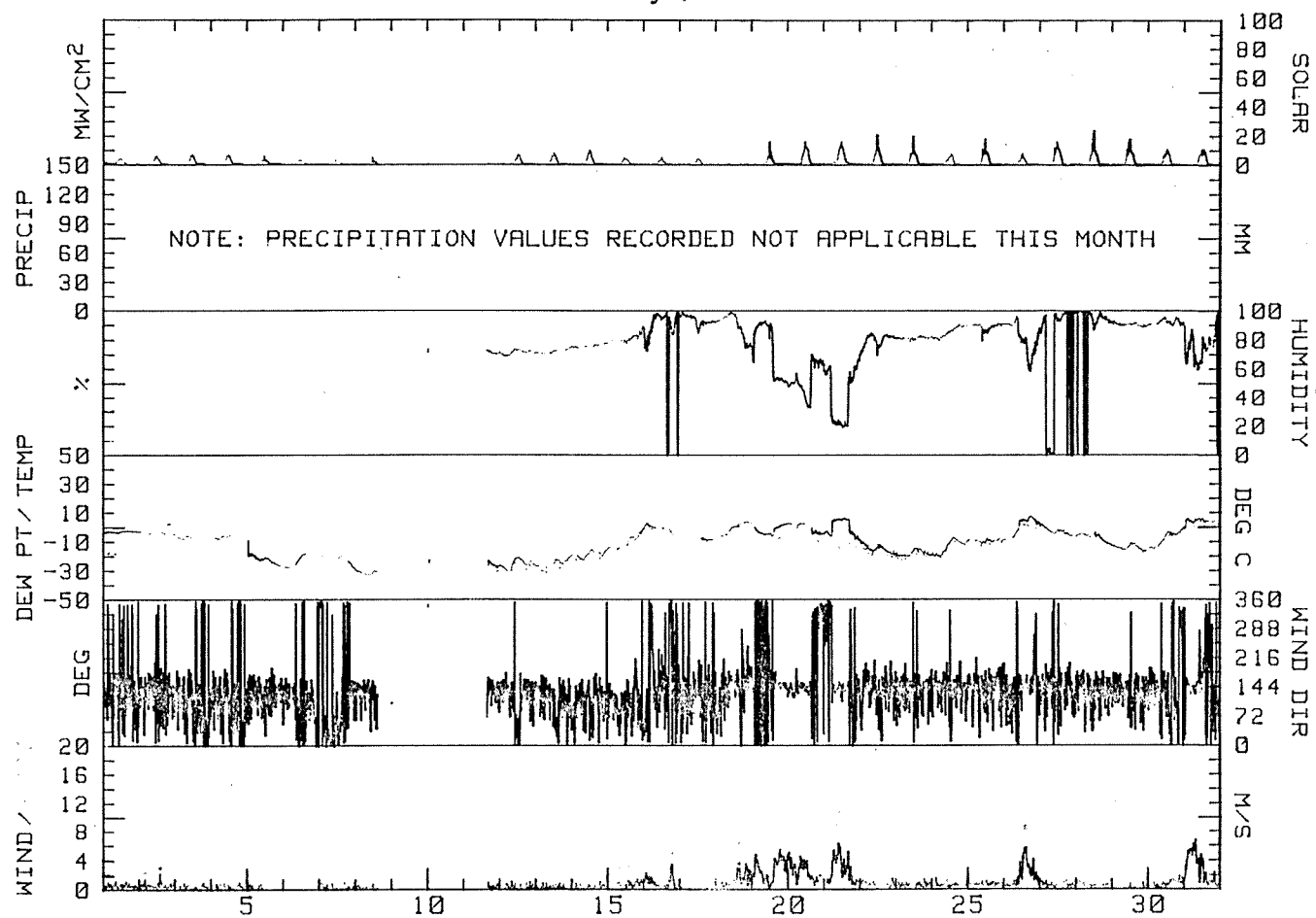
DAY	MAX. TEMP. DEG C	MIN. TEMP. DEG C	MEAN TEMP. DEG C	RES. WIND DIR. DEG	RES. WIND SPD. M/S	AVG. WIND SPD. M/S	MAX. GUST DIR. DEG	MAX. GUST SPD. M/S	P'VAL	MEAN RH %	MEAN DP DEG C	PRECIP MM	DAY'S SOLAR ENERGY WH/SQ M	DAY
1	-1.9	-3.5	-2.7	119	.3	.6	351	2.5	SSE			****	373	1
2	-2.3	-5.5	-3.9	133	.5	.7	143	3.2	SE			****	398	2
3	-5.0	-7.9	-6.5	090	.2	.5	144	1.9	SE			****	413	3
4	-5.0	-7.9	-6.5	090	.2	.5	144	1.9	SE			****	413	4
5	-17.2	-26.8	-22.0	139M	.4M	.4M	170M	1.9M	SSE(M)			****	343	5
6	-17.3	-28.0	-22.7	003M	.9M	.9M	000M	2.5M	N (M)			****	318	6
7	-18.6	-29.1	-23.9	021	.3	.5	352	2.5	N			****	313	7
8	-29.4M	-32.6M	-31.0M	136M	.4M	.4M	154M	1.9M	SE(M)			****	329M	8
9	-32.1M	-32.1M	-32.1M	107M	.2M	.2M	107M	.6M	ESE(M)**	****	****	****	4M	9
10	-22.2M	-26.4M	-24.3M	350M	.2M	.2M	350M	1.3M	N (M)**	****	****	****	240M	10
11	-22.4M	-27.8M	-25.1M	142M	.5M	.5M	073M	1.9M	SSE(M)72M	-29.0M	****	****	213M	11
12	-20.2	-29.5	-24.9	130	.4	.5	154	2.5	SSE	73	-27.3	****	393	12
13	-18.4	-27.8	-23.1	118	.3	.4	174	1.9	SE	72	-29.7	****	418	13
14	-13.9	-22.3	-18.1	120	.3	.4	147	1.9	ESE	77	-21.6	****	460	14
15	.9	-13.6	-6.4	100	.5	.8	059	3.8	ESE	82	-8.0	****	293	15
16	3.3	-3.9	-3	042	.3	1.0	059	7.0	SE			****	258	16
17	-3.4	-9.2	-6.3	114	.2	.3	155	1.3	SSE	**	****	****	250	17
18	4.2	-6.7	-1.3	156	1.0	1.3	148	6.3	SE	87	.2	****	188	18
19	3.7	-5.9	-1.1	125	1.1	2.8	153	8.3	SSE	71	-5.9	****	428	19
20	3.4	-4.9	-.8	136	1.5	2.5	123	7.6	SE	52	-8.6	****	598	20
21	6.2	-9.0	-1.4	139	1.5	2.6	142	10.8	SE	39	-13.2	****	775	21
22	-9.4	-18.9	-14.2	142	.6	.8	070	3.2	SSE	78	-16.8	****	649	22
23	-14.1	-20.2	-17.2	136	.6	.7	158	2.5	SSE	82	-19.8	****	595	23
24	-6.7	-20.5	-13.6	142	.6	.7	159	3.2	SSE	94	-16.3	****	398	24
25	-7.3	-11.1	-9.2	141	.6	.8	126	2.5	SSE	89	-10.2	****	568	25
26	7.7	-8.1	-.2	146	1.5	2.0	143	8.9	SSE	78	.1	****	383	26
27	2.6	-6.0	-1.7	135	.6	.7	117	2.5	SSE			****	660	27
28	-3.1	-12.9	-8.0	142	.5	.6	183	2.5	SSE			****	695	28
29	-10.1	-16.2	-13.2	139	.4	.4	151	1.9	SE	91	-14.1	****	660	29
30	.9	-14.2	-6.7	062	.2	.9	343	3.8	ESE	92	-4.6	****	515	30
31	6.4	0.0	3.2	144	2.1	2.8	147	10.2	SE			****	558	31
MONTH	7.7M	-32.6M	-11.8M	133M	.6M	1.0M	142M	10.9M	SE(M)	61M	-16.5M	****	13185M	

GUST VEL. AT MAX. GUST MINUS 2 INTERVALS 6.3
GUST VEL. AT MAX. GUST MINUS 1 INTERVAL 7.6
GUST VEL. AT MAX. GUST PLUS 1 INTERVAL 10.2
GUST VEL. AT MAX. GUST PLUS 2 INTERVALS 8.3

NOTE: RELATIVE HUMIDITY READINGS ARE UNRELIABLE WHEN WIND SPEEDS ARE LESS THAN ONE METER PER SECOND. SUCH READINGS HAVE NOT BEEN INCLUDED IN THE DAILY OR MONTHLY MEAN FOR RELATIVE HUMIDITY AND DEW POINT.

**** SEE NOTES AT THE BACK OF THIS REPORT ****

R&M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT
EKLUTNA LAKE WEATHER STATION
January, 1983



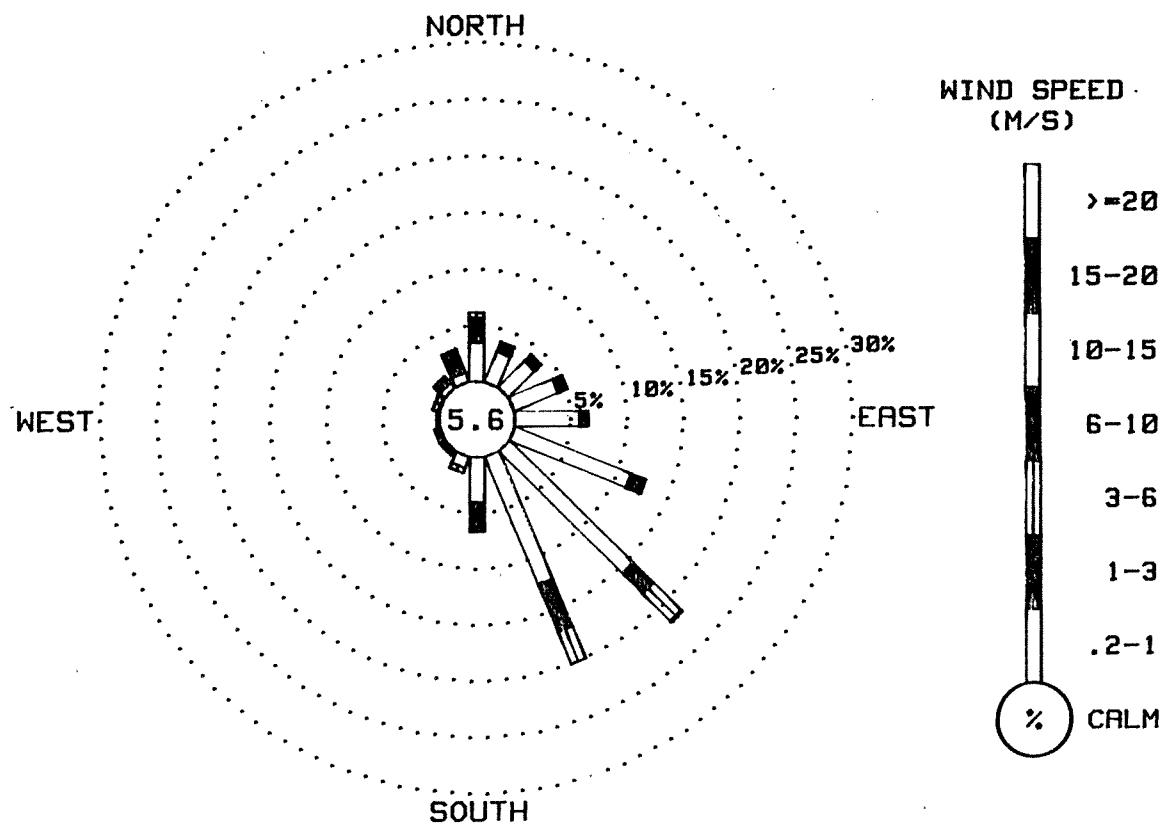
R & M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT

WIND FREQUENCY SUMMARY FOR EKLUTNA LAKE WEATHER STATION
DATA TAKEN DURING January, 1983

DIRECTION	VELOCITY (M/S)							TOTAL
	0.2 TO 1.0	1.0 TO 3.0	3.0 TO 6.0	6.0 TO 10.0	10.0 TO 15.0	15.0 TO 20.0	20.0 OR GREATER	
N	3.50	2.12	.47	0.00	0.00	0.00	0.00	6.09
NNE	2.95	.79	.08	0.00	0.00	0.00	0.00	3.91
NE	3.34	.75	0.00	0.00	0.00	0.00	0.00	4.09
ENE	4.25	.83	0.00	0.00	0.00	0.00	0.00	5.07
E	5.78	.75	0.00	0.00	0.00	0.00	0.00	6.53
ESE	11.16	1.22	.20	0.00	0.00	0.00	0.00	12.58
SE	15.45	2.52	3.50	.16	0.00	0.00	0.00	21.63
SSE	12.34	4.52	3.14	0.00	0.00	0.00	0.00	20.01
S	4.05	2.32	.24	0.00	0.00	0.00	0.00	6.60
SSW	1.06	.47	0.00	0.00	0.00	0.00	0.00	1.53
SW	.24	.28	0.00	0.00	0.00	0.00	0.00	.51
WSW	.16	.31	0.00	0.00	0.00	0.00	0.00	.47
W	.04	.20	0.00	0.00	0.00	0.00	0.00	.24
WNW	.12	.51	.04	0.00	0.00	0.00	0.00	.67
NW	.63	.79	0.00	0.00	0.00	0.00	0.00	1.42
NNW	.90	2.16	.08	0.00	0.00	0.00	0.00	3.14
CALM								5.62
TOTAL	65.96	20.52	7.74	.16	0.00	0.00	0.00	100.00

NOTE: ALL FREQUENCIES ARE EXPRESSED IN PERCENT
2544 VALID WIND OBSERVATIONS USED TO DEVELOP FREQUENCY SUMMARY

R&M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT
EKLUTNA LAKE WEATHER STATION
January, 1983



WIND ROSE PLOT

No precipitation data for February

(See INTERPRETATION OF DATA).

R & M CONSULTANTS, INC.

SUSITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR EKLUTNA LAKE WEATHER STATION
DATA TAKEN DURING February, 1983

DAY 01

DAY 02

DAY 03

HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.	
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S
0300	1.0	*****	7	087	.7	011	2.5	1	0300	4.6	.2	73	135	2.2	129	7.0	1	0300	3.5	-1.2
0600	4.2	2.8	91	159	1.4	178	4.4	0	0600	2.8	.7	86	151	3.5	144	8.9	1	0600	3.8	-3.5
0900	6.3	-1.6	61	155	5.5	158	11.4	3	0900	4.2	-2.2	73	146	1.1	160	7.6	1	0900	.5	-3.2
1200	7.0	-1.7	54	160	3.5	147	10.8	15	1200	4.4	-1.6	70	151	3.7	148	8.9	13	1200	2.6	*****
1500	6.0	-2.9	53	131	2.2	122	7.0	6	1500	5.2	-2.4	58	154	5.1	158	10.2	3	1500	3.4	-1.7
1800	1.6	*****	71	039	.4	003	2.5	1	1800	2.6	-1.0	77	146	3.2	144	11.4	0	1800	2.0	-2.5
2100	1.3	-42.5	1	153	1.1	100	3.8	1	2100	4.5	-2.6	60	152	1.2	255	8.9	1	2100	.5	-2.7
2400	.6	*****	5	092	.3	033	2.5	0	2400	3.6	-1.9	67	144	4.0	152	8.3	1	2400	.4	*****

DAY 04

DAY 05

DAY 06

DEW WIND WIND GUST MAX.									DEW WIND WIND GUST MAX.									DEW WIND WIND GUST MAX.														
HOUR	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	MAX.	RAD	HOUR	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	MAX.	RAD	HOUR	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	MAX.	RAD
		DEG C	DEG C	%	DEG.	M/S		DEG.	M/S	MW			DEG C	DEG C	%	DEG.	M/S		DEG.	M/S	MW			DEG C	DEG C	%	DEG.	M/S		DEG.	M/S	MW
0300		.9	-40.3	2	029	.7	351	3.2		1	0300		.1	*****	93	109	.8	099	2.5		1	0300		-2.8	*****	2	144	.5	159	1.9	1	
0600		2.5	.1	84	227	.9	174	3.2		1	0600		2.0	-.4	84	151	.7	164	2.5		1	0600		-1.7	*****	1	115	.3	145	1.9	1	
0900		4.1	-1.4	67	152	4.5	159	11.4		3	0900		3.5	.5	81	161	2.9	158	6.3		3	0900		-1.4	*****	5	104	.2	350	1.3	1	
1200		4.5	-3.5	56	158	4.0	153	9.5		12	1200		3.4	-.2	77	152	3.6	155	8.3		12	1200		-.1	*****	94	028	.2	035	1.3	5	
1500		4.2	*****	60	127	.9	143	5.1		6	1500		2.5	-.8	79	172	2.6	149	6.3		7	1500		-1.5	*****	96	355	.6	011	1.9	2	
1800		2.6	-1.7	73	128	.6	045	1.9		1	1800		0.0	*****	96	008	1.4	000	5.1		0	1800		-2.2	*****	0	005	.5	049	1.9	1	
2100		.7	-40.5	2	144	.7	137	1.9		1	2100		-2.4	*****	3	140	.4	262	1.3		0	2100		-2.1	*****	4	323	.1	344	1.3	1	
2400		-.7	-41.4	2	008	.7	353	3.8		1	2400		-3.2	*****	3	143	.4	189	1.9		1	2400		-2.5	*****	3	007M	.3M	005M	1.9M	1	

DAY 07

DAY 08

DAY 09

HOUR								DEW								WIND WIND GUST MAX.								HOUR								DEW								WIND WIND GUST MAX.															
NDNG		TEMP.		POINT		RH		DIR.		SPD.		DIR.		GUST		RAD		NDNG		TEMP.		POINT		RH		DIR.		SPD.		DIR.		GUST		RAD																					
		DEG C		DEG C		%		DEG.		M/S		DEG.		M/S		MW				DEG C		DEG C		%		DEG.		M/S		DEG.		M/S		MW																					
0300								-3.6 ***** 5 *** **** ** *								1 0300								-4.9 ***** 5 *** **** ** *								0 0300								-9.0 ***** 99 *** **** ** *								0							
0600								-3.3 ***** 4 *** **** ** *								0 0600								-4.8 ***** 4 *** **** ** *								1 0600								-15.9 ***** 92 *** **** ** *								0							
0900								-3.8 -4.7 94 143M .7M 162M 2.5M								1 0900								-4.7 ***** 0 *** **** ** *								1 0900								-17.8 ***** 89 *** **** ** *								2							
1200								-2.4 ***** 84 162 .7 140 1.9								6 1200								-2.5 ***** 84 *** **** ** *								4 1200								-12.1 ***** 72 302M .2M 297M 1.3M								15							
1500								-3.3 ***** 84 158 .7 140 1.9								2 1500								-3.5 -6.3 81 160M 1.0M 169M 2.5M								2 1500								-13.8 ***** 83 324M .3M 323M 1.3M								3							
1800								-4.2 ***** 97 142 .3 134 1.3								1 1800								-4.8 ***** 88 156 .9 175 1.9								0 1800								-19.4 ***** 85 *** **** ** *								0							
2100								-4.2 ***** 2 123M .1M 153M 1.3M								1 2100								-6.2 ***** 96 045 .3 015 1.9								0 2100								-22.0 ***** 83 *** **** ** *								1							
2400								-4.3 ***** 2 *** **** ** *								0 2400								-7.2 ***** 1 305M .2M 295M .6M								1 2400								***** ***** ** *** **** ** *								***							

R & M CONSULTANTS, INC.

SUSITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR EKLUTNA LAKE WEATHER STATION
DATA TAKEN DURING February, 1983

DAY 10

DAY 11

DAY 12

HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	TEMP.	POINT	RH	DIR.	SPD.	DIR.	TEMP.	POINT	RH	DIR.	SPD.	
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.	M/S	DEG.	DEG C	DEG C	%	DEG.	M/S	
0300	*****	*****	**	***	****	***	*****	*****	**	***	****	***	0300	*****	*****	**	***	****
0600	*****	*****	**	***	****	***	*****	*****	**	***	****	***	0600	*****	*****	**	***	****
0900	*****	*****	**	***	****	***	*****	*****	**	***	****	***	0900	*****	*****	**	***	****
1200	*****	*****	**	***	****	***	*****	*****	**	***	****	***	1200	*****	*****	**	***	****
1500	*****	*****	**	***	****	***	*****	*****	**	***	****	***	1500	*****	*****	**	***	****
1800	*****	*****	**	***	****	***	*****	*****	**	***	****	***	1800	*****	*****	**	***	****
2100	*****	*****	**	***	****	***	*****	*****	**	***	****	***	2100	*****	*****	**	***	****
2400	*****	*****	**	***	****	***	*****	*****	**	***	****	***	2400	*****	*****	**	***	****

DAY 13

DAY 14

DAY 15

HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.	M/S	DEG.	DEG C	DEG C	%	DEG.	M/S	
0300	*****	*****	**	***	****	***	*****	*****	**	***	****	***	0300	*****	*****	**	***	****
0600	*****	*****	**	***	****	***	*****	*****	**	***	****	***	0600	*****	*****	**	***	****
0900	*****	*****	**	***	****	***	*****	*****	**	***	****	***	0900	*****	*****	**	***	****
1200	*****	*****	**	***	****	***	*****	*****	**	***	****	***	1200	*****	*****	**	***	****
1500	*****	*****	**	***	****	***	*****	*****	**	***	****	***	1500	*****	*****	**	***	****
1800	*****	*****	**	***	****	***	*****	*****	**	***	****	***	1800	*****	*****	**	***	****
2100	*****	*****	**	***	****	***	*****	*****	**	***	****	***	2100	*****	*****	**	***	****
2400	*****	*****	**	***	****	***	*****	*****	**	***	****	***	2400	*****	*****	**	***	****

DAY 16

DAY 17

DAY 18

HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.						
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.						
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.	M/S	DEG.	DEG C	DEG C	%	DEG.	M/S						
0300	*****	*****	**	***	****	***	*****	*****	**	***	****	***	0300	*****	*****	**	***	****					
0600	*****	*****	**	***	****	***	*****	*****	**	***	****	***	0600	*****	*****	**	***	****					
0900	*****	*****	**	***	****	***	*****	*****	**	***	****	***	0900	*****	*****	**	***	****					
1200	*****	*****	**	***	****	***	*****	*****	**	***	****	***	1200	*****	*****	**	***	****					
1500	*****	*****	**	***	****	***	*****	*****	**	***	****	***	1500	*****	*****	**	***	****					
1800	*****	*****	**	***	****	***	*****	*****	**	095M	.2M	012M	1.3M	2	1800	-8.5	-11.5	79	021M	.9M	029M	2.5M	1
2100	*****	*****	**	***	****	***	-22.9	*****	79	143M	.3M	259M	1.9M	1	2100	-11.6	*****	88	324	.6	313	2.5	1
2400	*****	*****	**	***	****	***	*****	*****	**	***	****	162	1.3	***	2400	-7.3	-8.5	91	131	.4	176	3.2	1

R & M CONSULTANTS, INC.

SUSITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR EKLUTNA LAKE WEATHER STATION
DATA TAKEN DURING February, 1983

DAY 19

DAY 20

DAY 21

HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	TEMP.	POINT	RH	DIR.	SPD.	DIR.	TEMP.	POINT	RH	DIR.	SPD.
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.	M/S	DEG.	DEG C	DEG C	%	DEG.	M/S
0300	2.0	-1.3	79	149	.3	334	7.6	1	0300	-6.7	*****	94	127	.5	149	1.9	1
0600	2.7	-2.6	68	133	3.4	125	8.3	1	0600	-3.8	-45.9	1	145	.6	166	1.9	0
0900	2.0	-4.3	63	152	1.0	141	6.3	7	0900	-3.6	*****	0	019	.7	085	3.2	5
1200	-4.4	*****	74	334	.4	266	2.5	17	1200	.4	-2.2	83	338	1.5	002	4.4	22
1500	-2.7	*****	68	021	.1	043	1.9	17	1500	1.1	*****	77	333	1.5	335	3.8	10
1800	-9.0	*****	93	117	.1	315	2.5	0	1800	-1.1	*****	1	140	.6	045	1.9	1
2100	-8.0	*****	98	130	.4	003	1.9	0	2100	-8	*****	95	014	.9	013	3.2	1
2400	-7.9	*****	97	127	.3	184	1.9	0	2400	-6	-1.5	94	033	.8	067	2.5	0
0300	-1.3	*****	98	037	.5	015	1.9	1	0300	-1.3	*****	98	037	.5	015	1.9	1
0600	-2.9	*****	6	147	.7	058	2.5	0	0600	-2.9	*****	6	147	.7	058	2.5	0
0900	-4.1	*****	0	123	.5	163	2.5	8	0900	-4.1	*****	0	123	.5	163	2.5	8
1200	-5	-2.7	85	018	.8	348	3.2	29	1200	-5	-2.7	85	018	.8	348	3.2	29
1500	6.5	-2.1	54	140	1.6	136	7.0	20	1500	6.5	-2.1	54	140	1.6	136	7.0	20
1800	5.7	-2.6	55	137	3.6	131	7.6	1	1800	5.7	-2.6	55	137	3.6	131	7.6	1
2100	5.7	-2.9	54	146	4.2	149	8.9	1	2100	5.7	-2.9	54	146	4.2	149	8.9	1
2400	5.7	-3.7	51	150	3.5	150	7.6	1	2400	5.7	-3.7	51	150	3.5	150	7.6	1

DAY 22

DAY 23

DAY 24

HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	TEMP.	POINT	RH	DIR.	SPD.	DIR.	TEMP.	POINT	RH	DIR.	SPD.
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.	M/S	DEG.	DEG C	DEG C	%	DEG.	M/S
0300	6.1	-2.5	54	135	3.2	142	7.0	1	0300	-6.7	*****	95	243	.1	233	3.2	0
0600	-1.3	*****	79	313	.5	150	4.4	1	0600	-6.7	*****	96	148	.3	168	1.9	1
0900	-1.9	*****	82	137	.3	109	1.9	12	0900	-4.6	*****	89	165	.6	138	1.9	12
1200	-3	-5.7	67	005	.5	000	2.5	40	1200	-5	*****	71	070	.4	012	1.9	23
1500	.6	*****	67	341	.6	339	1.9	12	1500	-1.2	*****	74	031	.5	079	2.5	13
1800	-3.7	*****	84	066	.3	129	3.2	1	1800	-1.1	*****	77	101	.6	118	1.9	1
2100	-4.4	*****	89	164	.7	149	1.9	0	2100	-1.6	*****	84	020	.7	063	1.9	1
2400	-4.9	*****	92	153	.7	138	1.9	0	2400	3.2	-6	76	330	1.2	358	3.8	1
0300	6.5	-.4	61	126	.8	131	8.9	1	0300	6.5	-.4	61	126	.8	131	8.9	1
0600	5.6	-1.5	60	145	2.9	147	8.3	1	0600	5.6	-1.5	60	145	2.9	147	8.3	1
0900	4.7	-4.6	51	143	4.8	144	8.9	11	0900	4.7	-4.6	51	143	4.8	144	8.9	11
1200	5.1	-5.1	48	135	3.5	151	6.3	36	1200	5.1	-5.1	48	135	3.5	151	6.3	36
1500	3.6	-6.4	48	139	3.5	138	6.3	16	1500	3.6	-6.4	48	139	3.5	138	6.3	16
1800	-2.2	*****	69	140	1.1	146	5.7	0	1800	-2.2	*****	69	140	1.1	146	5.7	0
2100	-5.4	*****	82	131	.7	101	1.9	1	2100	-5.4	*****	82	131	.7	101	1.9	1
2400	-11.4	*****	98	104	.3	178	1.9	0	2400	-11.4	*****	98	104	.3	178	1.9	0

DAY 25

DAY 26

DAY 27

HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	TEMP.	POINT	RH	DIR.	SPD.	DIR.	TEMP.	POINT	RH	DIR.	SPD.
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.	M/S	DEG.	DEG C	DEG C	%	DEG.	M/S
0300	-12.4	*****	93	140	.5	139	1.9	1	0300	-5.0	*****	91	044	.3	157	1.9	1
0600	-14.8	*****	90	138	.4	127	1.3	1	0600	-5.0	-6.0	93	043	.4	118	2.5	1
0900	-14.8	*****	89	120	.3	139	1.3	10	0900	-2.2	-3.1	94	128	.9	137	3.8	11
1200	-6.0	*****	70	044	.3	079	1.9	41	1200	6.4	-.5	61	024	.8	098	4.4	39
1500	-2.5	*****	62	011	.3	357	1.9	17	1500	6.7	-2.7	51	132	2.4	138	7.0	20
1800	-6.0	*****	72	139	.4	145	1.9	1	1800	5.0	-2.6	58	123	3.1	124	7.0	1
2100	-5.4	*****	78	154	.8	112	2.5	1	2100	1.5	-3.3	70	156	1.3	153	6.3	1
2400	-6.6	*****	81	085	.4	010	1.9	0	2400	-2.4	-4.4	86	326	.7	282	2.5	0
0300	-2.9	*****	86	285	.4	349	2.5	1	0300	-2.9	*****	86	285	.4	349	2.5	1
0600	-3.3	*****	88	118	.4	094	1.9	1	0600	-3.3	*****	88	118	.4	094	1.9	1
0900	-1.6	*****	84	120	.3	133	1.3	8	0900	-1.6	*****	84	120	.3	133	1.3	8
1200	-.8	*****	86	346	.7	020	2.5	15	1200	-.8	*****	86	346	.7	020	2.5	15
1500	.8	*****	88	161	.2	168	1.9	12	1500	.8	*****	88	161	.2	168	1.9	12
1800	-1.5	*****	7	038	.2	178	1.9	1	1800	-1.5	*****	7	038	.2	178	1.9	1
2100	-2.8	*****	7	118	.3	175	1.9	1	2100	-2.8	*****	7	118	.3	175	1.9	1
2400	-6.5	*****	3	098	.2	341	1.3	1	2400	-6.5	*****	3	098	.2	341	1.3	1

R & M CONSULTANTS, INC.
SUSTITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR EKLUTNA LAKE WEATHER STATION
DATA TAKEN DURING February, 1983

DAY 28

HOUR	DEW		WIND	WIND	GUST	MAX.	
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST RAD
	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S MW
0300	-8.0	*****	2	121	.4	109	1.3 1
0600	-8.0	*****	1	120	.2	106	1.3 1
0900	-5.1	*****	7	145	.4	148	1.9 12
1200	-.2	*****	80	047	.2	060	1.3 58
1500	2.6	*****	71	005	.4	338	1.3 21
1800	-2.2	*****	92	114	.4	046	1.9 1
2100	-1.9	*****	94	125	.3	044	1.3 1
2400	-2.6	*****	97	152	.4	193	1.3 0

R & M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT

MONTHLY SUMMARY FOR EKLUTNA LAKE WEATHER STATION
DATA TAKEN DURING February, 1983

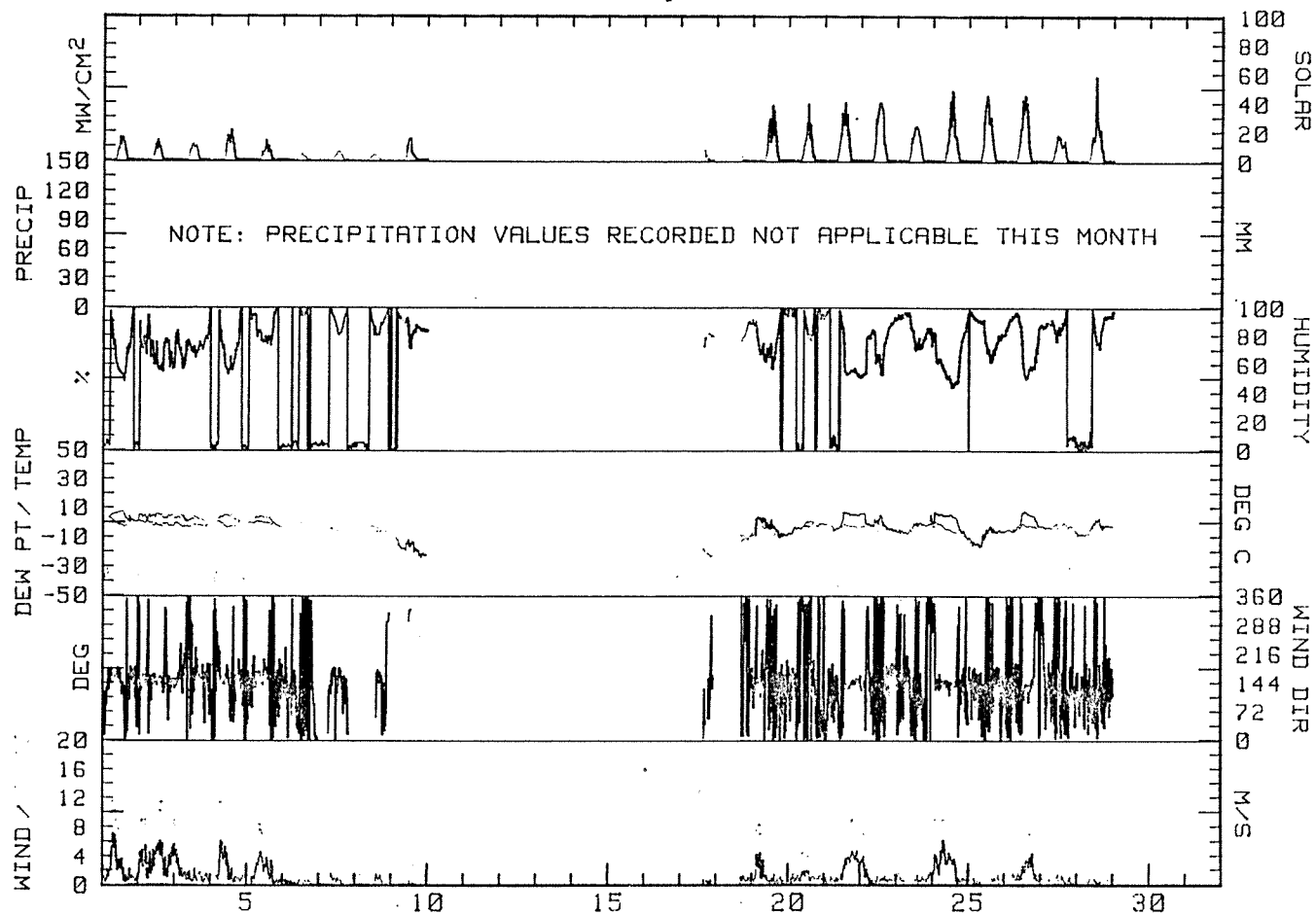
DAY	MAX. TEMP. DEG C	MIN. TEMP. DEG C	MEAN TEMP. DEG C	RES. WIND DIR. DEG	RES. WIND SPD. M/S	AVG. WIND SPD. M/S	MAX. GUST DIR. DEG	MAX. GUST SPD. M/S	P'VAL DIR.	MEAN RH %	MEAN DP DEG C	PRECIP MM	DAY'S SOLAR ENERGY WH/SQm	DAY
1	7.7	.4	4.1	148	1.7	2.1	158	11.4	SSE			****	760	1
2	5.9	.9	3.4	148	3.0	3.5	144	11.4	SSE			****	633	2
3	4.8	.4	2.6	155	1.1	1.6	132	8.9	SSE			****	645	3
4	5.1	-.7	2.2	149	1.2	1.9	159	11.4	SSE			****	950	4
5	4.3	-3.4	.5	151	1.2	1.8	155	8.3	SSE			****	578	5
6	.2	-3.3	-1.6	040M	.2M	.4M	159M	1.9M	N (M)	*****	****	****	273	6
7	-2.3	-4.4	-3.4	152M	.5M	.4M	162M	2.5M	SSE (M)			****	350	7
8	-2.1	-7.2	-4.7	144M	.4M	.4M	169M	2.5M	SSE (M)			****	288	8
9	-7.7M	-23.9M	-15.8M	315M	.3M	.2M	297M	1.3M	NW (M) **	*****	****	****	643M	9
10	*****	*****	*****	***	****	****	***	****	*** **	****	****	****	*****	10
11	*****	*****	*****	***	****	****	***	****	*** **	****	****	****	*****	11
12	*****	*****	*****	***	****	****	***	****	*** **	****	****	****	*****	12
13	*****	*****	*****	***	****	****	***	****	*** **	****	****	****	*****	13
14	*****	*****	*****	***	****	****	***	****	*** **	****	****	****	*****	14
15	*****	*****	*****	***	****	****	***	****	*** **	****	****	****	*****	15
16	*****	*****	*****	***	****	****	***	****	*** **	****	****	****	*****	16
17	-18.2M	-23.6M	-20.9M	138M	.3M	.5M	259M	1.9M	SSE (M) **	*****	****	****	436M	17
18	-7.3M	-11.9M	-9.6M	010M	.3M	.9M	176M	3.2M	N (M)			****	144M	18
19	3.4	-10.1	-3.4	134	.6	1.2	125	8.3	SE			****	1643	19
20	1.4	-8.0	-3.3	012	.5	1.1	002	4.4	N			****	1250	20
21	7.0	-5.8	.6	138	1.7	2.1	149	8.9	SE			****	1823	21
22	6.5	-5.9	.3	130	.4	1.1	142	7.0	SE	66	-3.6	****	2190	22
23	5.3	-7.7	-1.2	042	.2	.8	358	3.8	N	86	-4.5	****	1455	23
24	7.1	-11.4	-2.2	139	2.2	2.5	131	8.9	SE			****	1953	24
25	-2.5	-16.7	-9.6	119	.3	.6	112	2.5	SSE	83	-10.5	****	2200	25
26	7.7	-6.4	.7	118	.9	1.6	138	7.0	SE	68	-3.0	****	2193	26
27	.9	-7.0	-3.1	077	.1	.6	349	2.5	SSE			****	1105	27
28	2.9	-9.2	-3.2	113	.2	.5	148	1.9	ESE			****	1723	28
MONTH	7.7M	-23.9M	-3.2M	139M	.8M	1.3M	158M	11.4M	SSE (M) M	M	M	****	23231M	

GUST VEL. AT MAX. GUST MINUS 2 INTERVALS 10.8
GUST VEL. AT MAX. GUST MINUS 1 INTERVAL 10.8
GUST VEL. AT MAX. GUST PLUS 1 INTERVAL 11.4
GUST VEL. AT MAX. GUST PLUS 2 INTERVALS 10.2

NOTE: RELATIVE HUMIDITY READINGS ARE UNRELIABLE WHEN WIND SPEEDS ARE LESS THAN ONE METER PER SECOND. SUCH READINGS HAVE NOT BEEN INCLUDED IN THE DAILY OR MONTHLY MEAN FOR RELATIVE HUMIDITY AND DEW POINT.

**** SEE NOTES AT THE BACK OF THIS REPORT ****

R&M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT
EKLUTNA LAKE WEATHER STATION
February, 1983



R & M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT

WIND FREQUENCY SUMMARY FOR EKLUTNA LAKE WEATHER STATION
DATA TAKEN DURING February, 1983

DIRECTION	VELOCITY (M/S)							TOTAL
	0.2 TO 1.0	1.0 TO 3.0	3.0 TO 6.0	6.0 TO 10.0	10.0 TO 15.0	15.0 TO 20.0	20.0 OR GREATER	
N	5.14	2.51	.12	0.00	0.00	0.00	0.00	7.77
NNE	4.84	1.37	0.00	0.00	0.00	0.00	0.00	6.22
NE	3.95	.78	0.00	0.00	0.00	0.00	0.00	4.72
ENE	3.65	.66	0.00	0.00	0.00	0.00	0.00	4.30
E	4.12	.84	.06	0.00	0.00	0.00	0.00	5.02
ESE	6.75	1.02	.72	0.00	0.00	0.00	0.00	8.49
SE	7.23	4.36	7.65	.06	0.00	0.00	0.00	19.31
SSE	7.35	5.92	5.86	.66	0.00	0.00	0.00	19.78
S	3.89	3.17	.12	0.00	0.00	0.00	0.00	7.17
SSW	.84	.96	0.00	0.00	0.00	0.00	0.00	1.79
SW	.12	1.08	0.00	0.00	0.00	0.00	0.00	1.20
WSW	.42	.24	.06	0.00	0.00	0.00	0.00	.72
W	.24	.36	0.00	0.00	0.00	0.00	0.00	.60
WNW	1.08	.96	0.00	0.00	0.00	0.00	0.00	2.03
NW	1.37	1.43	0.00	0.00	0.00	0.00	0.00	2.81
NNW	3.35	2.57	0.00	0.00	0.00	0.00	0.00	5.92
CALM								2.15
TOTAL	54.33	28.21	14.58	.72	0.00	0.00	0.00	100.00

NOTE: ALL FREQUENCIES ARE EXPRESSED IN PERCENT
1673 VALID WIND OBSERVATIONS USED TO DEVELOP FREQUENCY SUMMARY

 CALM

No precipitation data for March

(See INTERPRETATION OF DATA).

R & M CONSULTANTS, INC.

SUSITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR EKLUTNA LAKE WEATHER STATION
DATA TAKEN DURING March, 1983

DAY 01

DAY 02

DAY 03

HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	TEMP.	POINT	RH	DIR.	SPD.	DIR.	TEMP.	POINT	RH	DIR.	SPD.
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.	M/S	DEG.	DEG C	DEG C	%	DEG.	M/S
0300	-3.6	*****	5	133	.2	102	1.3	0	0300	-4.8	*****	85	146	.3	204	1.3	1
0600	-4.4	*****	5	139	.4	219	1.3	1	0600	-8.4	*****	0	144	.5	160	1.9	0
0900	-2.5	*****	95	119	.4	138	1.9	11	0900	-13.4	*****	95	149	.5	164	1.9	10
1200	2.9	-5.8	53	193	1.2	201	3.8	57	1200	-5.8	*****	65	001	.4	313	1.3	57
1500	.2	-7.8	55	210	.9	179	2.5	17	1500	-2.0	*****	48	352	.6	351	1.3	12
1800	-2.4	*****	65	195	1.3	201	2.5	0	1800	-9.5	*****	82	143	.3	166	1.9	1
2100	-2.7	*****	68	156	1.0	137	1.9	0	2100	-14.6	*****	84	163	.7	166	1.9	1
2400	-3.6	*****	79	067	.4	346	1.9	0	2400	-16.5	*****	90	159	.6	176	1.9	1

DAY 04

DAY 05

DAY 06

HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.	M/S	DEG.	DEG C	DEG C	%	DEG.	M/S
0300	-15.4	*****	88	142	.5	141	1.3	0	0300	-7.2	*****	81	155	.5	193	1.3	1
0600	-13.1	*****	87	085	.2	139	1.9	0	0600	-7.3	*****	85	142	.4	209	1.3	0
0900	-10.7	*****	82	155	.6	167	2.5	12	0900	-4.9	*****	78	134	.6	144	1.9	21
1200	-3.4	-11.4	54	067	.4	145	3.8	52	1200	1.1	*****	54	013	.6	030	1.9	66
1500	-1.6	*****	46	351	.6	006	1.9	21	1500	.2	*****	55	345	.9	352	1.9	29
1800	-4.9	*****	63	349	.6	006	3.2	1	1800	-5.0	*****	71	341	.4	343	1.9	0
2100	-6.4	*****	71	140	.5	151	2.5	1	2100	-7.6	*****	81	156	.5	153	1.9	1
2400	-7.1	*****	78	141	.5	134	2.5	0	2400	-9.6	*****	91	131	.3	135	1.3	1

DAY 07

DAY 08

DAY 09

HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.	M/S	DEG.	DEG C	DEG C	%	DEG.	M/S
0300	-12.6	*****	93	146	.4	166	1.9	0	0300	-17.0	*****	91	159	.7	175	2.5	0
0600	-16.2	*****	90	150	.5	146	1.9	0	0600	-18.7	*****	88	163	.8	177	1.9	1
0900	-15.1	*****	88	133	.4	160	1.3	12	0900	-16.3	*****	84	134	.4	162	1.9	11
1200	-5.7	*****	59	017	.3	049	1.3	59	1200	-8.8	*****	61	010	.4	040	1.3	60
1500	-2.6	*****	41	016	.3	358	1.3	28	1500	.1	*****	39	011	.4	355	1.3	30
1800	-4.5	*****	57	103	.2	013	1.3	1	1800	-7.8	*****	70	095	.1	359	1.3	1
2100	-11.8	*****	84	133	.3	167	1.9	0	2100	-14.1	*****	83	138	.5	126	1.9	0
2400	-15.7	*****	92	140	.5	167	1.9	0	2400	-17.4	*****	86	149	.5	178	1.9	1

R & M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR EKLUTNA LAKE WEATHER STATION
DATA TAKEN DURING March, 1983

DAY 10

DAY 11

DAY 12

HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.	
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.
	DEG C	DEG C	%	DEG.	M/S	DEG.		DEG C	DEG C	%	DEG.	M/S	DEG.		DEG C	DEG C	%	DEG.	M/S	DEG.
0300	-12.6	*****	82	122	.4	137 1.9	0300	-9.8	*****	87	127	.7	047 2.5	0300	-2.0	-4.2	85	072	.2	009 2.5
0600	-12.2	*****	83	086	.3	096 1.3	0600	-11.5	*****	91	054	.4	173 1.9	0600	.9	.6	98	131	.6	162 2.5
0900	-8.0	*****	75	055	.3	018 1.9	0900	-6.7	*****	81	018	.3	105 1.9	0900	.9	*****	86	127	.7	134 1.9
1200	-3.2	*****	55	329	.3	157 1.9	1200	-.2	*****	64	322	.2	345 1.9	1200	8.2	-1.1	52	339	1.1	291 4.4
1500	-1.6	*****	50	352	.7	015 1.3	1500	2.6	-3.3	65	324	1.1	328 5.7	1500	7.7	-1.5	52	134	3.2	145 6.3
1800	-4.7	*****	66	331	.7	288 2.5	1800	-1.6	-5.3	76	004	1.0	335 3.2	1800	2.6	*****	80	141	.7	126 5.1
2100	-8.0	*****	77	022	.5	335 2.5	2100	-1.8	*****	81	016	.7	029 3.2	2100	.3	*****	89	145	.6	123 1.9
2400	-8.2	-10.7	82	126	.4	122 2.5	2400	-3.0	*****	85	031	.8	017 2.5	2400	.1	*****	92	117	.3	130 3.2

DAY 13

DAY 14

DAY 15

HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.		
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	
	DEG C	DEG C	%	DEG.	M/S	DEG.		DEG C	DEG C	%	DEG.	M/S	DEG.		DEG C	DEG C	%	DEG.	M/S	DEG.	
0300	-.3	*****	96	136	.4	164 1.9	1	0300	-2.2	*****	97	120	.4	028 1.9	0	0300	-1.4	*****	8	126	.5
0600	-2.8	*****	4	144	.4	051 1.9	0	0600	-3.0	*****	1	142	.4	167 1.9	0	0600	-5.3	*****	5	125	.6
0900	-3.2	*****	96	139	.4	181 1.9	16	0900	-2.1	*****	87	121	.3	133 1.3	27	0900	-2.7	*****	5	071	.3
1200	1.9	*****	74	360	.4	354 1.9	47	1200	4.6	*****	66	009	.5	339 1.9	48	1200	7.0	-3.6	47	145	2.3
1500	9.9	*****	46	354	.5	034 1.3	38	1500	5.5	*****	60	001	.5	354 1.9	27	1500	6.2	-3.5	50	139	3.7
1800	.9	*****	80	045	.4	014 1.3	1	1800	2.1	*****	80	006	.3	332 1.3	1	1800	5.3	-4.6	49	135	3.0
2100	-1.3	*****	87	156	.7	160 1.9	1	2100	.9	*****	90	144	.4	114 1.3	1	2100	2.1	*****	67	103	.4
2400	-2.4	*****	96	119	.4	037 1.9	0	2400	.4	*****	95	149	.4	100 1.3	1	2400	4.1	-4.1	55	146	2.2

DAY 16

DAY 17

DAY 18

HOUR	DEW							WIND							WIND							GUST							MAX.							HOUR							DEW							WIND							WIND							GUST							MAX.							HOUR							DEW							WIND							WIND							GUST							MAX.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
0300	-2.5	*****	78	173	.3	158	5.1	1	0300	-7.0	*****	3	132	.4	019	1.3	1	0300	-12.1	*****	96	149	.6	176	1.9	0																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									

R & M CONSULTANTS, INC.

SUSITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR EKLUTNA LAKE WEATHER STATION
DATA TAKEN DURING March, 1983

DAY 19

DAY 20

DAY 21

HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	TEMP.	POINT	RH	DIR.	SPD.	DIR.	TEMP.	POINT	RH	DIR.	SPD.
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.	M/S	DEG.	DEG C	DEG C	%	DEG.	M/S
0300	-13.1	*****	93	139	.5	159	0300	-11.5	*****	94	149	.5	0300	-7.6	-8.3	95	155
0600	-13.1	*****	97	164	.5	178	0600	-9.2	*****	94	148	.5	0600	-9.7	*****	1	144
0900	-7.7	*****	81	146	.5	169	0900	-3.5	*****	69	084	.1	0900	-6.3	*****	85	132
1200	2.6	*****	38	004	.5	350	1200	2.2	*****	50	139	.1	1200	1.8	*****	53	013
1500	3.3	*****	41	352	.9	012	1500	3.7	*****	46	353	.7	1500	2.6	-6.0	53	349
1800	-3.1	-8.1	68	028	.1	157	1800	1.6	*****	50	059	.2	1800	-.6	*****	60	332
2100	-4.6	*****	76	144	.7	124	2100	-4.1	*****	79	149	.4	2100	-4.7	*****	77	153
2400	-8.2	-9.9	88	151	.7	165	2400	-6.0	*****	90	139	.4	2400	-7.2	*****	93	140

DAY 22

DAY 23

DAY 24

HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.	M/S	DEG.	DEG C	DEG C	%	DEG.	M/S
0300	-9.1	-9.5	97	152	.5	163	0300	-11.0	*****	95	127	.4	0300	-3.4	*****	84	161
0600	-11.0	*****	0	148	.5	155	0600	-12.6	*****	98	159	.5	0600	-3.7	*****	83	110
0900	-7.0	*****	87	131	.2	200	0900	-7.5	*****	76	121	.3	0900	-.3	*****	72	067
1200	-.6	-7.6	59	359	.6	347	1200	.4	-10.5	44	036	.5	1200	3.4	-5.8	51	335
1500	4.1	-7.8	42	339	.9	350	1500	3.5	-9.6	38	342	.9	1500	3.4	*****	57	343
1800	-.9	*****	63	022	.3	331	1800	-1.4	*****	66	032	.3	1800	1.1	*****	61	336
2100	-5.2	*****	77	144	.2	272	2100	-2.6	*****	74	138	.4	2100	-3.4	*****	89	138
2400	-8.7	*****	88	144	.5	143	2400	-3.1	*****	79	113	.2	2400	-4.3	*****	96	154

DAY 25

DAY 26

DAY 27

HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.	M/S	DEG.	DEG C	DEG C	%	DEG.	M/S
0300	-6.3	*****	94	164	.8	176	0300	-.1	-2.3	85	025	.7	0300	-3.1	*****	96	148
0600	-8.4	*****	1	122	.5	039	0600	-2.9	*****	95	077	.5	0600	-4.3	*****	1	064
0900	-3.2	*****	79	120	.4	169	0900	1.7	*****	72	099	.0	0900	-1.3	*****	81	027
1200	6.1	-6.3	41	083	.1	140	1200	5.7	*****	52	360	.4	1200	8.5	-4.4	40	029
1500	5.5	-6.5	42	140	2.1	135	1500	8.1	*****	46	002	.5	1500	7.8	-6.9	35	159
1800	2.6	*****	58	016	.4	174	1800	.4	*****	73	063	.4	1800	5.5	-7.5	39	152
2100	.6	-3.7	73	025	.7	348	2100	-2.4	*****	92	150	.5	2100	4.8	-7.1	42	152
2400	-.5	*****	79	020	.8	029	2400	-2.5	*****	93	151	.9	2400	4.5	-6.5	45	144

R & M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR EKLUTNA LAKE WEATHER STATION
DATA TAKEN DURING March, 1983

DAY 28

DAY 29

DAY 30

HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.									
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST			
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW			
0300	.8	*****	68	143	2.0	143	6.3	1	0300	-6.4	*****	2	131	.3	126	1.3	0	0300	-7.7	*****	0	148	.5	182	1.9	0
0600	1.7	-3.5	68	242	.5	273	1.9	2	0600	-7.4	*****	5	135	.4	176	1.3	2	0600	-9.1	*****	1	153	.4	141	1.9	2
0900	5.8	-5.3	45	150	.8	150	4.4	41	0900	-1.0	*****	79	070	.3	177	1.3	49	0900	-3.0	*****	76	141	.3	149	1.3	50
1200	7.5	-6.4	37	133	3.5	137	6.3	50	1200	4.9	-5.5	47	350	.7	347	1.9	67	1200	5.0	*****	46	000	.6	019	1.3	76
1500	3.7	-4.0	57	125	1.1	118	4.4	30	1500	5.6	-4.0	50	347	1.3	005	3.2	43	1500	3.8	-4.2	56	349	1.1	357	3.2	49
1800	3.3	*****	55	336	.7	357	2.5	4	1800	2.5	*****	56	329	.7	000	2.5	4	1800	3.4	*****	54	317	.7	296	2.5	6
2100	-1.3	*****	75	145	.5	194	1.9	1	2100	-3.1	*****	82	158	.6	147	1.3	1	2100	-9	*****	73	139	.3	059	1.9	0
2400	-3.3	*****	93	144	.3	151	1.9	0	2400	-6.1	*****	97	143	.4	159	1.3	1	2400	1.4	*****	83	124	.4	168	1.9	0

DAY 31

HOUR	DEW	WIND	WIND	GUST	MAX.			
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	NDNG
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW	
0300	-0.8	*****	98	189	.3	213	2.5	1
0600	-1.5	*****	6	142	.6	136	1.9	3
0900	1.8	*****	88	142	.4	172	1.9	30
1200	6.5	-7	60	348	.6	328	1.9	76
1500	4.3	-8	69	348	1.2	335	2.5	40
1800	4.6	*****	72	344	1.0	353	3.2	5
2100	-1.3	*****	94	140	.5	179	1.9	0
2400	-3.7	*****	0	136	.4	136	1.9	0

R & M CONSULTANTS, INC.

SUSTITNA HYDROELECTRIC PROJECT

MONTHLY SUMMARY FOR EKLUTNA LAKE WEATHER STATION
DATA TAKEN DURING March, 1983

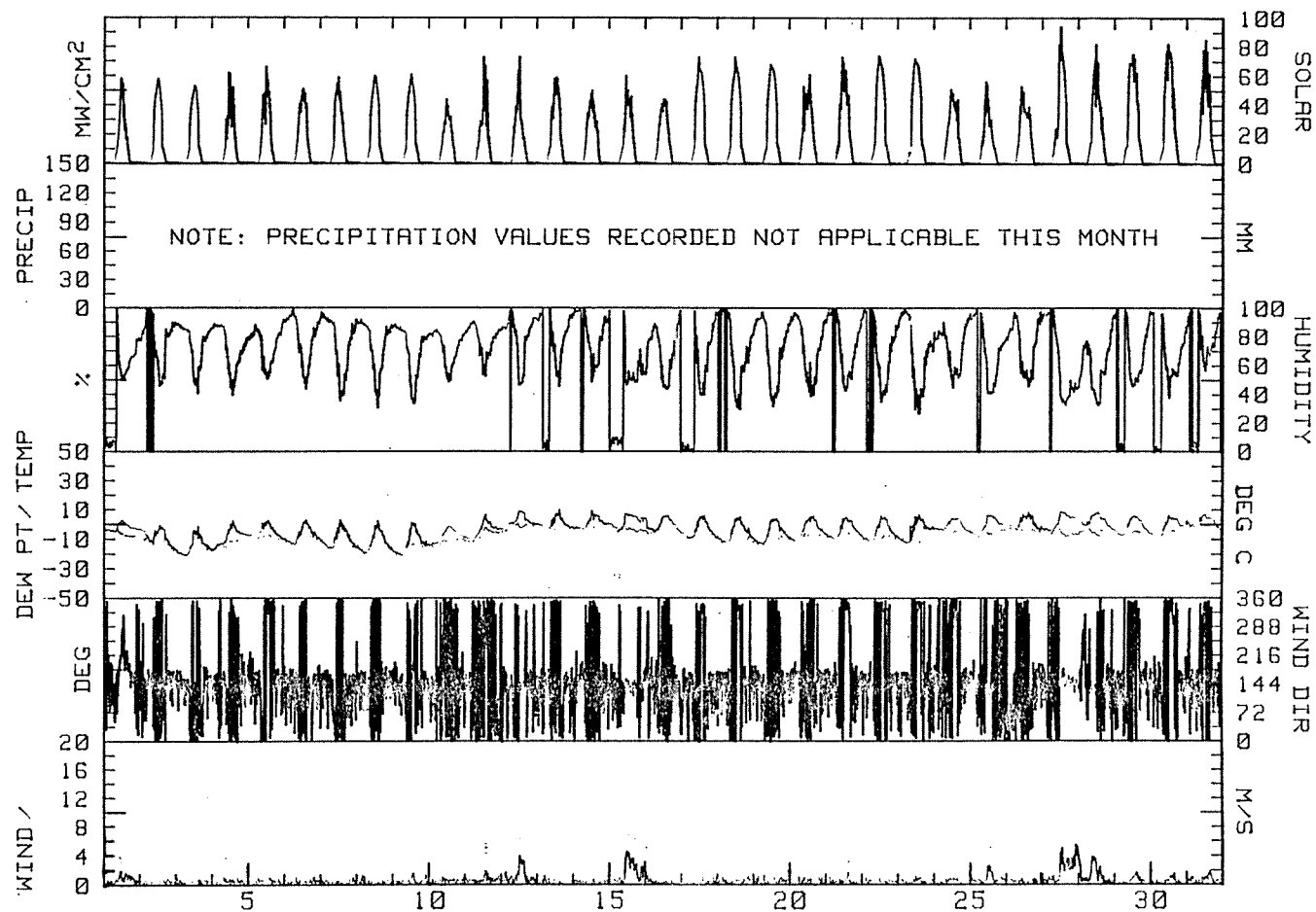
DAY	MAX. TEMP. DEG C	MIN. TEMP. DEG C	MEAN TEMP. DEG C	RES. WIND DIR. DEG	RES. WIND SPD. M/S	AVG. WIND SPD. M/S	MAX. GUST DIR. DEG	MAX. GUST SPD. M/S	P'VAL DIR.	MEAN RH %	MEAN DP DEG C	PRECIP MM	DAY'S SOLAR ENERGY WH/SGH	DAY
1	2.9	-5.0	-1.1	174	.6	.9	201	3.8	S			****	2533	1
2	-8	-17.1	-9.0	142	.2	.6	160	1.9	SSE			****	3038	2
3	-1.5	-21.1	-11.3	128	.2	.5	144	1.9	SSE	89	-18.7	****	2938	3
4	2.2	-17.5	-7.7	102	.2	.6	145	3.8	SE	68	-12.5	****	2653	4
5	2.4	-10.0	-3.8	087	.1	.6	144	1.9	N	66	-8.2	****	3123	5
6	2.9	-13.9	-5.5	124	.3	.6	176	1.9	SSE	82	-10.1	****	2973	6
7	2.8	-16.2	-6.7	122	.3	.5	166	1.9	SSE	83	-13.6	****	3130	7
8	2.1	-19.4	-8.7	136	.3	.6	175	2.5	SE	89	-17.9	****	3335	8
9	.9	-21.0	-10.1	137	.3	.6	180	2.5	SE	58	-14.6	****	3370	9
10	-1.2	-14.2	-7.7	024	.2	.7	288	2.5	N	73	-11.2	****	2428	10
11	6.8	-11.5	-2.4	014	.4	.9	328	5.7	N	73	-5.4	****	2883	11
12	9.1	-3.7	2.7	127	.7	1.3	145	6.3	SE			****	2863	12
13	9.9	-4.1	2.9	109	.2	.6	164	1.9	SSE			****	3368	13
14	9.2	-3.3	3.0	095	.2	.5	028	1.9	ESE			****	3040	14
15	7.3	-5.3	1.0	137	1.6	1.8	149	7.0	SE			****	2923	15
16	6.2	-5.9	.2	104	.2	.6	158	5.1	SE			****	2948	16
17	5.9	-9.4	-1.8	096	.2	.6	226	2.5	SSE			****	4133	17
18	5.1	-13.2	-4.1	128	.2	.6	148	2.5	SSE			****	4273	18
19	4.3	-13.3	-4.5	126	.2	.7	169	2.5	SSE	70	-10.5	****	4298	19
20	5.7	-11.5	-2.9	119	.2	.6	343	2.5	S	69	-7.3	****	3430	20
21	4.6	-9.8	-2.6	090	.1	.5	349	3.2	SSE	58	-6.6	****	4013	21
22	5.7	-11.6	-3.0	086	.1	.6	163	1.9	NNW			****	4508	22
23	6.3M	-14.3M	-4.0M	077	.2	.6	095	2.5	SSE	37	-10.5	****	4688M	23
24	4.8	-5.9	-.6	077	.1	.6	357	1.9	SE	57	-4.9	****	3408	24
25	6.1	-8.8	-1.4	109	.4	1.0	135	5.1	SSE			****	2743	25
26	8.1	-3.8	2.2	073	.2	.7	164	3.2	NNE	82	-3.6	****	3418	26
27	8.5	-6.2	1.2	145	1.7	2.2	155	9.5	SSE			****	4648	27
28	8.5	-3.4	2.6	140	.9	1.4	143	6.3	SE	48	-5.4	****	4183	28
29	6.0	-7.6	-.8	020	.2	.7	005	3.2	N			****	4870	29
30	6.0	-9.3	-1.7	034	.1	.6	357	3.2	N			****	5163	30
31	7.4	-3.7	1.9	032	.1	.8	353	3.2	SE			****	4623	31
MONTH	9.9M	-21.1M	-2.7M	123	.3	.8	155	9.5	SSE	M	M	****	109934M	

GUST VEL. AT MAX. GUST MINUS 2 INTERVALS 8.3
GUST VEL. AT MAX. GUST MINUS 1 INTERVAL 7.6
GUST VEL. AT MAX. GUST PLUS 1 INTERVAL 8.9
GUST VEL. AT MAX. GUST PLUS 2 INTERVALS 7.0

NOTE: RELATIVE HUMIDITY READINGS ARE UNRELIABLE WHEN WIND SPEEDS ARE LESS THAN ONE METER PER SECOND. SUCH READINGS HAVE NOT BEEN INCLUDED IN THE DAILY OR MONTHLY MEAN FOR RELATIVE HUMIDITY AND DEW POINT.

**** SEE NOTES AT THE BACK OF THIS REPORT ****

R&M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT
EKLUTNA LAKE WEATHER STATION
March, 1983



R & M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT

WIND FREQUENCY SUMMARY FOR EKLUTNA LAKE WEATHER STATION
DATA TAKEN DURING March, 1983

DIRECTION	VELOCITY (M/S)							TOTAL
	0.2 TO 1.0	1.0 TO 3.0	3.0 TO 6.0	6.0 TO 10.0	10.0 TO 15.0	15.0 TO 20.0	20.0 OR GREATER	
N	8.50	1.85	0.00	0.00	0.00	0.00	0.00	10.35
NNE	6.25	.47	0.00	0.00	0.00	0.00	0.00	6.72
NE	5.48	.30	0.00	0.00	0.00	0.00	0.00	5.78
ENE	4.64	.20	0.00	0.00	0.00	0.00	0.00	4.84
E	6.12	.10	0.00	0.00	0.00	0.00	0.00	6.22
ESE	8.20	.34	.17	0.00	0.00	0.00	0.00	8.71
SE	11.66	2.05	1.58	0.00	0.00	0.00	0.00	15.29
SSE	12.30	2.82	1.14	0.00	0.00	0.00	0.00	16.27
S	6.32	2.45	0.00	0.00	0.00	0.00	0.00	8.77
SSW	1.31	.44	0.00	0.00	0.00	0.00	0.00	1.75
SW	.64	.34	0.00	0.00	0.00	0.00	0.00	.97
WSW	.24	.13	0.00	0.00	0.00	0.00	0.00	.37
W	.27	.17	0.00	0.00	0.00	0.00	0.00	.44
WNW	.71	.40	0.00	0.00	0.00	0.00	0.00	1.11
NW	1.71	.87	0.00	0.00	0.00	0.00	0.00	2.59
NNW	5.85	2.45	0.00	0.00	0.00	0.00	0.00	8.30
CALM								1.51
TOTAL	80.20	15.40	2.89	0.00	0.00	0.00	0.00	100.00

NOTE: ALL FREQUENCIES ARE EXPRESSED IN PERCENT
2975 VALID WIND OBSERVATIONS USED TO DEVELOP FREQUENCY SUMMARY

 CALM

R & M CONSULTANTS, INC.

SUSITNA HYDROELECTRIC PROJECT

HOURLY PRECIPITATION SUMMARY FOR EKLUTNA LAKE WEATHER STATION

DATA TAKEN DURING April, 1983

PRECIPITATION VALUES ARE IN MILLIMETERS

[illegible][illegible]

R & M CONSULTANTS, INC.

SUSTITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR EKLUTNA LAKE WEATHER STATION
DATA TAKEN DURING April, 1983

DAY 01

DAY 02

DAY 03

HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.	M/S	DEG.
						MW							MW						
0300	-4.6	*****	4	146	.4	154	0300	-5.8	*****	3	155	.5	131	0300	-5.8	*****	98	139	.6
0600	-4.2	*****	4	140	.5	130	0600	-7.2	*****	6	162	.6	174	0600	-6.4	*****	1	134	.6
0900	1.1	*****	79	067	.3	130	0900	-2.3	*****	83	121	.3	171	0900	6.7	-3.6	48	150	1.2
1200	8.3	-3.6	43	128	1.2	139	1200	5.5	*****	42	357	.6	025	1200	6.5	-4.4	46	156	4.8
1500	4.5	-2.1	62	109	.1	166	1500	5.6	-4.9	47	341	.9	341	1500	7.2	-4.3	44	150	4.4
1800	3.2	*****	66	350	1.0	002	1800	3.1	*****	59	022	.5	359	1800	5.2	.8	73	150	3.7
2100	-2.4	*****	89	161	.6	167	2100	-2.3	*****	77	143	.5	093	2100	4.3	1.5	82	153	4.5
2400	-3.8	*****	98	156	.5	170	2400	-4.1	*****	88	150	.5	131	2400	1.4	-32.3	6	041	.4

DAY 04

DAY 05

DAY 06

HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.	M/S	DEG.
						MW							MW						
0300	1.8	*****	4	351	1.0	355	0300	3.4	-3.8	59	153	4.1	154	0300	-2.9	*****	85	074	.5
0600	.1	*****	10	007	.9	333	0600	3.7	-3.3	60	148	5.3	159	0600	-2.8	*****	82	041	.4
0900	.9	*****	5	105	.2	047	0900	5.7	-3.7	51	153	4.9	153	0900	4.2	-7.4	43	035	.7
1200	2.6	*****	92	028	.1	013	1200	6.2	-4.6	46	151	4.8	155	1200	5.3	-8.0	38	148	3.8
1500	1.2	1.1	99	004	.8	359	1500	5.4	-5.7	45	155	4.2	145	1500	4.7	-7.9	40	155	4.3
1800	.6	*****	96	044	.2	321	1800	.9	-1.4	85	146	4.7	159	1800	2.9	-7.7	46	157	3.4
2100	2.6	-1.9	72	148	3.4	157	2100	2.3	-6.3	53	153	2.0	147	2100	.3	*****	56	169	1.3
2400	3.6	-2.5	64	144	2.4	153	2400	.1	*****	72	152	2.7	141	2400	-4.4	*****	79	072	.5

DAY 07

DAY 08

DAY 09

HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.	M/S	DEG.
						MW							MW						
0300	-6.7	*****	94	154	.5	136	0300	-3.3	*****	89	158	.8	112	0300	-2.7	*****	83	141	.6
0600	-7.8	*****	98	158	.7	159	0600	-2.6	*****	79	151	.7	171	0600	-2.6	-2.9	98	002	.5
0900	.6	*****	59	144	.4	165	0900	.1	-6.1	63	168	.5	177	0900	-1.6	-3.4	88	350	1.2
1200	5.5	*****	33	342	.7	320	1200	3.2	-6.8	48	341	1.4	335	1200	-.8	-3.8	80	343	1.3
1500	3.4	-4.5	56	336	1.2	357	1500	3.0	-3.5	62	344	1.5	340	1500	.7	-4.3	69	348	1.3
1800	2.6	*****	60	346	1.1	004	1800	.1	-3.1	79	356	2.6	359	1800	-1.1	-3.3	85	334	.9
2100	-2.0	*****	77	139	.6	124	2100	-.7	*****	84	356	1.0	351	2100	-2.0	*****	94	162	.8
2400	-4.0	*****	89	152	.5	164	2400	-2.4	*****	78	159	.7	175	2400	-4.3	*****	0	140	.3

R & M CONSULTANTS, INC.
SUSTITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR EKLUTNA LAKE WEATHER STATION
DATA TAKEN DURING April, 1983

DAY 10

DAY 11

DAY 12

HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.	M/S	DEG.
0300	-5.8	*****	2	155	.5	125	1	0300	-9.7	*****	90	157	.6	169	1	0300	3.6	-3.6	59
0600	-6.7	*****	1	144	.6	143	4	0600	-8.7	*****	89	149	.4	152	6	0600	-4.4	-4.6	73
0900	-1.4	*****	69	120	.2	151	57	0900	-4.7	-9.7	68	023	.4	123	28	0900	3.4	-3.2	62
1200	2.1	-9.3	43	331	1.0	328	91	1200	.9	-5.3	63	160	2.6	156	34	1200	2.7	-2.6	68
1500	1.6	-8.6	47	349	2.2	000	67	1500	.9	-6.0	60	146	7.0	150	24	1500	1.9	-1.5	78
1800	-6.6	*****	46	002	1.2	344	8	1800	1.7	-5.0	61	147	6.3	141	7	1800	.3	*****	14
2100	-3.7	*****	58	142	.8	164	1	2100	3.2	-4.3	58	152	6.3	153	1	2100	-2.2	*****	12
2400	-7.6	-10.1	82	140	.8	137	1	2400	4.0	-4.0	56	157	7.5	161	1	2400	-1.7	*****	10

DAY 13

DAY 14

DAY 15

HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.	M/S	DEG.
0300	-4.0	*****	9	***	***	***	1	0300	0.0	*****	11	124	.3	086	0	0300	4.2	-3.8	56
0600	-4.2	*****	9	***	***	***	3	0600	-4.4	*****	9	035	.3	084	4	0600	4.4	-3.9	55
0900	1.4	*****	90	015M	.2M	006M	20	0900	6.3	-1.3	58	135	1.8	151	62	0900	4.9	-3.4	55
1200	1.8	*****	90	355	.5	355	46	1200	5.2	.2	70	134	4.0	136	53	1200	4.5	-3.0	58
1500	2.7	*****	93	001	.5	359	21	1500	7.6	-3.1	47	135	3.0	144	36	1500	5.0	-3.3	55
1800	1.4	*****	2	022	.2	035	10	1800	5.5	-5.6	45	147	5.1	150	10	1800	4.5	-3.5	56
2100	.1	*****	10	092	.2	110	0	2100	4.1	-4.1	55	147	4.8	144	1	2100	4.4	-3.4	57
2400	0.0	*****	10	073	.2	208	0	2400	3.3	-2.4	66	151	5.7	154	0	2400	.9	-1.1	93

DAY 16

DAY 17

DAY 18

HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.	M/S	DEG.
0300	-4.4	*****	92	160	.2	309	1	0300	-8.8	-39.3	3	114	.2	354	1	0300	3.0	-4.9	56
0600	-5.5	*****	96	152	.4	166	10	0600	-3.3	*****	1	113	.2	086	7	0600	3.4	-4.8	55
0900	1.5	*****	84	358	.5	335	39	0900	2.6	*****	74	021	.5	022	68	0900	4.8	-5.1	49
1200	3.8	-1.1	70	344	.6	338	47	1200	3.4	-.6	75	345	1.2	358	57	1200	5.4	-5.4	46
1500	3.0	.2	82	336	1.2	347	45	1500	4.7	-.9	67	332	1.5	306	39	1500	5.3	-4.9	48
1800	2.6	2.0	96	326	1.0	328	12	1800	2.2	-1.2	78	334	1.8	351	10	1800	3.2	-1.0	74
2100	1.4	*****	96	336	.9	001	1	2100	-1.0	-34.1	6	347	2.5	339	1	2100	3.3	-1.8	69
2400	-1.3	*****	6	115	.3	335	0	2400	-1.5	*****	6	352	1.6	354	1	2400	1.3	.9	97

R & M CONSULTANTS, INC.

SUSTITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR EKLUTNA LAKE WEATHER STATION
DATA TAKEN DURING April, 1983

DAY 19

DAY 20

DAY 21

HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.							
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.						
	DEG C	DEG C	%	DEG.	M/S	DEG.		DEG C	DEG C	%	DEG.	M/S	DEG.		DEG C	DEG C	%	DEG.	M/S	DEG.						
0300	-2	*****	7	348	.9	355	2.5	0	0300	-1.2	*****	9	150	.5	145	1.9	0	0300	-6	*****	88	146	.6	173	1.9	1
0600	-6	-33.8	6	003	.6	354	2.5	7	0600	.2	*****	4	145	.6	160	1.9	7	0600	-9	-1.6	95	086	.4	018	2.5	8
0900	2.0	*****	84	333	.6	309	2.5	42	0900	4.1	-1.2	68	161	1.2	162	2.5	57	0900	5.5	-4.7	48	115	.4	156	4.4	34
1200	4.9	-5.5	47	139	3.4	125	7.6	72	1200	6.1	-2.8	53	197	.2	161	3.8	85	1200	7.5	-3.7	45	144	2.8	150	5.1	62
1500	5.0	-5.7	46	154	4.7	168	10.8	44	1500	5.1	-2.9	56	134	2.3	135	5.7	39	1500	7.6	-3.1	47	130	2.9	134	6.3	36
1800	4.5	-5.6	48	153	4.1	145	7.6	9	1800	2.9	-.5	78	168	2.6	180	5.7	13	1800	6.8	-2.1	53	127	3.2	132	6.3	9
2100	3.5	-4.9	54	145	3.2	152	5.7	1	2100	.2	*****	93	162	.6	195	3.2	0	2100	6.3	-1.8	56	120	1.5	102	5.7	1
2400	.6	*****	92	147	1.4	142	5.1	0	2400	1.0	*****	82	080	.3	049	2.5	1	2400	1.8	-.2	87	126	.7	138	3.8	0

DAY 22

DAY 23

DAY 24

HOUR									DEW									WIND WIND GUST MAX.									HOUR									DEW									WIND WIND GUST MAX.								
NDNG TEMP. POINT RH DIR. SPD. DIR. GUST RAD									NDNG TEMP. POINT RH DIR. SPD. DIR. GUST RAD									NDNG TEMP. POINT RH DIR. SPD. DIR. GUST RAD									NDNG TEMP. POINT RH DIR. SPD. DIR. GUST RAD									NDNG TEMP. POINT RH DIR. SPD. DIR. GUST RAD									NDNG TEMP. POINT RH DIR. SPD. DIR. GUST RAD								
DEG C DEG C % DEG. M/S DEG. M/S MW									DEG C DEG C % DEG. M/S DEG. M/S MW									DEG C DEG C % DEG. M/S DEG. M/S MW									DEG C DEG C % DEG. M/S DEG. M/S MW									DEG C DEG C % DEG. M/S DEG. M/S MW									DEG C DEG C % DEG. M/S DEG. M/S MW								
0300	1.0	*****	88	015	.4	035	3.2	0	0300	5.1	-1.5	62	140	2.8	143	6.3	1	0300	-2.2	*****	7	144	.7	173	1.9	0																											
0600	6.6	.7	66	044	.6	129	5.7	10	0600	4.5	-.3	71	357	.8	353	5.7	7	0600	-2.7	*****	2	153	.6	161	1.9	8																											
0900	8.0	-.7	54	125	2.3	132	7.0	30	0900	8.5	-1.9	48	211	.3	153	6.3	25	0900	6.8	*****	58	135	.4	166	1.9	72																											
1200	9.7	-1.4	46	141	4.2	146	8.3	99	1200	10.0	-4.2	37	157	4.1	163	7.6	37	1200	9.4	-2.3	44	353	1.2	351	2.5	95																											
1500	10.2	-2.6	41	149	4.0	148	8.3	73	1500	11.4	-6.1	29	252	.9	181	6.3	43	1500	9.8	-.7	48	342	1.8	359	3.2	78																											
1800	8.7	-2.6	45	151	3.6	145	7.0	12	1800	7.1	-1.6	54	069	.5	170	5.7	8	1800	10.4	-2.1	42	298	.5	216	2.5	11																											
2100	7.9	-2.8	47	154	2.8	146	7.0	1	2100	1.8	*****	72	167	.3	315	3.2	0	2100	2.6	*****	74	165	.9	189	3.2	1																											
2400	8.2	-2.8	46	154	3.3	156	6.3	1	2400	-1.1	*****	91	166	.7	179	1.9	1	2400	1.2	*****	84	152	.5	154	1.9	1																											

DAY 25

DAY 26

DAY 27

HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.							
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.						
	DEG C	DEG C	%	DEG.	M/S	DEG.		DEG C	DEG C	%	DEG.	M/S	DEG.		DEG C	DEG C	%	DEG.	M/S	DEG.						
					M/S	MW						M/S	MW						M/S	MW						
0300	-.8	*****	96	149	.7	172	1.9	0	0300	-2.4	*****	3	156	.7	159	1.9	1	0300	1.9	1.6	98	144	.4	163	1.9	0
0600	-1.5	*****	1	157	.8	157	2.5	8	0600	-1.8	*****	3	153	.8	127	1.9	8	0600	2.8	*****	96	135	.7	145	1.9	8
0900	9.0	*****	58	124	.5	155	1.9	70	0900	4.2	-.2	73	080	.3	097	1.9	68	0900	5.7	2.2	78	032	.4	085	1.9	71
1200	10.3	-.9	46	358	1.2	355	2.5	93	1200	10.9	-.6	45	345	1.2	338	1.9	94	1200	8.9	2.5	64	345	1.5	336	3.2	94
1500	16.1	-4.0	25	156	1.8	166	7.0	73	1500	9.8	2.0	58	344	1.8	341	3.2	76	1500	8.7	2.1	63	347	2.1	354	3.8	72
1800	8.5	-.3	54	130	1.0	137	6.3	12	1800	7.8	*****	68	335	1.3	336	2.5	12	1800	10.5	2.6	58	338	1.0	354	3.2	13
2100	3.6	*****	78	332	.6	331	2.5	1	2100	2.6	*****	88	146	.3	006	1.9	1	2100	3.1	*****	87	157	.5	199	1.9	1
2400	-1.0	*****	95	161	.7	167	1.9	0	2400	2.3	*****	94	124	.3	144	1.3	0	2400	-.9	*****	1	160	.6	180	1.9	1

R & M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR EKLUTNA LAKE WEATHER STATION
DATA TAKEN DURING April, 1983

DAY 28

DAY 29

DAY 30

DAY 28								DAY 29								DAY 30								
HOUR	DEW	WIND	WIND	GUST	MAX.			HOUR	DEW	WIND	WIND	GUST	MAX.			HOUR	DEW	WIND	WIND	GUST	MAX.			
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	
	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	
0300	-9	*****	5	148	.6	176	1.9	0300	2.0	*****	8	123	.1	095	1.3	1	0300	2.6	*****	8	117	.2	050	1.3
0600	1.2	-45.3	0	148	.8	156	2.5	0600	2.8	*****	8	126	.3	154	1.3	4	0600	2.8	*****	10	073	.2	108	1.3
0900	4.2	*****	86	316	.4	190	2.5	0900	3.1	*****	7	031	.3	318	1.3	20	0900	5.5	*****	93	001	.7	328	1.9
1200	5.6	*****	75	000	.3	190	1.9	1200	5.8	-42.4	0	353	.6	032	1.3	52	1200	7.9	3.8	75	354	1.5	354	2.5
1500	4.3	4.1	99	337	1.1	308	2.5	1500	4.6	-35.6	3	348	1.4	343	3.2	43	1500	11.2	4.9	65	340	1.5	353	2.5
1800	3.7	*****	7	330	.8	316	2.5	1800	3.8	-34.1	4	328	1.2	324	2.5	6	1800	11.4	4.7	63	298	.6	200	3.2
2100	3.4	*****	9	026	.2	031	1.3	2100	3.9	*****	9	282	.3	331	1.9	0	2100	4.6	*****	94	176	1.1	175	3.2
2400	1.8	*****	8	086	.2	008	1.3	2400	2.9	*****	7	126	.1	344	1.3	1	2400	-8	*****	99	157	.7	142	1.9

R & M CONSULTANTS, INC.

SUSITNA HYDROELECTRIC PROJECT

MONTHLY SUMMARY FOR EKLUTNA LAKE WEATHER STATION
DATA TAKEN DURING April, 1983

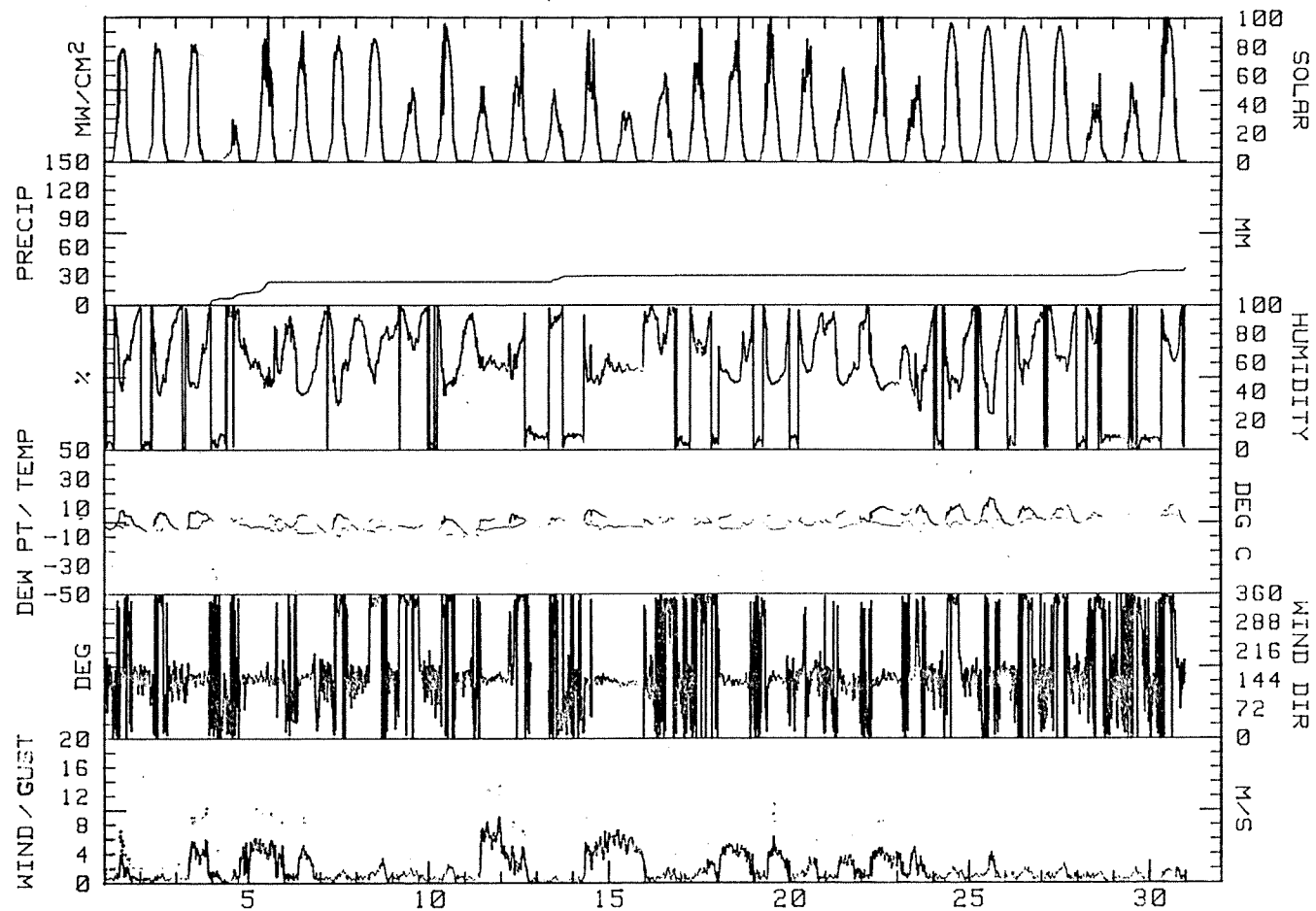
DAY	MAX. TEMP. DEG C	MIN. TEMP. DEG C	MEAN TEMP. DEG C	RES. WIND DIR. DEG	RES. WIND SPD. M/S	AVG. WIND SPD. M/S	MAX. GUST DIR. DEG	MAX. GUST SPD. M/S	P'VAL DIR.	MEAN RH %	MEAN DP DEG C	PRECIP MM	DAY'S SOLAR ENERGY WH/SQM	DAY
1	8.5	-5.4	1.6	126	.3	1.1	139	7.0	SSE			0.0	5225	1
2	7.1	-7.2	-.1	087	.1	.6	131	1.9	SSE			0.0	5608	2
3	7.8	-6.5	.7	150	2.5	2.7	160	10.2	SSE			4.0	5010	3
4	3.6	.1	1.9	119	.5	1.3	153	8.3	NNE			8.2	1243	4
5	7.0	.1	3.6	151	4.1	4.2	159	10.2	SSE	56	-4.2	11.2	5628	5
6	5.7	-4.4	.7	146	1.6	2.0	157	8.9	SSE	48	-7.4	0.0	5385	6
7	6.0	-7.9	-1.0	029	.1	.8	136	2.5	SSE			0.0	5840	7
8	3.4	-5.4	-1.0	358	.5	1.2	359	4.4	N	67	-4.8	0.0	6550	8
9	.7	-4.5	-1.9	353	.4	1.0	345	3.2	NNW			0.0	3323	9
10	4.1	-7.7	-1.8	026	.3	1.0	000	3.8	SE			0.0	6503	10
11	4.0	-10.8	-3.4	151	3.8	4.2	161	13.3	SSE	60	-5.4	0.0	3253	11
12	5.6	-1.7	2.0	102M	.3M	2.4M	152M	8.3M	SSE(M)			0.0	4605	12
13	3.4	-4.8	-.7	017M	.2M	.3M	006M	1.3M	N (M)			6.0	3105	13
14	8.4	-1.2	3.6	143	3.0	3.4	154	11.4	SE			.4	5160	14
15	5.2	.9	3.1	139	5.1	5.2	147	12.1	SE	57	-3.3	0.0	2873	15
16	4.3	-1.8	1.3	341	.4	.8	001	3.8	NNW			.4	4540	16
17	5.1	-1.6	1.8	347	1.1	1.3	306	5.1	N			0.0	5470	17
18	6.0	-1.6	2.2	144	3.7	3.9	156	8.9	SE			0.0	5978	18
19	5.8	-1.2	2.3	146	1.9	2.5	168	10.8	SSE			0.0	5893	19
20	6.2	-1.4	2.4	152	1.0	1.3	135	5.7	SSE			0.0	5488	20
21	7.8	-1.1	3.4	130	1.5	1.8	134	6.3	SE	55	-2.9	0.0	4565	21
22	10.6	-.5	5.1	144	2.5	2.9	146	8.3	SSE	54	-1.8	0.0	6578	22
23	11.7	-1.7	5.0	154	.9	2.0	163	7.6	SSE	51	-2.3	0.0	3898	23
24	12.4	-3.7	4.4	035	.1	1.0	359	3.2	SSE			0.0	7723	24
25	17.0	-2.2	7.4	139	.5	1.3	166	7.0	SSE			0.0	7735	25
26	10.9	-2.9	4.0	360	.3	1.0	341	3.2	NNW			0.0	7725	26
27	12.0	-.9	5.6	002	.4	1.1	354	3.8	NNW			0.0	7625	27
28	6.6	-1.5	2.6	357	.2	.7	156	2.5	N			.2	3203	28
29	5.8	1.6	3.7	347	.4	.7	343	3.2	N			4.8	3520	29
30	12.0	-.8	5.6	346	.3	1.0	200	3.2	N			2.6	8774	30
MONTH	17.0	-10.8	2.1	140M	1.0M	1.8M	161M	13.3M	SSE(M)	M	M	37.8	158021	

GUST VEL. AT MAX. GUST MINUS 2 INTERVALS 10.8
GUST VEL. AT MAX. GUST MINUS 1 INTERVAL 12.7
GUST VEL. AT MAX. GUST PLUS 1 INTERVAL 10.8
GUST VEL. AT MAX. GUST PLUS 2 INTERVALS 10.8

NOTE: RELATIVE HUMIDITY READINGS ARE UNRELIABLE WHEN WIND SPEEDS ARE LESS THAN ONE METER PER SECOND. SUCH READINGS HAVE NOT BEEN INCLUDED IN THE DAILY OR MONTHLY MEAN FOR RELATIVE HUMIDITY AND DEW POINT.

**** SEE NOTES AT THE BACK OF THIS REPORT ****

R&M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT
EKLUTNA LAKE WEATHER STATION
April, 1983



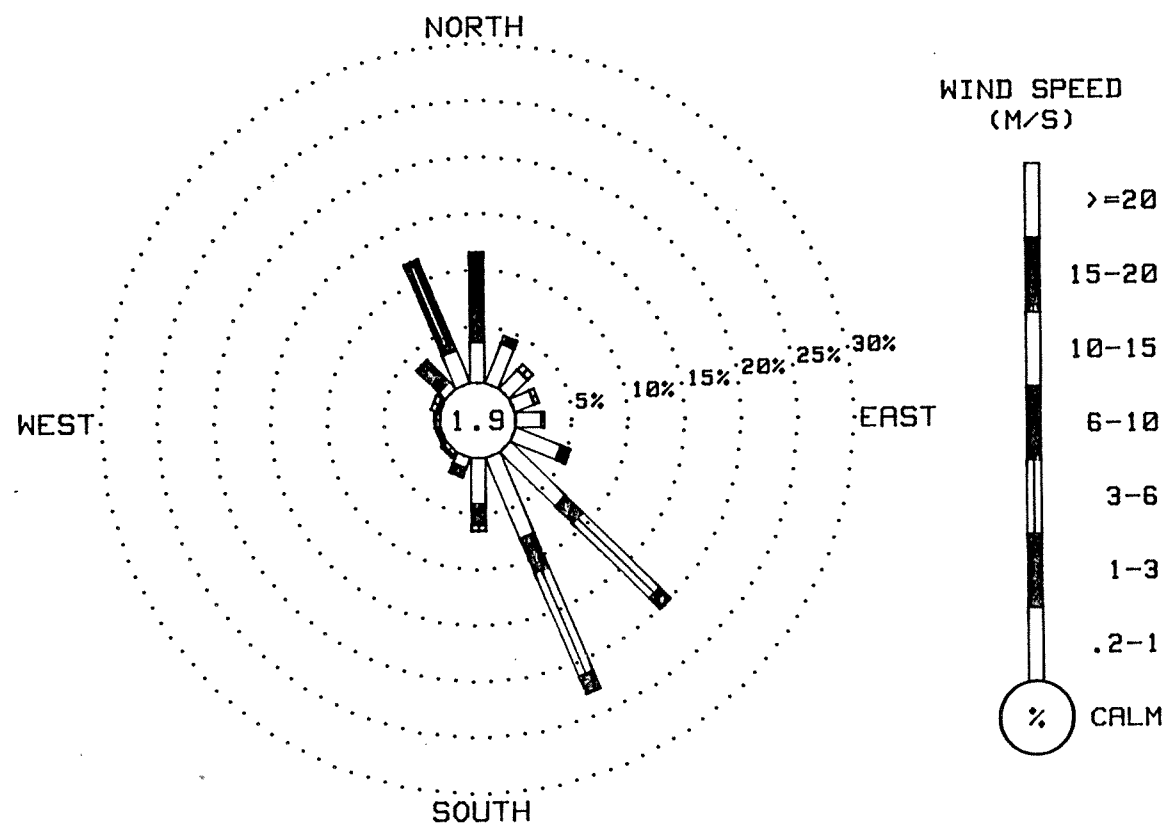
R & M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT

WIND FREQUENCY SUMMARY FOR EKLUTNA LAKE WEATHER STATION
DATA TAKEN DURING April, 1983

DIRECTION	VELOCITY (M/S)							TOTAL
	0.2 TO 1.0	1.0 TO 3.0	3.0 TO 6.0	6.0 TO 10.0	10.0 TO 15.0	15.0 TO 20.0	20.0 OR GREATER	
N	3.60	7.63	.32	0.00	0.00	0.00	0.00	11.55
NNE	3.78	.67	0.00	0.00	0.00	0.00	0.00	4.45
NE	2.33	.64	0.00	0.00	0.00	0.00	0.00	2.97
ENE	1.87	.39	0.00	0.00	0.00	0.00	0.00	2.26
E	2.33	.18	.04	0.00	0.00	0.00	0.00	2.54
ESE	4.38	.71	.18	0.00	0.00	0.00	0.00	5.26
SE	6.89	2.12	9.57	1.34	0.00	0.00	0.00	19.92
SSE	7.81	3.29	10.07	1.66	0.00	0.00	0.00	22.82
S	4.10	1.84	.53	.04	0.00	0.00	0.00	6.50
SSW	1.02	.81	0.00	0.00	0.00	0.00	0.00	1.84
SW	.39	.25	0.00	0.00	0.00	0.00	0.00	.64
WSW	.21	.18	0.00	0.00	0.00	0.00	0.00	.39
W	.39	.14	0.00	0.00	0.00	0.00	0.00	.53
WNW	.35	.57	0.00	0.00	0.00	0.00	0.00	.92
NW	.88	2.72	.04	0.00	0.00	0.00	0.00	3.64
NNW	3.18	8.48	.21	0.00	0.00	0.00	0.00	11.87
CALM								1.91
TOTAL	43.52	30.59	20.95	3.04	0.00	0.00	0.00	100.00

NOTE: ALL FREQUENCIES ARE EXPRESSED IN PERCENT
2831 VALID WIND OBSERVATIONS USED TO DEVELOP FREQUENCY SUMMARY

R&M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT
EKLUTNA LAKE WEATHER STATION
April, 1983



• WIND ROSE PLOT

SUSTINA HYDROELECTRIC PROJECT

DATA TAKEN DURING May, 1983

PRECIPITATION VALUES ARE IN MILLIMETERS

HOUR ENDING

[illegible]

R & M CONSULTANTS, INC.

SUSTITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR EKLUTNA LAKE WEATHER STATION
DATA TAKEN DURING May, 1983

DAY 01

DAY 02

DAY 03

HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD
	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW
0300	*****	*****	**	160	1.0	169	1.9	***	0300	2.1	*****	5	145	.5	150	1.9	1
0600	-.2	*****	8	161	.6	165	1.9	***	0600	2.2	*****	7	045	.1	171	1.3	8
0900	6.7	*****	74	080	.5	026	2.3	68	0900	3.3	-34.4	4	348	.4	347	1.9	37
1200	11.5	2.3	53	342	1.3	347	1.9	96	1200	4.3	3.2	93	344	1.5	338	3.2	51
1500	8.5	1.2	60	348	1.9	336	3.8	34	1500	4.4	3.0	91	350	2.1	347	5.7	36
1800	10.2	1.0	53	309	1.2	215	5.1	9	1800	4.2	2.7	90	350	1.9	009	4.4	20
2100	4.0	*****	89	355	.9	350	5.1	0	2100	2.9	*****	2	343	.8	347	3.2	0
2400	2.8	*****	97	104	.3	023	1.3	0	2400	1.4	*****	5	015	.2	341	2.5	0

DAY 04

DAY 05

DAY 06

HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD
	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW
0300	-7	*****	6	087	.1	008	1.3	0	0300	-9	*****	1	157	.5	156	1.3	0
0600	1.8	*****	1	081	.1	191	1.3	13	0600	-1	-41.0	2	117	.3	338	1.9	14
0900	4.8	2.5	85	004	.5	338	1.9	53	0900	4.5	.7	76	012	.5	355	1.9	39
1200	7.2	-.5	58	144	.7	143	7.0	66	1200	8.9	*****	43	349	1.2	348	2.5	70
1500	7.5	-1.5	53	142	4.1	135	7.6	50	1500	9.4	-3.3	41	136	1.9	157	5.1	60
1800	7.1	-2.7	50	147	3.5	153	6.3	16	1800	8.3	-3.6	43	150	2.9	153	5.7	21
2100	4.6	1.3	79	135	2.5	137	5.7	1	2100	2.5	*****	94	047	.3	156	4.4	0
2400	1.0	*****	95	040	.1	341	3.8	0	2400	-8	*****	2	155	.5	151	1.9	0

DAY 07

DAY 08

DAY 09

HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD
	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW
0300	-2.7	*****	4	156	.5	125	1.3	1	0300	-1.6	*****	1	161	.6	169	1.3	.1
0600	-.6	*****	5	159	.4	158	1.9	13	0600	.8	*****	98	161	.7	171	1.9	17
0900	*****	*****	**	***	*****	087	1.3	***	0900	9.2	*****	55	009	.5	003	1.3	80
1200	10.1	-.2	49	350	1.2	328	3.2	99	1200	10.2	-.1	49	348	1.4	335	3.8	46
1500	10.2	-1.0	46	343	2.0	347	3.8	87	1500	11.1	2.4	55	357	2.0	037	5.7	58
1800	11.9	*****	43	001	1.1	339	2.5	20	1800	7.7	4.5	80	356	2.2	006	4.4	8
2100	4.4	*****	75	170	.6	180	1.9	1	2100	4.2	*****	2	136	.1	276	2.5	1
2400	-.5	-2.1	89	164	.7	166	1.9	0	2400	1.4	*****	0	126	.2	142	1.9	1

R & M CONSULTANTS, INC.

SUSITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR EKLUTNA LAKE WEATHER STATION
DATA TAKEN DURING May, 1983

DAY 10

DAY 11

DAY 12

HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW	
0300	8.3	-5.7	37	146	3.8	146	7.6	1	0300	1.8	*****	77	134	.5	137	1.9	0
0600	2.8	-2.7	67	133	.2	167	6.3	11	0600	3.6	*****	73	120	.3	128	1.9	17
0900	8.9	-4.1	40	081	.1	113	2.5	57	0900	8.5	-3.5	43	083	.6	130	4.4	41
1200	12.2	-11.5	18	148	3.3	158	7.6	112	1200	12.8	-5.4	28	142	.9	001	5.1	62
1500	11.9	-12.4	17	150	4.6	151	8.3	61	1500	11.9	-4.8	31	172	3.3	156	6.3	39
1800	11.0	-13.2	17	151	3.8	150	6.3	18	1800	11.6	-6.0	29	183	2.3	188	5.1	17
2100	9.3	-13.2	19	142	3.2	144	6.3	2	2100	8.3	*****	41	138	1.5	141	5.1	1
2400	1.9	*****	57	174	.8	175	3.8	1	2400	4.6	*****	54	163	.2	013	1.9	1

DAY 13

DAY 14

DAY 15

HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW	
0300	3.4	*****	85	155	.6	157	1.3	0	0300	4.2	*****	80	187	.3	333	2.5	0
0600	6.3	*****	79	146	.5	159	1.9	17	0600	6.1	*****	76	124	.4	155	2.5	18
0900	8.4	3.3	70	342	.7	337	2.5	50	0900	13.4	.3	41	184	.6	167	6.3	59
1200	14.4	2.6	40	333	1.7	321	3.2	127	1200	12.6	-1.1	42	146	3.6	160	7.0	58
1500	13.8	.5	41	153	2.9	153	7.0	99	1500	13.0	-1.7	39	156	4.0	163	7.0	52
1800	12.6	-1.1	42	187	1.0	161	6.3	10	1800	12.2	-1.1	40	156	4.1	153	7.6	19
2100	11.2	-1.4	45	161	3.6	156	6.3	1	2100	9.6	4.2	69	316	.6	005	3.6	1
2400	5.0	*****	87	145	.8	167	5.1	0	2400	4.9	4.4	97	095	.1	014	3.6	0

DAY 16

DAY 17

DAY 18

HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW	
0300	10.2	-1.6	44	140	4.1	137	8.9	1	0300	3.5	3.1	97	028	.4	068	2.5	.0
0600	10.1	-1.7	44	143	4.3	134	7.6	4	0600	5.0	*****	95	108	.3	068	3.2	21
0900	10.6	-1.9	45	143	4.8	146	9.5	25	0900	9.6	3.4	65	349	.8	339	3.2	94
1200	10.9	-1.6	45	151	4.6	147	10.2	24	1200	11.6	.0	45	129	3.3	137	8.3	71
1500	10.3	-1.2	45	154	3.5	148	7.0	16	1500	11.9	-1.4	43	137	5.6	140	9.5	50
1800	10.1	-1.4	45	145	3.5	146	7.0	7	1800	10.3	-1.2	45	149	4.5	144	7.6	21
2100	6.5	4.6	88	149	2.1	133	5.7	1	2100	9.1	-1.7	47	145	3.5	138	6.3	1
2400	4.6	*****	3	010	.2	263	1.9	0	2400	8.2	-2.5	47	138	3.6	144	6.3	1

R & M CONSULTANTS, INC.

SUSITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR EKLUTNA LAKE WEATHER STATION
DATA TAKEN DURING May, 1983

DAY 19

DAY 20

DAY 21

HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.									
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD									
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW			
0300	*****	*****	2	165	.8	165	1.9	***	0300	.9	*****	99	154	.8	161	1.9	1	0300	1.8	*****	97	161	.7	158	1.9	1
0600	*****	*****	**	167	.8	178	1.9	***	0600	4.0	3.4	96	155	.9	170	2.5	11	0600	4.8	*****	93	157	.5	124	1.3	16
0900	9.1	.3	54	075	.2	169	1.9	83	0900	11.6	1.8	51	119	.4	217	2.5	89	0900	10.4	5.4	71	005	1.0	353	5.7	106
1200	11.5	1.7	51	344	1.7	332	3.2	42	1200	14.3	4.0	50	351	1.7	353	3.8	118	1200	10.2	5.2	71	356	2.6	001	5.7	46
1500	11.7	1.9	51	001	2.2	351	5.1	52	1500	14.4	3.8	49	354	1.8	001	3.8	71	1500	10.2	5.6	73	351	2.2	345	3.8	49
1800	11.1	2.2	54	003	2.0	007	3.8	16	1800	13.8	3.3	49	008	1.8	023	4.4	13	1800	8.3	5.9	85	356	2.1	000	3.8	17
2100	8.4	*****	72	015	1.2	059	3.2	1	2100	9.6	4.2	69	002	1.8	012	4.4	1	2100	6.7	*****	5	348	1.3	338	3.2	1
2400	4.7	4.1	96	165	.7	175	1.9	1	2400	4.1	*****	89	056	.2	000	3.2	0	2400	4.9	*****	7	329	.2	333	1.3	1

DAY 22

DAY 23

DAY 24

HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD
	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW
0300	4.3	*****	2	139	.2	139	1.3	1	0300	7.7	-1.0	54	142	3.2	138	7.6	1
0600	5.4	*****	1	048	.1	336	1.3	16	0600	5.6	4.8	95	034	.5	146	5.1	17
0900	8.0	6.0	87	346	.8	332	1.9	46	0900	9.7	-1.4	46	272	.2	143	9.5	40
1200	10.5	6.3	75	345	1.6	354	3.2	64	1200	9.9	-1.5	45	150	3.7	155	8.9	34
1500	10.2	5.4	72	349	1.9	001	5.1	44	1500	10.1	-1.4	45	157	3.3	149	7.6	44
1800	11.2	1.4	51	077	.7	140	5.1	19	1800	8.3	-.5	54	144	3.8	138	7.0	11
2100	9.3	-.3	51	147	3.2	147	7.0	2	2100	7.9	-.3	56	141	3.5	139	6.3	1
2400	8.3	-.5	54	171	.5	161	7.6	0	2400	7.5	.3	60	144	5.0	147	9.5	1

DAY 25

DAY 26

DAY 27

HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.									
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD									
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW			
0300	5.8	*****	95	144	.3	154	1.3	1	0300	8.4	.1	56	158	2.7	142	6.3	1	0300	2.6	*****	83	127	.4	161	1.9	1
0600	5.6	*****	97	103	.1	079	1.3	20	0600	9.8	-.2	50	149	3.4	146	7.0	24	0600	5.2	*****	78	155	.6	166	1.9	16
0900	10.2	3.5	63	335	.6	085	1.9	69	0900	11.1	.2	47	140	3.3	135	6.3	31	0900	8.1	2.0	63	359	.7	078	1.9	32
1200	11.2	4.0	61	343	1.6	000	3.2	54	1200	12.0	.4	45	148	2.8	146	6.3	86	1200	6.3	4.1	86	194	1.0	217	3.8	35
1500	12.2	*****	55	350	1.3	352	3.3	14	1500	12.6	-.4	41	142	3.7	149	7.0	48	1500	11.3	5.5	67	172	1.4	204	4.4	71
1800	10.2	5.2	71	332	.4	277	2.5	14	1800	11.0	-1.5	42	159	3.9	158	6.3	43	1800	11.4	4.9	64	338	1.0	178	3.2	38
2100	9.7	2.4	60	036	.8	262	5.1	1	2100	8.8	-2.2	46	144	3.1	145	5.7	2	2100	9.6	*****	75	333	.4	335	2.5	2
2400	6.2	-39.3	1	076	.7	148	5.1	0	2400	6.9	*****	54	145	2.1	142	6.3	1	2400	3.4	*****	2	136	.5	170	1.9	0

R & M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR EKLUTNA LAKE WEATHER STATION
DATA TAKEN DURING May, 1983

DAY 28

DAY 29

DAY 30

HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW	
0300	2.7	*****	6	156	.6	157	2.5	1	0300	9.5	5.7	77	007	.9	003	2.5	1
0600	5.9	*****	96	135	.3	186	1.9	11	0600	13.9	5.8	58	129	1.6	128	5.1	16
0900	10.3	5.5	72	351	.7	315	2.5	54	0900	16.1	6.0	51	133	2.1	165	5.7	59
1200	15.2	4.2	48	135	3.0	127	6.3	95	1200	18.4	6.2	45	133	2.0	139	5.7	106
1500	14.9	4.0	48	143	3.9	144	7.0	69	1500	18.2	6.4	46	158	4.0	154	8.3	91
1800	14.6	3.7	48	153	3.8	156	8.3	22	1800	16.7	6.2	50	150	3.0	159	7.0	10
2100	13.2	3.8	53	149	3.3	147	6.3	2	2100	15.8	5.1	49	157	2.9	152	8.9	1
2400	12.6	*****	57	151	2.3	142	7.0	1	2400	15.3	5.2	51	161	2.7	158	6.3	1

DAY 31

HOUR	DEW	WIND	WIND	GUST	MAX.			
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW	
0300	8.8	*****	98	206	.4	167	4.4	1
0600	9.4	*****	8	107	.4	118	1.9	12
0900	12.7	4.2	56	145	3.2	149	8.9	28
1200	10.6	4.8	67	148	3.9	147	9.5	36
1500	9.5	6.9	84	145	2.9	140	8.3	54
1800	12.2	4.0	57	151	3.7	146	10.2	15
2100	11.5	3.3	57	150	2.1	161	7.0	1
2400	11.0	3.3	59	145	2.5	131	6.3	1

R & M CONSULTANTS, INC.

SUSITNA HYDROELECTRIC PROJECT

MONTHLY SUMMARY FOR EKLUTNA LAKE WEATHER STATION
DATA TAKEN DURING May, 1983

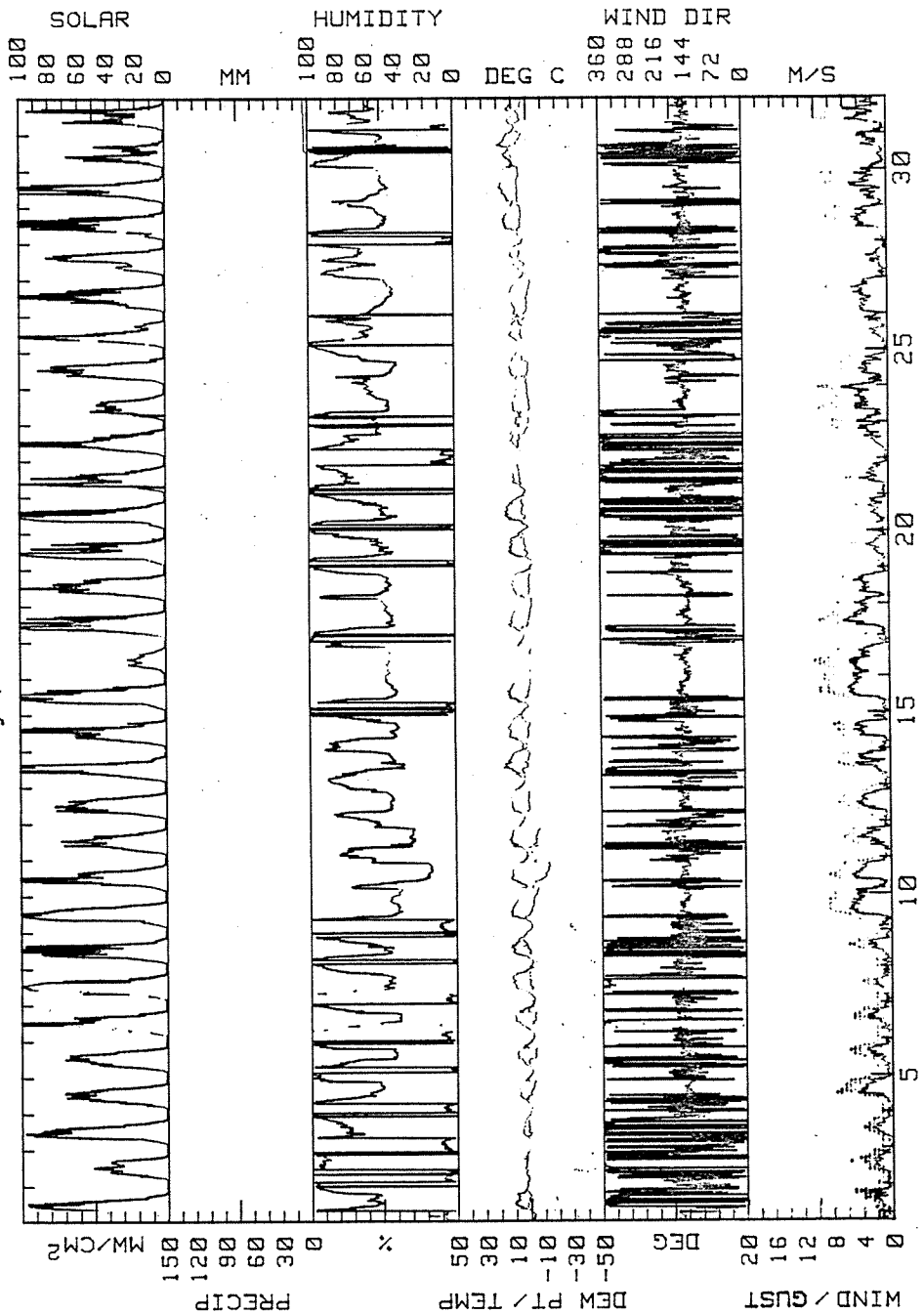
DAY	MAX. TEMP. DEG C	MIN. TEMP. DEG C	MEAN TEMP. DEG C	RES. WIND DIR. DEG	RES. WIND SPD. M/S	AVG. WIND SPD. M/S	MAX. GUST DIR. DEG	MAX. GUST SPD. M/S	P'VAL DIR.	MEAN RH %	MEAN DP DEG C	PRECIP MM	DAY'S SOLAR ENERGY WH/SQK
1	11.5M	-2.3M	4.6M	346	.7	1.3	215	5.1	NNW			0.0	7384 M 1
2	5.6	1.2	3.4	352	.8	1.2	347	5.7	NNW			0.0	4258 2
3	6.3	.4	3.4	353	.8	1.0	001	3.8	N			0.0	6965 3
4	8.2	-7	3.8	140	1.3	1.8	135	7.6	SE			0.0	5798 4
5	9.4	-1.2	4.1	132	.6	1.3	153	5.7	SSE			0.0	5958 5
6	10.8	-2.5	4.2	146	.6	1.4	123	5.1	SSE			0.0	5456M 6
7	12.5M	-2.8M	4.9M	355M	.3M	1.0M	347M	3.8M	NNW(M)			0.0	7946M 7
8	13.2	-1.7	5.8	003	.6	1.1	037	5.7	N			.2	7028 8
9	13.3	-1.6	5.9	148	2.8	3.1	153	8.3	SSE			0.0	8307 9
10	12.9	1.9	7.4	148	2.5	2.9	151	8.3	SSE	29	-9.2	0.0	6903 10
11	13.6	1.0	7.3	158	1.1	1.6	156	6.3	S	33	-5.1	0.0	5358 11
12	13.0	3.1	8.1	148	1.8	2.0	149	7.0	SSE	44	-.1	0.0	6588 12
13	17.1	3.1	10.1	159	.8	1.8	155	7.0	SSE	49	1.3	0.0	8268 13
14	14.4	3.6	9.0	154	1.6	2.1	153	7.6	SSE			.4	6555 14
15	14.4	.1	7.3	150	2.8	3.1	152	9.5	SSE			0.0	8858 15
16	11.1	4.6	7.9	146	3.3	3.5	147	10.2	SE	46	-1.0	0.0	2270 16
17	13.8	2.7	8.3	137	2.5	3.0	140	9.5	SE			0.0	7940 17
18	11.5	-8	5.4	146	2.4	2.6	139	7.0	SE	51	-9	0.0	7005 18
19	13.2M	-2.5M	5.4M	007	.7	1.3	351	5.1	N			0.0	7510M 19
20	15.5	-2	7.7	011	.7	1.3	023	4.4	N			0.0	8253 20
21	10.6	1.5	6.1	356	1.0	1.4	353	5.7	N			0.0	5893 21
22	12.4	4.2	8.3	057	.3	1.6	161	7.6	NNW			0.0	6285 22
23	10.6	5.3	8.0	146	2.8	3.3	143	9.5	SE			0.0	4245 23
24	12.7	6.4	9.6	148	1.4	2.1	145	7.0	SSE	53	5	0.0	6828 24
25	12.7	4.6	8.7	006	.5	1.1	262	5.1	N			0.0	5551M 25
26	12.6	6.2	9.4	146	3.1	3.2	158	8.3	SE			0.0	7148 26
27	11.9	2.2	7.1	175	.2	.9	204	4.4	SSE			.4	5962 27
28	16.3	2.6	9.5	145	2.1	2.4	156	8.3	SSE			0.0	7384M 28
29	19.0	8.9	14.0	147	2.2	2.5	152	8.9	SSE	52	5.9	0.0	6760 29
30	19.6	9.6	14.6	129	.6	1.6	158	7.6	SE			3.2	3720 30
31	13.6	8.2	10.9	148	2.3	2.5	146	10.2	SSE			1.0	4764M 31
MONTH	19.6M	-2.8M	7.4M	141M	1.1M	2.0M	147M	10.2M	SSE(M)	M	M	5.2	199142M

GUST VEL. AT MAX. GUST MINUS 2 INTERVALS	7.6
GUST VEL. AT MAX. GUST MINUS 1 INTERVAL	8.3
GUST VEL. AT MAX. GUST PLUS 1 INTERVAL	7.0
GUST VEL. AT MAX. GUST PLUS 2 INTERVALS	7.0

NOTE: RELATIVE HUMIDITY READINGS ARE UNRELIABLE WHEN WIND SPEEDS ARE LESS THAN ONE METER PER SECOND. SUCH READINGS HAVE NOT BEEN INCLUDED IN THE DAILY OR MONTHLY MEAN FOR RELATIVE HUMIDITY AND DEW POINT.

**** SEE NOTES AT THE BACK OF THIS REPORT ****

R&M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT
EKLUTNA LAKE WEATHER STATION
May, 1983



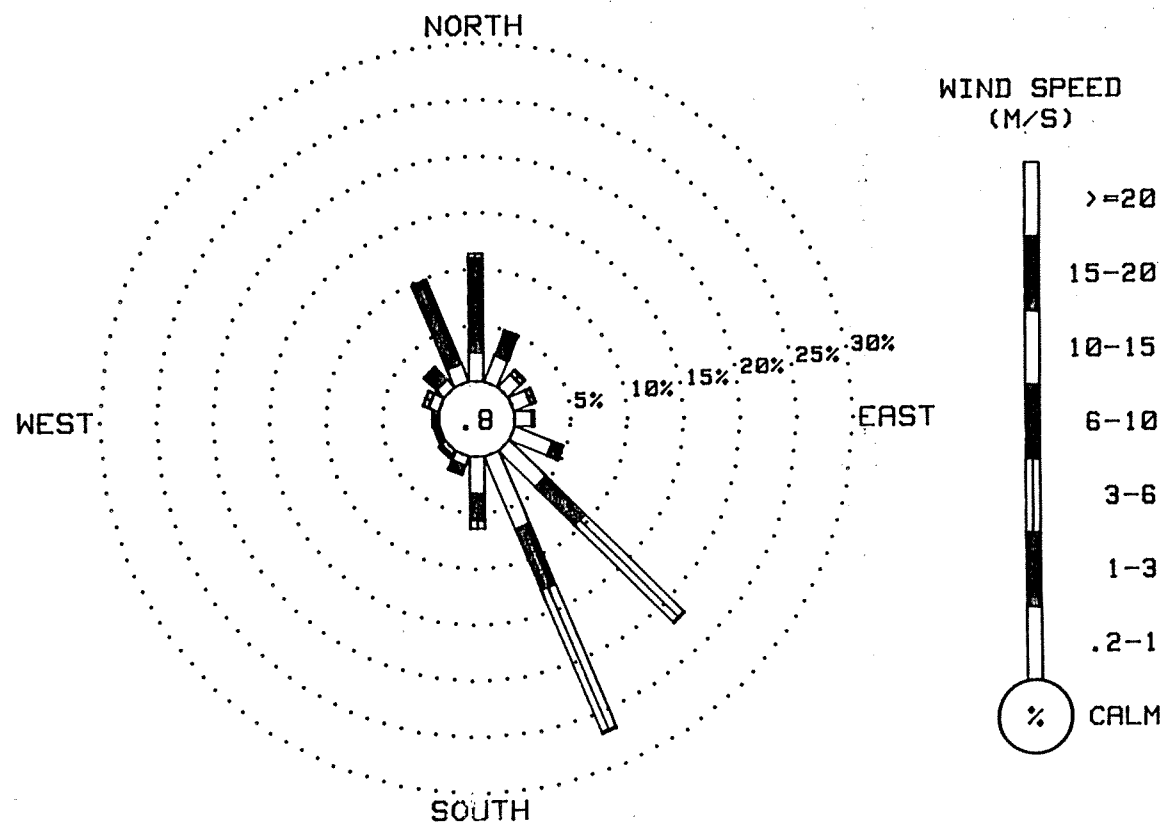
R & M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT

WIND FREQUENCY SUMMARY FOR EKLUTNA LAKE WEATHER STATION
DATA TAKEN DURING May, 1983

DIRECTION	VELOCITY (M/S)							TOTAL
	0.2	1.0	3.0	6.0	10.0	15.0	20.0	
	TO 1.0	TO 3.0	TO 6.0	TO 10.0	TO 15.0	TO 20.0	OR GREATER	
N	2.61	8.28	.41	0.00	0.00	0.00	0.00	11.30
NNE	2.54	2.23	.10	0.00	0.00	0.00	0.00	4.88
NE	1.58	.45	.10	0.00	0.00	0.00	0.00	2.13
ENE	1.61	.41	.03	0.00	0.00	0.00	0.00	2.06
E	1.58	.17	0.00	0.00	0.00	0.00	0.00	1.75
ESE	3.67	.89	.14	0.00	0.00	0.00	0.00	4.70
SE	4.60	4.81	12.33	.10	0.00	0.00	0.00	21.84
SSE	7.01	5.84	13.80	.14	0.00	0.00	0.00	26.79
S	3.30	2.34	.76	0.00	0.00	0.00	0.00	6.39
SSW	.89	.79	.03	0.00	0.00	0.00	0.00	1.72
SW	.48	.24	.03	0.00	0.00	0.00	0.00	.76
WSW	.24	.17	.03	0.00	0.00	0.00	0.00	.45
W	.21	.34	.03	0.00	0.00	0.00	0.00	.58
WNW	1.03	.48	.03	0.00	0.00	0.00	0.00	1.55
NW	1.00	1.55	.03	0.00	0.00	0.00	0.00	2.58
NNW	1.75	8.04	0.00	0.00	0.00	0.00	0.00	9.79
CALM								.76
TOTAL	34.10	37.02	27.88	.24	0.00	0.00	0.00	100.00

NOTE: ALL FREQUENCIES ARE EXPRESSED IN PERCENT
2912 VALID WIND OBSERVATIONS USED TO DEVELOP FREQUENCY SUMMARY

R&M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT
EKLUTNA LAKE WEATHER STATION
May, 1983



R & M CONSULTANTS, INC.

SUSITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR SUSITNA LAKE WEATHER STATION
DATA TAKEN DURING June, 1983

DAY 01

DAY 02

DAY 03

HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW	
0300	11.1	2.9	57	140	3.4	143	8.3	1	0300	6.8	*****	7	093M	.2M	001M	1.3M	1
0600	11.8	2.8	54	136	3.5	151	8.3	18	0600	8.4	*****	0	082	.1	137	1.3	17
0900	9.4	6.5	82	012	1.7	069	5.1	47	0900	10.3	7.4	82	343	1.0	334	2.5	79
1200	12.9	4.1	55	345	1.4	349	3.2	49	1200	10.5	7.7	83	352	1.4	000	3.2	54
1500	12.6	6.3	65	072	.6	109	5.1	64	1500	9.9	8.2	89	359	2.1	001	4.4	29
1800	12.1	6.0	66	006	2.5	001	5.1	20	1800	8.1	*****	15	342	.7	355	3.2	4
2100	8.5	*****	86	353	1.0	358	3.8	1	2100	7.6	*****	13	126M	.4M	136M	1.3M	1
2400	6.9	*****	13	136M	.2M	312M	1.3M	1	2400	7.0	*****	10	074	.1	036	1.3	0

DAY 04

DAY 05

DAY 06

HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW	
0300	5.6	*****	4	131	.1	131	1.9	1	0300	3.7	*****	13	138	.2	175	1.3	1
0600	6.8	*****	99	126	.3	114	1.3	18	0600	6.0	*****	4	162M	.7M	163M	1.3M	11
0900	7.9	*****	84	336	.7	297	1.9	36	0900	11.3	5.0	65	358	.6	344	1.9	89
1200	9.8	5.6	75	345M	1.2M	353M	2.5M	46	1200	15.0	7.1	59	330	1.6	332	3.2	109
1500	9.8	*****	77	354	1.0	009	2.5	13	1500	15.2	7.3	59	353	2.0	359	4.4	91
1800	9.6	*****	81	014	.3	003	1.9	9	1800	14.3	6.7	60	003	2.2	357	3.8	35
2100	8.2	*****	98	000	.6	356	2.5	1	2100	10.0	*****	91	338	.8	000	2.5	2
2400	6.5	*****	7	129	.3	090	1.3	0	2400	3.9	*****	14	163	.4	330	1.3	1

DAY 07

DAY 08

DAY 09

HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW	
0300	1.4	*****	13	158M	.6M	162	1.3	2	0300	-3	*****	15	166M	.8M	185	1.9	2
0600	1.8	*****	11	164M	.7M	179M	1.9M	11	0600	*****	*****	**	160M	.7M	169	1.9	***
0900	14.6	*****	**	022M	.4M	356M	1.9M	***	0900	13.1	3.5	52	048M	.4M	105	1.9	89
1200	16.7	4.0	43	351	1.7	000	3.8	112	1200	15.3	5.5	52	338M	1.4M	339M	2.5M	48
1500	15.1	3.5	46	358	1.9	346	3.8	29	1500	17.0	*****	42	350	1.1	340	2.5	42
1800	15.3	3.1	44	359	1.3	002	3.2	45	1800	16.1	*****	44	068	.3	145	2.5	15
2100	9.4	*****	78	050	.2	351	2.5	2	2100	11.5	*****	73	162	.5	188	2.5	3
2400	2.4	*****	11	162	.6	160	1.9	1	2400	*****	*****	11	160M	.6M	131	1.3	0

R & M CONSULTANTS, INC.

SUSITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR EKLUTNA LAKE WEATHER STATION
DATA TAKEN DURING June, 1983

DAY 10

DAY 11

DAY 12

HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	TEMP.	POINT	RH	DIR.	SPD.	DIR.	TEMP.	POINT	RH	DIR.	SPD.
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.	M/S	DEG.	DEG C	DEG C	%	DEG.	M/S
0300	3.8	*****	17	148M	.5M	156M	0300	6.7	*****	10	146	.4	0300	9.9	-.6	48	140M
0600	5.2	*****	13	111M	.5M	173M	0600	8.8	*****	19	132M	.2M	0600	10.8	1.1	51	149
0900	*****	*****	**	041M	.4M	064	0900	11.7	9.1	84	346	.7	0900	13.3	.6	42	129
1200	14.1	6.3	59	339	1.3	340	1200	15.8	4.8	48	343	1.7	1200	14.0	.9	41	153
1500	11.9	9.5	85	343	1.5	338	1500	15.9	1.5	38	144	2.6	1500	14.5	1.0	40	179
1800	11.6	*****	78	085	.3	161	1800	12.7	.0	42	138	4.4	1800	14.1	1.0	41	156
2100	9.8	*****	6	114	.3	136	2100	10.9	-1.0	44	151	4.4	2100	12.3	1.6	48	155
2400	7.2	*****	13	146	.4	166	2400	10.0	-.5	48	142M	3.3M	2400	8.8	5.2	78	150

DAY 13

DAY 14

DAY 15

HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.	M/S	DEG.	DEG C	DEG C	%	DEG.	M/S
0300	5.9	*****	3	096M	.2M	026M	0300	4.3	*****	9	154M	.6M	0300	5.0	*****	7	148M
0600	*****	*****	89	109M	.2M	115M	0600	8.5	*****	1	085M	.2M	0600	8.5	*****	12	063M
0900	12.7	4.4	57	348M	.3M	199M	0900	12.6	7.5	71	059	.3	0900	10.6	7.7	82	351M
1200	15.3	4.3	48	342	1.4	345	1200	15.0	4.1	48	148	2.0	1200	12.8	6.7	66	341
1500	15.7	6.2	53	000	1.5	352	1500	15.0	3.4	46	151	3.8	1500	13.2	9.5	78	356
1800	14.5	2.3	44	037	1.1	353	1800	14.0	2.5	46	150	3.8	1800	11.9	9.5	85	358
2100	11.1	*****	84	119	1.2	136	2100	12.1	*****	52	146M	2.5M	2100	9.6	*****	6	352
2400	6.1	*****	**	087	.3	036	2400	7.8	*****	95	021	.2	2400	*****	*****	14	140M

DAY 16

DAY 17

DAY 18

HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.	M/S	DEG.	DEG C	DEG C	%	DEG.	M/S
0300	6.1	*****	0	140	.3	181	0300	*****	*****	**	154M	.5M	0300	4.2	*****	8	166
0600	*****	*****	**	139M	.2M	147M	0600	*****	*****	2	155M	.4M	0600	6.0	*****	**	162M
0900	11.9	*****	86	153M	.4M	165M	0900	14.8	7.4	61	006M	.5M	0900	17.4	8.9	57	018M
1200	13.8	8.3	69	353	1.4	338	1200	18.5	7.0	47	346	1.5	1200	21.0	10.2	50	343
1500	17.1	7.8	54	351	1.5	352	1500	19.5	7.6	46	356	1.9	1500	23.1	1.9	25	177
1800	14.7	6.3	57	014	1.7	357	1800	19.1	6.2	43	349	1.6	1800	21.4	1.0	26	155
2100	10.6	*****	90	001	.8	320	2100	13.4	7.7	68	007	.4	2100	18.8	2.1	33	155
2400	*****	*****	**	***	***	180	2400	5.9	*****	11	145	.5	2400	13.5	9.2	75	298M

R & M CONSULTANTS, INC.

SUSITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR EKLUTNA LAKE WEATHER STATION
DATA TAKEN DURING June, 1983

DAY 19

DAY 20

DAY 21

HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW	
0300	8.4	*****	6	139	.5	049	1.9	2	0300	4.3	-23.7	11	163M	.5M	265M	1.9M	2
0600	11.1	-39.0	0	131M	.4M	101M	1.9M	5	0600	*****	*****	14	155M	.6M	084M	1.9M	12
0900	13.7	10.9	83	354	1.0	350	3.2	60	0900	14.8	8.8	67	015M	.5M	065	1.9	92
1200	17.5	10.7	64	350	1.7	353	3.8	146	1200	18.6	9.4	55	345	1.6	353	3.2	114
1500	18.3	10.7	61	356	2.4	359	4.4	102	1500	19.0	9.8	55	353	1.7	355	3.8	91
1800	16.0	10.0	67	358	2.2	354	3.8	31	1800	17.4	10.4	63	003	1.6	002	3.2	33
2100	*****	*****	82	356	1.4	011	4.4	3	2100	12.5	*****	85	013	1.4	011	4.4	2
2400	7.8	*****	16	116M	.2M	029	2.5	0	2400	7.9	-20.9	11	152	.5	085	1.3	1
0300	4.7	*****	11	155	.6	138	1.3	3	0300	15.4	7.7	60	011M	.8M	025M	1.9M	89
0600	*****	*****	7	160M	.5M	159M	1.3M	24	0600	18.7	10.1	57	342M	1.5M	349	3.2	109
0900	15.4	7.7	60	011M	.8M	025M	1.9M	89	0900	20.3	11.0	55	349	1.6	346	3.2	86
1200	18.7	10.1	57	342M	1.5M	349	3.2	109	1200	18.9	11.1	60	000	1.9	004	3.8	28
1500	20.3	11.0	55	349	1.6	346	3.2	86	1500	15.6	10.2	70	007	1.6	019	3.8	1
1800	18.9	11.1	60	000	1.9	004	3.8	28	1800	12.9	*****	94	023M	.2M	289	1.9	0
2100	15.6	10.2	70	007	1.6	019	3.8	1	2100								
2400	12.9	*****	94	023M	.2M	289	1.9	0	2400								

DAY 22

DAY 23

DAY 24

HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW	
0300	11.1	*****	3	041	.2	093	3.2	2	0300	8.6	*****	16	145M	.5M	155M	1.9M	3
0600	11.2	*****	7	141	.5	110	1.3	21	0600	11.0	*****	98	157M	.7M	176	1.9	26
0900	14.9	10.0	72	351M	.6M	005M	1.9M	101	0900	14.5	*****	76	339M	.7M	160M	1.9M	43
1200	19.6	11.2	58	346	1.4	352	2.5	104	1200	18.2	7.3	49	354	1.2	357	3.2	64
1500	20.3	11.0	55	345	1.5	335	3.8	96	1500	20.5	5.2	37	069	.5	036	6.3	97
1800	18.3	12.2	67	353	1.5	007	3.2	24	1800	17.8	4.3	41	147	4.2	138	7.0	15
2100	15.2	*****	76	129	.1	306	1.9	3	2100	17.0	4.3	43	141	3.0	147	6.3	2
2400	10.7	*****	4	142	.4	175	1.9	1	2400	13.1	10.8	86	142	1.8	140	5.1	1
0300	9.2	*****	10	110	.4	088	2.5	4	0300	12.8	*****	91	141M	.4M	169M	1.9M	25
0600	12.8	*****	91	141M	.4M	169M	1.9M	25	0600	16.1	10.5	69	354M	.8M	336M	1.9M	47
0900	16.1	10.5	69	354M	.8M	336M	1.9M	47	0900	18.8	11.9	64	340	1.2	354	2.5	60
1200	18.8	11.9	64	340	1.2	354	2.5	60	1200	21.2	11.0	52	339	1.4	333	3.2	92
1500	21.2	11.0	52	339	1.4	333	3.2	92	1500	19.9	8.6	48	354	1.4	333	3.8	44
1800	19.9	8.6	48	354	1.4	333	3.8	44	1800	11.9	*****	61	072	.2	065	1.9	3
2100	11.9	*****	61	072	.2	065	1.9	3	2100	5.6	*****	99	165M	.7M	140	1.9	1
2400	5.6	*****	99	165M	.7M	140	1.9	1	2400								

DAY 25

DAY 26

DAY 27

HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW	
0300	4.3	-33.7	4	162M	.8M	170M	2.5M	2	0300	11.6	*****	2	008M	1.1M	010	3.8	1
0600	6.8	*****	0	158M	.8M	158M	2.5M	14	0600	12.6	12.3	98	149M	.5M	001M	1.9M	26
0900	19.0	5.0	40	041	.3	133	1.9	95	0900	17.5	7.6	52	132	2.2	141	7.0	44
1200	22.5	.9	24	015M	.9M	140	7.6	34	1200	16.7	11.1	69	018	1.2	149	4.4	53
1500	21.9	7.6	40	133	1.1	138	6.3	64	1500	17.1	7.2	52	015M	1.4M	158	4.4	36
1800	19.5	8.2	48	356	1.3	007	4.4	13	1800	15.7	10.9	73	109M	.9M	145	5.7	14
2100	16.3	7.3	55	107	1.3	112	6.3	1	2100	13.6	*****	87	010M	1.1M	010M	3.2M	3
2400	14.0	9.7	75	134M	1.1M	139M	6.3M	1	2400	8.6	-12.0	22	110	.4	019	1.9	1
0300	7.2	*****	11	161M	.7M	156M	1.9M	3	0300	16.7	11.3	70	348M	1.1M	335M	3.2M	90
0600	*****	*****	**	162M	.6M	137M	1.9M	**	0600	17.0	10.7	66	036M	1.2M	096M	6.3M	80
0900	16.7	11.3	70	348M	1.1M	335M	3.2M	90	0900	17.1	10.8	66	005	2.2	003	4.4	54
1200	17.0	10.7	66	036M	1.2M	096M	6.3M	80	1200	15.9	10.5	70	005	1.8	010	3.8	21
1500	17.1	10.8	66	005	2.2	003	4.4	54	1500	12.0	*****	5	018	.7	002	3.2	2
1800	15.9	10.5	70	005	1.8	010	3.8	21	1800	8.9	*****	**	144M	.7M	158M	1.3M	0
2100	12.0	*****	5	018	.7	002	3.2	2	2100								
2400	8.9	*****	**	144M	.7M	158M	1.3M	0	2400								

R & M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR EKLUTNA LAKE WEATHER STATION
DATA TAKEN DURING June, 1983

DAY 28

DAY 29

DAY 30

DAY 28										DAY 29										DAY 30									
HR	DEW	WIND	WIND	GUST	MAX.	HR	DEW	WIND	WIND	GUST	MAX.	HR	DEW	WIND	WIND	GUST	MAX.												
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD												
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW													
0300	7.7	*****	11	155M	.5M	133M	1.9M	3	0300	5.7	-19.0	15	155M	.6M	180M	1.9M	2												
0600	11.1	*****	1	143M	.6M	164M	1.9M	26	0600	9.5	*****	4	160M	.7M	170M	1.9M	23												
0900	16.1	6.8	54	129M	1.6M	137M	7.0M	45	0900	*****	*****	**	342M	.6M	096M	1.9M	***												
1200	17.5	6.4	48	142M	3.1M	134M	7.6M	48	1200	16.5	9.5	63	329M	.7M	347M	1.9M	66												
1500	16.4	5.3	48	146	3.8	139	7.6	54	1500	16.8	11.2	69	354M	1.4M	350	3.2	47												
1800	16.5	5.4	48	153	4.1	140	7.6	27	1800	15.2	10.9	75	002	1.5	359	3.2	17												
2100	12.1	*****	74	168	1.9	160	5.7	3	2100	13.4	*****	83	005	1.2	012	3.2	2												
2400	6.1	*****	19	128	.4	117	1.9	0	2400	9.3	*****	17	154	.4	093	1.9	0												
0300	8.4	*****	12	162M	.5M	125M	1.3M	1	0300	8.4	*****	12	162M	.5M	125M	1.3M	1												
0600	11.5	*****	0	143M	.5M	173M	1.9M	23	0600	11.5	*****	0	143M	.5M	173M	1.9M	23												
0900	15.9	*****	63	012	.6	348	1.9	110	0900	15.9	*****	63	012	.6	348	1.9	110												
1200	18.9	10.0	56	338	1.4	339	2.5	127	1200	18.9	10.0	56	338	1.4	339	2.5	127												
1500	19.7	10.2	54	001	2.3	005	4.4	99	1500	19.7	10.2	54	001	2.3	005	4.4	99												
1800	19.0	10.1	56	007	1.9	014	3.8	27	1800	19.0	10.1	56	007	1.9	014	3.8	27												
2100	15.3	*****	77	042	.6	032	3.2	2	2100	15.3	*****	77	042	.6	032	3.2	2												
2400	12.8	*****	8	131	.4	112	1.3	1	2400	12.8	*****	8	131	.4	112	1.3	1												

R & M CONSULTANTS, INC.

SUSITNA HYDROELECTRIC PROJECT

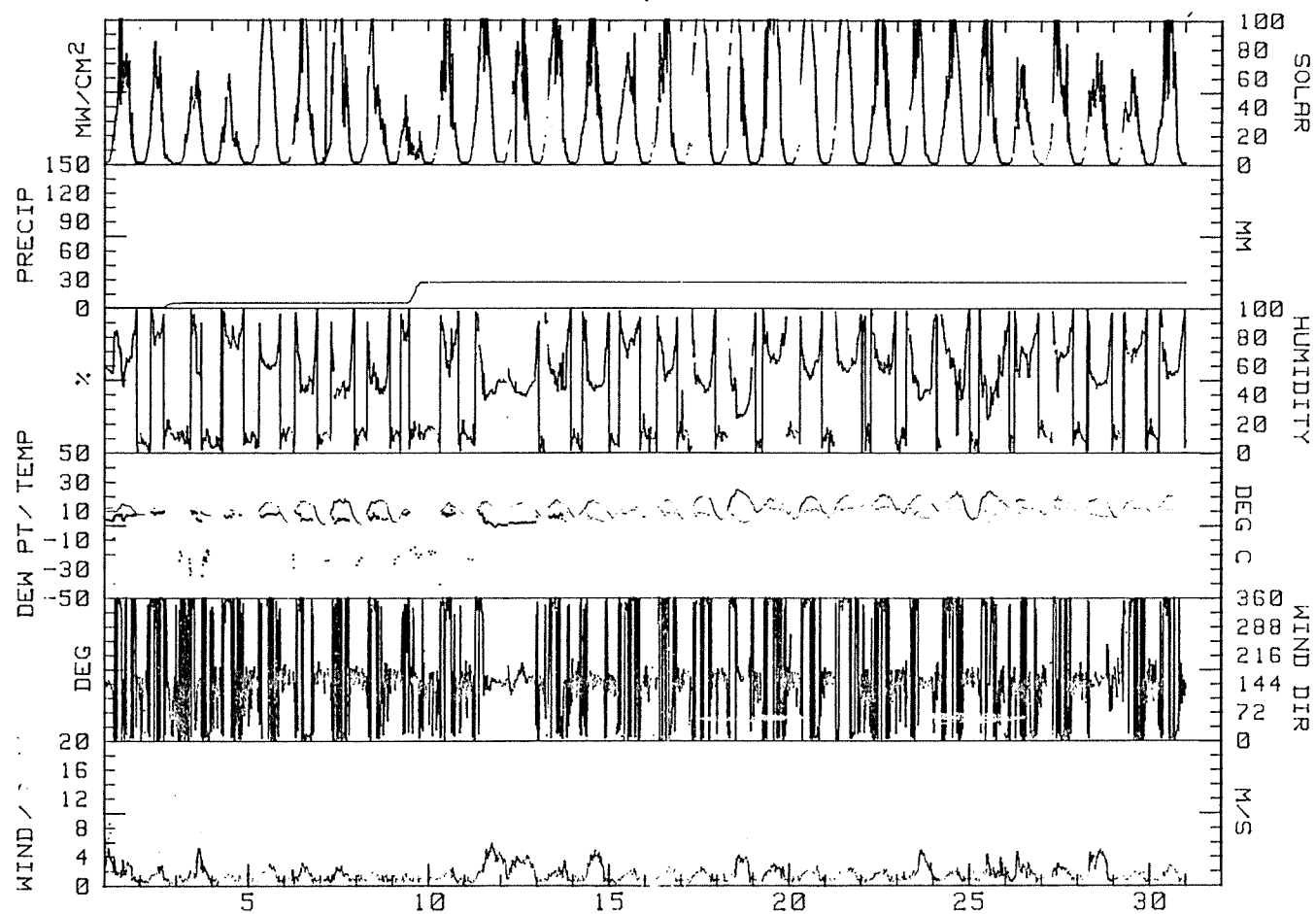
MONTHLY SUMMARY FOR EKLUTNA LAKE WEATHER STATION
DATA TAKEN DURING June, 1983

DAY	MAX. TEMP. DEG C	MIN. TEMP. DEG C	MEAN TEMP. DEG C	RES. WIND DIR. DEG	RES. WIND SPD. M/S	AVG. WIND SPD. M/S	MAX. GUST DIR. DEG	MAX. GUST SPD. M/S	P'VAL	MEAN RH %	MEAN DP DEG C	PRECIP MM	DAY'S SOLAR ENERGY WH/SQM	DAY
1	14.4	6.7	10.6	075M	.7M	2.1M	143M	8.3M	N (M)			0.0	7374	1
2	11.8	6.7	9.3	359M	.7M	.9M	001M	4.4M	N (M)			4.4	5239	2
3	12.3	6.0	9.2	035M	.6M	1.5M	139M	7.0M	N (M)			.2	4557	3
4	10.7	5.3	8.0	002M	.4M	.7M	353M	2.5M	N (M)			0.0	3567	4
5	15.9	3.7	9.8	353M	.7M	1.1M	359M	4.4M	N (M)			0.0	10490	5
6	16.4M	1.1M	8.8M	016M	.6M	1.2M	008M	4.4M	N (M)			0.0	9061M	6
7	17.9M	-.1M	8.9M	008M	.5M	1.1M	000M	3.8M	N (M)			0.0	9549M	7
8	17.0M	-.3M	8.4M	050M	.1M	.9M	339M	2.5M	S (M)			0.0	6973M	8
9	10.8	1.2	6.0	142M	.2M	.7M	356M	3.2M	SSE (M)			21.6	2677	9
10	15.8M	3.0M	9.4M	019M	.3M	.9M	338M	3.8M	NNW (M)			.2	8365M	10
11	16.4M	6.3M	11.4M	141M	1.7M	2.4M	138M	8.9M	SE (M)			.2	9913M	11
12	15.4M	8.8M	12.1M	153M	2.6M	2.7M	135M	6.3M	SSE (M)			0.0	8225M	12
13	17.3M	5.7M	11.5M	031M	.5M	1.1M	136M	5.1M	N (M)			0.0	9731M	13
14	17.0M	4.0M	10.5M	147M	1.6M	2.0M	168M	7.6M	SSE (M)			0.0	8784M	14
15	14.5M	4.1M	9.3M	358M	.7M	.9M	006M	3.2M	N (M)			0.0	7005M	15
16	17.4M	5.4M	11.4M	007M	.7M	1.1M	320M	5.1M	N (M)			0.0	8687M	16
17	20.9M	3.6M	12.3M	357M	.7M	1.1M	346M	3.8M	N (M)			0.0	12080M	17
18	24.2M	3.3M	13.8M	159M	1.1M	1.8M	182M	7.0M	SSE (M)			0.0	10379M	18
19	18.4M	6.9M	12.7M	360M	1.1M	1.4M	359M	4.4M	N (M)			0.0	11924M	19
20	19.8M	3.5M	11.7M	003M	.8M	1.2M	011M	4.4M	N (M)			0.0	11534M	20
21	20.4M	4.3M	12.4M	359M	.9M	1.2M	004M	3.8M	N (M)			0.0	10722M	21
22	21.5	9.0	15.3	358M	.5M	1.0M	335M	3.8M	NNW (M)			0.0	9400	22
23	20.6M	7.4M	14.0M	137M	1.2M	1.9M	138M	7.0M	SE (M)			0.0	8546M	23
24	23.3M	5.5M	14.4M	357M	.5M	1.0M	333M	3.8M	NNW (M)			0.0	9345M	24
25	23.4M	3.4M	13.4M	101M	.5M	1.5M	140M	7.6M	SE (M)			0.0	7605M	25
26	17.8M	8.2M	13.0M	063M	.6M	1.5M	141M	7.0M	N (M)			0.0	5333M	26
27	19.4M	6.8M	13.1M	019M	.8M	1.4M	096M	6.3M	N (M)			0.0	8075M	27
28	18.1M	6.1M	12.1M	148M	2.0M	2.2M	134M	7.6M	SSE (M)			0.0	6738M	28
29	16.8M	4.9M	10.9M	002M	.6M	1.0M	350M	3.2M	N (M)			0.0	5291M	29
30	20.4	8.2	14.3	009M	.8M	1.1M	005M	4.4M	N (M)			0.0	9450	30
MONTH	24.2M	-.3M	11.2M	069M	.3M	1.4M	138M	8.9M	N (M)	M	M	26.6	246621	
GUST VEL. AT MAX. GUST MINUS 2 INTERVALS														7.6
GUST VEL. AT MAX. GUST MINUS 1 INTERVAL														6.3
GUST VEL. AT MAX. GUST PLUS 1 INTERVAL														7.6
GUST VEL. AT MAX. GUST PLUS 2 INTERVALS														7.6

NOTE: RELATIVE HUMIDITY READINGS ARE UNRELIABLE WHEN WIND SPEEDS ARE LESS THAN ONE METER PER SECOND. SUCH READINGS HAVE NOT BEEN INCLUDED IN THE DAILY OR MONTHLY MEAN FOR RELATIVE HUMIDITY AND DEW POINT.

**** SEE NOTES AT THE BACK OF THIS REPORT ****

R&M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT
EKLUTNA LAKE WEATHER STATION
June, 1983



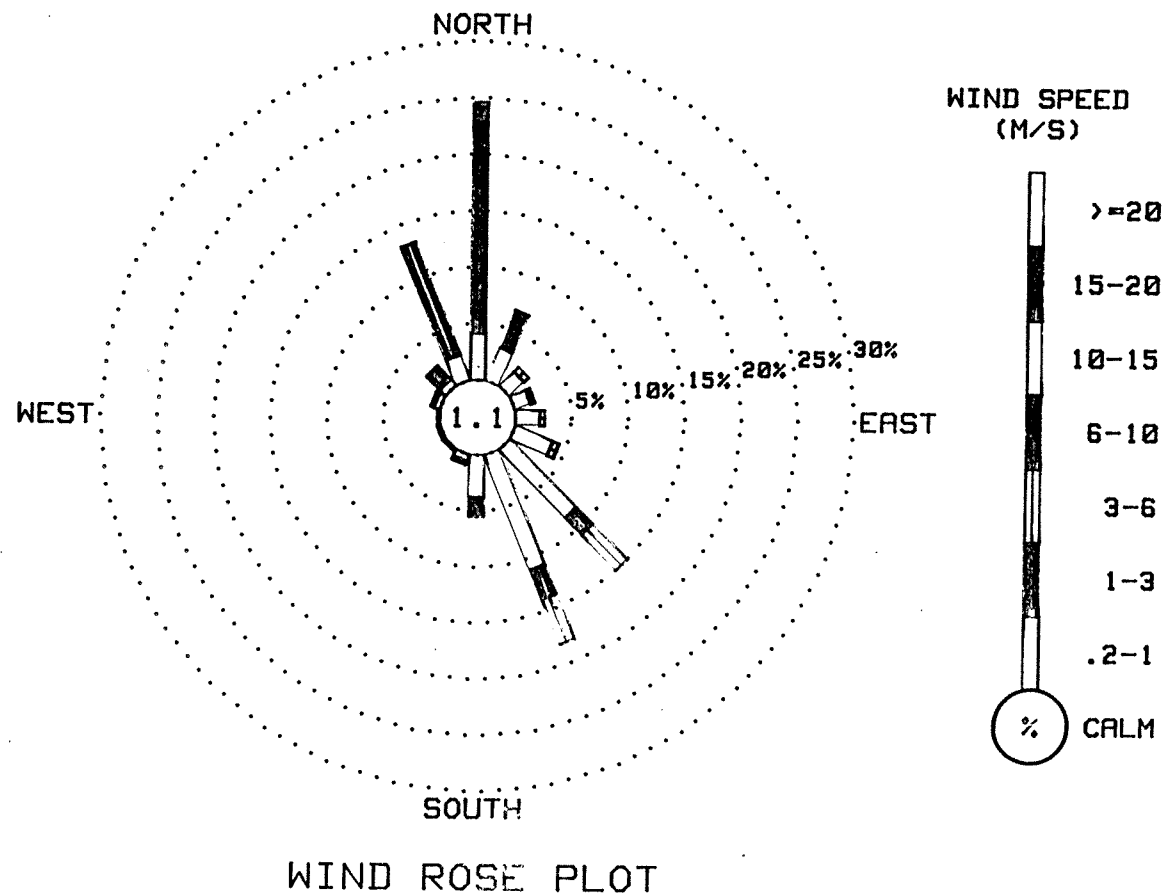
R & M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT

WIND FREQUENCY SUMMARY FOR EKLUTNA LAKE WEATHER STATION
DATA TAKEN DURING June, 1983

DIRECTION	VELOCITY (M/S)							TOTAL
	0.2	1.0	3.0	6.0	10.0	15.0	20.0	
	TO 1.0	TO 3.0	TO 6.0	TO 10.0	TO 15.0	TO 20.0	OR GREATER	
N	4.15	20.20	.19	0.00	0.00	0.00	0.00	24.54
NNE	3.16	3.51	.04	0.00	0.00	0.00	0.00	6.71
NE	1.79	.53	0.00	0.00	0.00	0.00	0.00	2.32
ENE	1.49	.34	.04	0.00	0.00	0.00	0.00	1.87
E	2.17	.46	0.00	0.00	0.00	0.00	0.00	2.63
ESE	3.62	.57	.04	0.00	0.00	0.00	0.00	4.23
SE	8.46	2.02	4.50	0.00	0.00	0.00	0.00	14.98
SSE	10.98	2.78	4.38	0.00	0.00	0.00	0.00	18.14
S	3.77	1.26	.42	0.00	0.00	0.00	0.00	5.45
SSW	.61	.30	0.00	0.00	0.00	0.00	0.00	.91
SW	.15	.04	0.00	0.00	0.00	0.00	0.00	.19
WSW	.11	.11	0.00	0.00	0.00	0.00	0.00	.23
W	.15	.04	0.00	0.00	0.00	0.00	0.00	.19
WNW	.61	.30	0.00	0.00	0.00	0.00	0.00	.91
NW	.80	1.64	0.00	0.00	0.00	0.00	0.00	2.44
NNW	2.44	10.71	0.00	0.00	0.00	0.00	0.00	13.15
CALM								1.11
TOTAL	44.47	44.82	9.60	0.00	0.00	0.00	0.00	100.00

NOTE: ALL FREQUENCIES ARE EXPRESSED IN PERCENT
2624 VALID WIND OBSERVATIONS USED TO DEVELOP FREQUENCY SUMMARY

R&M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT
EKLUTNA LAKE WEATHER STATION
June, 1983



R & M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT

HOURLY PRECIPITATION SUMMARY FOR EKLUTNA LAKE WEATHER STATION
DATA TAKEN DURING July, 1983

PRECIPITATION VALUES ARE IN MILLIMETERS

HOUR ENDING

DATE	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	DATE
1	.4	.2	0.0	.2	.8	1.0	.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.6	.6	0.0	1
2	0.0	0.0	0.0	0.0	.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1
3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1
4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1
5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1
6	0.0	0.0	0.0	0.0	0.0	0.0	.2	.4	0.0	0.0	0.0	0.0	.6	.2	0.0	0.0	0.0	.2	.2	0.0	0.0	0.0	0.0	0.0	1
7	0.0	.2	****	****	.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1
8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1
9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1
10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.2	0.0	0.0	.4	.2	1
11	0.0	0.0	.2	.4	0.0	.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.2	.2	0.0	.8	****	1
12	.4	0.0	0.0	0.0	0.0	.2	.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1
13	0.0	0.0	0.0	0.0	0.0	0.0	****	****	****	****	.6	0.0	0.0	0.0	0.0	0.0	.2	0.0	.8	0.0	0.0	0.0	0.0	0.0	1
14	0.0	0.0	.2	****	0.0	****	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1
15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1
16	0.0	0.0	0.0	0.0	0.0	****	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1
17	0.0	0.0	0.0	.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	.2	0.0	0.0	0.0	0.0	****	****	0.0	0.0	0.0	.2	0.0	1
18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.8	.2	.4	0.0	0.0	.6	.6	.2	0.0	0.0	0.0	0.0	1
19	0.0	****	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.4	.2	0.0	.2	0.0	0.0	0.0	0.0	1
20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.2	0.0	0.0	0.0	0.0	****	****	0.0	0.0	0.0	0.0	0.0	0.0	2
21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2
22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2
23	.2	0.0	.2	.2	1.8	2.0	1.0	.8	1.0	0.0	0.0	0.0	0.0	0.0	.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2
24	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2
25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2
26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2
27	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2
28	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2
29	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	****	2
30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3
31	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.6	.2	0.0	0.0	0.0	0.0	0.0	0.0	3

R & M CONSULTANTS, INC.
SUSTITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR EKLUTNA LAKE WEATHER STATION
DATA TAKEN DURING July, 1983

DAY 01

DAY 02

DAY 03

HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.
	DEG C	DEG C	%	DEG.	M/S	DEG.		DEG C	DEG C	%	DEG.	M/S	DEG.		DEG C	DEG C	%	DEG.	M/S
						MW													
0300	12.0	*****	17	068	.1	161	1.3	1	0300	*****	*****	**	147	.5	193	1.3	***	0300	9.5
0600	11.1	*****	21	346	.7	357	2.5	4	0600	11.1	-23.6	7	150	.6	169	1.3	15	0600	*****
0900	12.7	-24.1	6	349	.9	338	2.5	37	0900	12.2	*****	92	350	1.1	003	2.5	41	0900	*****
1200	12.7	-25.9	5	357	1.9	000	4.4	21	1200	14.5	11.3	81	016	.3	359	3.2	46	1200	19.0
1500	14.3	14.1	99	353	1.4	355	3.2	67	1500	16.5	11.5	72	353	1.7	353	3.2	62	1500	20.2
1800	13.3	13.0	98	346	1.4	329	3.2	7	1800	16.1	11.1	72	005	1.8	005	3.8	26	1800	19.2
2100	11.4	*****	16	023	.3	344	2.5	1	2100	13.4	*****	98	022	.4	352	2.5	1	2100	15.5
2400	*****	*****	**	***	***	135	1.9	***	2400	*****	*****	13	137	.4	157	1.3	1	2400	12.7

DAY 04

DAY 05

DAY 06

HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.							
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.							
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S						
0300	10.3	*****	11	140	.5	163	1.3	2	0300	11.8	*****	15	343	.0	332	1.9	1	0300	12.3	*****	2	061	.2	178	2.5	1
0600	13.0	*****	0	146	.5	127	1.9	23	0600	*****	*****	9	099	.3	121	.6	8	0600	12.2	*****	98	026	.1	330	1.9	4
0900	15.0	*****	78	007	.5	328	1.9	29	0900	14.4	*****	94	352	.7	008	1.3	45	0900	11.6	*****	1	345	.6	356	1.9	11
1200	15.3	11.1	76	358	1.2	000	3.2	15	1200	*****	*****	**	339	1.3	332	2.5	***	1200	11.6	*****	2	347	.7	345	1.9	16
1500	18.3	10.2	59	349	1.3	005	2.5	99	1500	17.4	14.7	84	342	1.4	351	2.5	58	1500	12.0	*****	1	360	.4	335	1.3	24
1800	16.0	13.1	83	353	1.4	003	3.2	13	1800	16.0	14.3	90	001	1.9	000	3.8	16	1800	12.3	*****	0	149	.6	150	1.9	11
2100	14.0	*****	99	360	1.0	347	3.2	1	2100	14.6	*****	97	012	.2	359	1.9	1	2100	11.9	*****	**	150	.3	166	1.9	1
2400	12.9	*****	8	032	.2	027	1.9	0	2400	13.2	*****	96	139	.3	165	1.3	1	2400	10.7	-27.3	5	112	.3	157	1.9	1

DAY 07

DAY 08

DAY 09

HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.
	DEG C	DEG C	%	DEG.	M/S	DEG.		DEG C	DEG C	%	DEG.	M/S	DEG.		DEG C	DEG C	%	DEG.	M/S
						MW													
0300	10.4	-39.5	0	131	.4	181	1.3	1	0300	13.1	8.2	72	142	2.0	139	5.7	***	0300	8.2
0600	10.8	*****	**	004	.3	350	1.9	10	0600	12.1	10.7	91	008	.9	081	3.2	17	0600	11.3
0900	*****	*****	**	028	.4	331	1.3	***	0900	14.2	*****	**	028	.2	154	3.2	***	0900	14.9
1200	15.8	12.6	81	336	1.2	323	2.5	82	1200	15.0	5.5	53	143	2.4	143	5.1	26	1200	17.3
1500	16.7	13.1	79	342	1.5	321	3.2	50	1500	*****	*****	54	150	1.9	153	5.1	28	1500	17.0
1800	17.0	13.4	79	347	1.1	341	2.5	47	1800	13.8	3.5	50	141	2.3	132	5.1	6	1800	15.6
2100	14.0	*****	86	355	.3	241	2.5	1	2100	12.5	*****	73	134	1.0	136	6.3	1	2100	12.6
2400	14.8	6.9	59	142	2.4	146	6.3	1	2400	*****	*****	98	151	.3	020	1.9	1	2400	*****

R & M CONSULTANTS, INC.

SUSITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR EKLUTNA LAKE WEATHER STATION
DATA TAKEN DURING July, 1983

DAY 10

DAY 11

DAY 12

HOUR									DEW									WIND WIND GUST MAX.									HOUR									DEW									WIND WIND GUST MAX.																																																														
NDNG TEMP. POINT RH DIR. SPD. DIR. GUST RAD									NDNG TEMP. POINT RH DIR. SPD. DIR. GUST RAD									NDNG TEMP. POINT RH DIR. SPD. DIR. GUST RAD									NDNG TEMP. POINT RH DIR. SPD. DIR. GUST RAD									NDNG TEMP. POINT RH DIR. SPD. DIR. GUST RAD									NDNG TEMP. POINT RH DIR. SPD. DIR. GUST RAD																																																														
DEG C DEG C % DEG. M/S DEG. M/S MW									DEG C DEG C % DEG. M/S DEG. M/S MW									DEG C DEG C % DEG. M/S DEG. M/S MW									DEG C DEG C % DEG. M/S DEG. M/S MW									DEG C DEG C % DEG. M/S DEG. M/S MW									DEG C DEG C % DEG. M/S DEG. M/S MW																																																														
0300																		4.8 ***** 7 156 .5 152 1.3 2																		0300																		9.1 ***** 7 117 .3 009 1.3 1																		0300																		9.2 ***** 7 115 .6 153 1.3 1																	
0600																		***** ***** 96 142 .2 159 1.3 24																		0600																		9.2 ***** ** 154 .7 159 1.3 4																		0600																		***** ***** ** 186 .8 186 1.9 ***																	
0900																		12.2 ***** 87 336 .3 054 1.3 29																		0900																		11.1 ***** 94 345 .4 340 1.3 18																		0900																		***** ***** ** 357 .8 *** **** *																	
1200																		15.2 9.2 67 337 1.1 349 2.5 72																		1200																		11.3 ***** 93 161 .9 170 1.9 24																		1200																		12.6 11.1 91 354 1.5 355 3.2 53																	
1500																		16.0 9.3 64 350 1.3 351 2.5 36																		1500																		12.2 ***** 91 307 .3 207 1.3 18																		1500																		12.7 11.7 94 348 1.6 350 3.8 38																	
1800																		12.7 11.1 90 004 1.5 353 4.4 6																		1800																		11.1 ***** 98 157 .7 126 1.9 4																		1800																		12.7 ***** 94 342 1.0 344 2.5 16																	
2100																		10.9 ***** ** 091 .4 017 2.5 4																		2100																		10.0 -27.8 5 043 .1 025 2.5 1																		2100																		11.4 ***** 0 353 1.0 356 2.5 1																	
2400																		9.7 ***** 6 139 .5 150 1.3 1																		2400																		***** ***** ** *** **** 342 2.5 ***																		2400																		7.5 ***** 6 148 .4 143 1.3 1																	

DAY 13

DAY 14

DAY 15

HOUR										HOUR										HOUR															
DEW		WIND		WIND		GUST		MAX.		DEW		WIND		WIND		GUST		MAX.		DEW		WIND		WIND		GUST		MAX.							
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD
	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW
0300	*****	*****	**	167	.8	176	1.9	1	0300	4.4	*****	7	152	.7	161	1.9	1	0300	5.1	*****	10	159	.6	158	1.9	1									
0600	*****	*****	**	***	****	113	1.3	***	0600	*****	*****	**	***	****	120	1.3	***	0600	*****	*****	1	163	.5	171	1.9	***									
0900	10.6	*****	**	***	****	***	****	***	0900	15.5	*****	65	080	.4	124	1.3	90	0900	17.0	9.7	62	116	.9	116	1.9	86									
1200	*****	*****	84	145	.6	172	2.5	42	1200	19.6	8.3	48	338	1.0	353	1.9	66	1200	20.3	12.4	60	339	1.3	353	2.5	124									
1500	17.0	*****	69	090	.2	152	3.2	59	1500	19.0	*****	46	327	1.0	349	3.8	30	1500	19.1	10.5	57	344	1.2	351	3.2	20									
1800	14.1	11.3	83	156	.5	154	3.8	9	1800	17.1	7.8	54	189	.9	298	2.5	15	1800	17.8	10.5	62	171	1.2	153	2.5	13									
2100	10.6	*****	1	102	.3	165	4.4	1	2100	14.3	*****	76	154	.9	162	1.9	2	2100	13.6	*****	90	158	1.0	162	2.5	1									
2400	7.1	-20.1	6	143	.5	128	1.9	1	2400	7.7	*****	3	157	.5	165	1.9	1	2400	9.4	*****	4	153	.5	182	1.9	0									

DAY 16

DAY 17

DAY 18

HOUR									DEW									WIND									WIND									GUST MAX.																	
NDNG									TEMP. POINT RH									DIR. SPD. DIR. GUST RAD									NDNG									TEMP. POINT RH									DIR. SPD. DIR. GUST RAD								
									DEG C DEG C %									DEG. M/S DEG. M/S MW																		DEG C DEG C %									DEG. M/S DEG. M/S MW								
0300	7.4	*****	5	158	.7	162	1.9	1	0300	12.1	*****	3	135	.4	139	1.9	1	0300	*****	*****	7	143	.6	132	1.3	***																											
0600	*****	*****	**	***	****	166	1.9	***	0600	12.1	11.6	97	043	.2	038	2.5	4	0600	8.4	-24.2	8	***	***	139	.6	***																											
0900	16.3	*****	70	164	.4	201	2.5	33	0900	12.5	10.4	87	073	.4	035	2.5	***	0900	*****	*****	**	348	.9	244	2.5	48																											
1200	17.6	11.3	66	338	1.2	327	2.5	63	1200	*****	*****	**	074	.3	069	2.5	***	1200	15.9	11.1	73	356	2.3	355	4.4	128																											
1500	17.5	*****	78	353	1.4	004	3.2	18	1500	12.8	*****	91	318	.4	351	2.5	39	1500	13.1	*****	85	003	1.6	007	4.4	23																											
1800	17.5	*****	77	081	.1	149	2.5	12	1800	13.8	11.0	83	209	.3	149	2.5	16	1800	12.7	*****	93	166	.3	025	4.4	10																											
2100	14.4	*****	97	138	.4	158	1.9	1	2100	11.0	-29.0	4	159	.3	156	1.9	1	2100	10.2	*****	3	149	.3	159	1.3	1																											
2400	13.6	*****	99	097	.2	114	2.5	0	2400	9.3	*****	**	146	.4	114	1.3	0	2400	9.1	*****	5	118	.4	130	1.3	1																											

R & M CONSULTANTS, INC.

SUSITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR EKLUTNA LAKE WEATHER STATION
DATA TAKEN DURING July, 1983

DAY 19

DAY 20

DAY 21

HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD
	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW
0300	*****	*****	9	144	.5	163	1.3	1	0300	*****	*****	6	145	.6	160	1.9	1
0600	9.3	*****	4	148	.7	145	1.3	16	0600	*****	*****	**	147	.5	156	1.3	***
0900	*****	*****	**	124	.5	153	1.3	***	0900	*****	*****	89	025	.3	155	1.3	32
1200	18.6	11.7	64	341	1.4	348	3.2	134	1200	15.0	*****	82	013	.7	338	1.9	44
1500	17.3	10.7	65	351	1.4	358	3.2	32	1500	14.0	11.3	84	128	.7	157	2.5	30
1800	12.7	*****	0	010	.4	331	2.5	8	1800	14.8	*****	87	161	.8	162	1.9	18
2100	10.3	*****	2	123	.5	139	1.9	1	2100	12.2	*****	3	099	.2	127	1.9	1
2400	9.5	*****	5	125	.4	140	1.3	0	2400	9.9	*****	3	146	.6	148	1.3	1

DAY 22

DAY 23

DAY 24

DEW WIND WIND GUST MAX.									DEW WIND WIND GUST MAX.									DEW WIND WIND GUST MAX.												
NDNG		TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG		TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG		TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	
		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW			DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW			DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW	
0300	6.9	*****	7	156	.6	173	1.3	1	0300	10.8	*****	5	142	.4	148	1.9	1	0300	*****	*****	**	156	.5	147	1.9	***				
0600	*****	*****	**	151	.3	184	1.3	***	0600	10.2	*****	5	152	.5	144	1.3	6	0600	*****	*****	1	***	****	147	.6	12				
0900	14.6	*****	81	359	.7	017	1.9	43	0900	11.9	*****	96	105	.3	143	1.9	42	0900	14.2	10.8	80	168	.5	174	1.9	89				
1200	18.6	11.5	63	335	1.3	301	3.2	109	1200	14.2	12.6	90	015	.7	013	1.9	43	1200	16.1	11.5	74	345	1.8	351	3.8	74				
1500	17.6	13.4	76	351	1.7	337	3.2	26	1500	13.7	*****	84	348	1.4	346	3.2	35	1500	17.9	10.6	62	359	2.5	000	5.1	83				
1800	17.8	11.7	67	003	1.3	011	3.2	22	1800	13.9	11.1	83	140	.6	129	1.9	20	1800	17.2	*****	56	339	.9	356	3.8	39				
2100	13.6	12.3	92	016	1.0	008	3.8	1	2100	9.4	*****	2	141	.6	126	1.9	1	2100	8.2	*****	0	167	.7	181	1.9	1				
2400	*****	*****	2	141	.6	104	1.9	0	2400	8.5	*****	4	144	.4	143	1.3	0	2400	*****	*****	10	156	.7	153	1.3	0				

DAY 25

DAY 26

DAY 27

HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD
	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW
0300	*****	*****	**	163	.9	172	1.9	***	0300	4.0	-33.9	4	160	.7	154	1.9	***
0600	3.0	*****	**	***	***	***	***	***	0600	7.8	*****	**	151	.6	154	1.3	***
0900	*****	*****	**	123	.8	123	1.3	71	0900	15.7	*****	63	110	.4	151	1.3	69
1200	18.6	8.3	51	344	1.4	349	3.8	104	1200	17.7	11.1	65	344	1.5	354	3.8	80
1500	17.8	9.5	58	001	2.3	003	4.4	54	1500	16.8	11.6	71	001	2.1	355	3.8	26
1800	16.9	*****	61	353	1.4	002	3.8	21	1800	15.9	*****	76	007	1.2	355	3.8	11
2100	10.4	*****	98	152	.6	186	1.9	1	2100	13.9	*****	82	030	.5	005	2.5	1
2400	5.2	*****	6	158	.6	143	1.3	0	2400	11.6	*****	97	118	.2	320	1.9	0

SUSTINA HYDROELECTRIC PROJECT

DATA TAKEN DURING July, 1983

DAY 30

HOUR									HOUR									HOUR																	
DEW		WIND		WIND		GUST		MAX.		DEW		WIND		WIND		GUST		MAX.		DEW		WIND		WIND		GUST		MAX.							
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD
	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW
0300	4.9	*****	13	166	.7	160	1.3	1	0300	6.8	*****	10	158	.6	139	1.3	1	0300	*****	*****	**	143	.6	155	2.5	***									
0600	6.8	*****	**	168	.6	168	1.9	***	0600	11.8	*****	96	144	.5	152	1.3	21	0600	11.9	*****	98	152	.4	192	1.3	19									
0900	*****	*****	70	152	.5	157	1.3	80	0900	*****	*****	84	349	.6	349	1.9	***	0900	15.3	*****	75	082	.2	141	1.9	40									
1200	21.7	13.7	60	337	1.3	350	3.2	101	1200	16.4	13.5	83	356	.7	339	1.9	42	1200	17.4	10.1	62	342	1.2	350	2.5	46									
1500	21.7	12.3	55	358	2.1	349	4.4	83	1500	16.5	13.8	84	343	1.0	000	1.9	***	1500	17.0	12.4	74	352	1.5	348	3.2	47									
1800	17.9	7.0	49	187	1.3	190	4.4	11	1800	15.7	*****	85	343	.9	327	2.5	11	1800	16.4	11.2	71	349	1.2	002	3.8	29									
2100	16.0	11.4	74	088	.3	357	3.8	1	2100	13.6	*****	91	009	.4	028	1.3	0	2100	9.6	*****	96	161	.8	191	3.8	1									
2400	8.4	*****	4	072	.3	021	3.2	0	2400	*****	*****	**	***	***	011	1.3	***	2400	4.9	*****	6	157	.5	150	1.3	0									

DAY 31

HR	DEW	WIND	WIND	GUST	MAX.			
NDNC	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD
	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MM
0300	*****	*****	2	171	.7	178	1.9	0
0600	*****	*****	**	170	.7	159	1.3	17
0900	15.3	*****	60	122	.5	110	1.9	57
1200	18.5	11.9	65	346	1.5	347	3.2	105
1500	17.1	*****	71	356	1.6	000	3.8	21
1800	14.4	*****	97	172	.7	136	2.5	12
2100	11.4	*****	4	158	.5	144	1.9	1
2400	*****	*****	5	133	.5	156	1.3	1

R & M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT

MONTHLY SUMMARY FOR EKLUTNA LAKE WEATHER STATION
DATA TAKEN DURING July, 1983

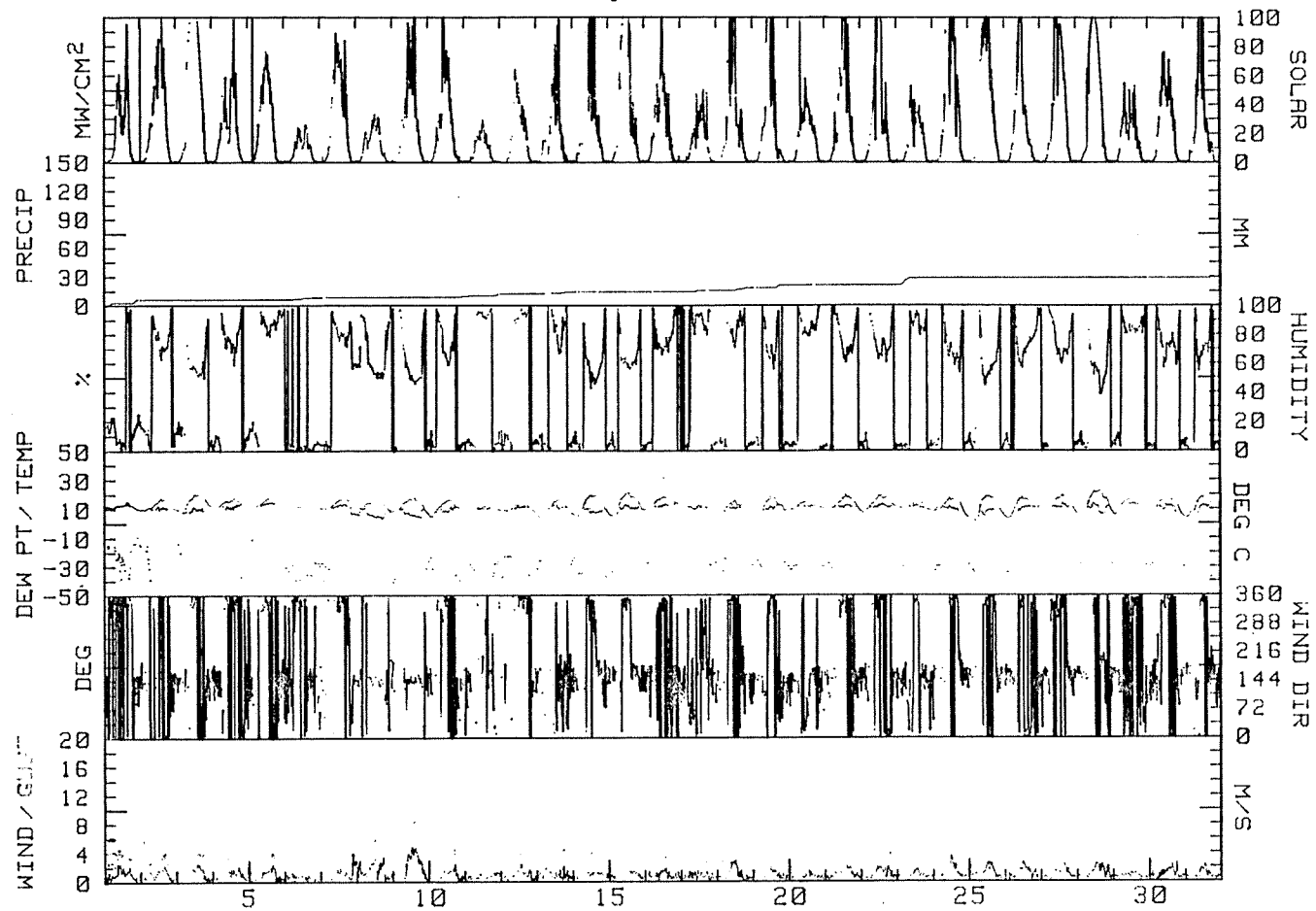
DAY	MAX. TEMP. DEG C	MIN. TEMP. DEG C	MEAN TEMP. DEG C	RES. WIND DIR. DEG	RES. WIND SPD. M/S	AVG. WIND SPD. M/S	MAX. GUST DIR. DEG	MAX. GUST SPD. M/S	P'VAL DIR. %	MEAN RH %	MEAN DP DEG C	PRECIP MM	DAY'S SOLAR ENERGY DAY WH/SQ M
1	15.4M	10.1M	12.8M	355M	.8M	1.0M	000M	4.4M	N (M)			6.0	4549 M 1
2	18.1M	9.7M	13.9M	007M	.8M	1.1M	005M	3.8M	N (M)			.2	7960 M 2
3	20.6M	8.0M	14.3M	002M	.7M	1.1M	344M	3.8M	N (M)			0.0	10365 M 3
4	18.3M	10.2M	14.3M	005M	.5M	.9M	000M	3.2M	N (M)			0.0	4894 M 4
5	18.1M	11.6M	14.9M	356M	.6M	.9M	000M	3.8M	N (M)			0.0	5697 M 5
6	13.8M	10.4M	12.1M	039M	.1M	.6M	178M	2.5M	NNW (M)			1.8	2059 M 6
7	18.4M	10.4M	14.4M	023M	.3M	1.2M	146M	6.3M	NNW (M)			.4M	6729 M 7
8	15.1M	8.6M	11.9M	139M	1.4M	1.6M	136M	6.3M	SE (M)			0.0	2860 M 8
9	18.0M	7.6M	12.8M	144M	2.4M	2.4M	145M	8.3M	SE (M)			0.0	6634 M 9
10	16.6M	4.7M	10.7M	003M	.6M	.9M	353M	4.4M	N (M)			.8	6209 M 10
11	12.2M	9.1M	10.7M	147M	.2M	.7M	025M	2.5M	SSE (M)			2.0M	2062 M 11
12	13.2M	7.5M	10.4M	352M	.8M	.9M	350M	3.8M	N (M)			.8	4344 M 12
13	17.0M	4.7M	10.9M	142M	.4M	.8M	165M	4.4M	S (M)			1.6M	4459 M 13
14	20.3M	4.4M	12.4M	182M	.2M	.9M	349M	3.8M	SSE (M)			.2M	7823 M 14
15	21.6M	4.6M	13.1M	162M	.2M	1.0M	351M	3.2M	SSE (M)			0.0	8420 M 15
16	18.7M	7.4M	13.1M	028M	.1M	.8M	004M	3.2M	N (M)			0.0M	5358 M 16
17	14.7M	9.3M	12.0M	128M	.1M	.7M	038M	2.5M	SSE (M)			1.6M	3223 M 17
18	15.9M	7.4M	11.7M	011M	.6M	1.1M	355M	4.4M	N (M)			2.8	6816 M 18
19	18.9M	8.5M	13.7M	015M	.4M	.9M	348M	3.2M	N (M)			2.8M	7271 M 19
20	15.4M	9.5M	12.5M	131M	.4M	.6M	157M	2.5M	SSE (M)			.2M	4478 M 20
21	20.0M	8.8M	14.4M	004M	.5M	1.0M	000M	3.8M	N (M)			0.0	6840 M 21
22	19.7M	6.8M	13.3M	002M	.7M	1.1M	008M	3.8M	N (M)			0.0	7335 M 22
23	14.2M	8.5M	11.4M	107M	.2M	.7M	346M	3.2M	SSE (M)			7.4	3537 M 23
24	18.5M	4.5M	11.5M	356M	.5M	1.2M	000M	5.1M	N (M)			0.0	9394 M 24
25	19.2M	1.4M	10.3M	004M	.6M	1.2M	003M	4.4M	N (M)			0.0	9396 M 25
26	18.8M	3.3M	11.1M	011M	.6M	1.1M	354M	3.8M	N (M)			0.0	5997 M 26
27	20.0M	8.0M	14.0M	347M	.3M	1.0M	358M	4.4M	SSE (M)			0.0	8186 M 27
28	22.9M	4.8M	13.9M	007M	.2M	1.2M	349M	4.4M	SSE (M)			0.0	9894 M 28
29	17.0M	6.1M	11.6M	002M	.3M	.7M	327M	2.5M	NNW (M)			0.0M	3875 M 29
30	18.1M	4.9M	11.5M	007M	.3M	1.0M	002M	3.8M	N (M)			0.0	5533 M 30
31	18.9M	3.6M	11.3M	041M	.1M	.9M	000M	3.8M	SSE (M)			.8	6161 M 31
MONTH	22.9M	1.4M	12.5M	026M	.3M	1.0M	145M	8.3M	N (M)	M	M	29.4M	187559M

GUST VEL. AT MAX. GUST MINUS 2 INTERVALS 6.3
 GUST VEL. AT MAX. GUST MINUS 1 INTERVAL 7.0
 GUST VEL. AT MAX. GUST PLUS 1 INTERVAL 7.6
 GUST VEL. AT MAX. GUST PLUS 2 INTERVALS 7.0

NOTE: RELATIVE HUMIDITY READINGS ARE UNRELIABLE WHEN WIND SPEEDS ARE LESS THAN ONE METER PER SECOND. SUCH READINGS HAVE NOT BEEN INCLUDED IN THE DAILY OR MONTHLY MEAN FOR RELATIVE HUMIDITY AND DEW POINT.

**** SEE NOTES AT THE BACK OF THIS REPORT ****

R&M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT
EKLUTNA LAKE WEATHER STATION
July, 1983



R & M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT

WIND FREQUENCY SUMMARY FOR EKLUTNA LAKE WEATHER STATION
DATA TAKEN DURING July, 1983

DIRECTION	VELOCITY (M/S)							TOTAL
	0.2	1.0	3.0	6.0	10.0	15.0	20.0	
	TO 1.0	TO 3.0	TO 6.0	TO 10.0	TO 15.0	TO 20.0	OR GREATER	
N	4.17	16.89	.14	0.00	0.00	0.00	0.00	21.21
NNE	2.21	2.11	0.00	0.00	0.00	0.00	0.00	4.32
NE	1.87	.19	0.00	0.00	0.00	0.00	0.00	2.06
ENE	1.82	.19	0.00	0.00	0.00	0.00	0.00	2.02
E	2.54	.05	0.00	0.00	0.00	0.00	0.00	2.59
ESE	6.43	.34	0.00	0.00	0.00	0.00	0.00	6.77
SE	8.49	1.97	.96	0.00	0.00	0.00	0.00	11.42
SSE	13.24	4.41	.48	0.00	0.00	0.00	0.00	18.14
S	5.37	2.26	0.00	0.00	0.00	0.00	0.00	7.63
SSW	1.06	.82	0.00	0.00	0.00	0.00	0.00	1.87
SW	.19	.10	0.00	0.00	0.00	0.00	0.00	.29
WSW	.38	.10	0.00	0.00	0.00	0.00	0.00	.48
W	.62	.05	0.00	0.00	0.00	0.00	0.00	.67
WNW	.58	.19	0.00	0.00	0.00	0.00	0.00	.77
NW	1.63	2.11	0.00	0.00	0.00	0.00	0.00	3.74
NNW	3.31	11.04	0.00	0.00	0.00	0.00	0.00	14.35
CALM								1.68
TOTAL	53.93	42.80	1.58	0.00	0.00	0.00	0.00	100.00

NOTE: ALL FREQUENCIES ARE EXPRESSED IN PERCENT
2084 VALID WIND OBSERVATIONS USED TO DEVELOP FREQUENCY SUMMARY

WIND SPEED
(M/S)

>=20

15-20

10-15

6-10

3-6

1-3

.2-1

% CALM

R & M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT

HOURLY PRECIPITATION SUMMARY FOR EKLUTNA LAKE WEATHER STATION
DATA TAKEN DURING August, 1983

PRECIPITATION VALUES ARE IN MILLIMETERS

HOUR ENDING

DATE	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	DAI
1	0.0	0.0	1.4	.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.2	0.0	0.0	0.0	0.0	0.0	0.0	
3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
5	0.0	0.0	.2	.2	.4	.2	.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.2	0.0	0.0	0.0	.2	0.0	
6	.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.6	.4	0.0	
8	.4	.6	0.0	0.0	.2	.2	.8	.4	.2	.4	.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.4	.6	
9	0.0	0.0	0.0	.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.2	0.0	0.0	0.0	0.0	
12	0.0	.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.4	
13	.2	0.0	0.0	.2	0.0	0.0	0.0	.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
14	0.0	0.0	.4	.6	1.0	1.0	1.2	2.8	.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4	1.0	.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
16	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
17	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
19	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.2	
21	.4	.8	1.0	.8	0.0	.2	.8	2.0	.4	.4	0.0	0.0	0.0	.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.2	0.0	.2	
23	.2	0.0	1.0	1.0	0.0	.6	1.4	0.0	0.0	0.0	0.0	.2	0.0	.4	1.0	.2	.2	.8	0.0	0.0	.6	.2	.2	0.0	
24	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	***	.2	0.0	0.0	0.0	0.0	0.0	0.0	.4	.2	.8	.2	0.0	
25	0.0	0.0	0.0	0.0	.2	1.2	0.0	.2	.6	.4	.4	1.8	2.4	2.6	1.6	1.8	.4	.8	.2	0.0	0.0	0.0	0.0	.2	
26	.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.2	0.0	0.0	0.0	0.0	0.0	0.0	
27	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
28	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
29	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.2	1.8	1.0	.8	.2	1.6	2.8	.2	0.0	0.0	
31	0.0	0.0	0.0	0.0	0.0	.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	

R & M CONSULTANTS, INC.

SUSTITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR EKLUTNA LAKE WEATHER STATION
DATA TAKEN DURING August, 1983

DAY 01

DAY 02

DAY 03

HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	TEMP.	POINT	RH	DIR.	SPD.	DIR.	TEMP.	POINT	RH	DIR.	SPD.
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.	M/S	DEG.	DEG C	DEG C	%	DEG.	M/S
0300	10.6	*****	4	132M	.5M	099M	1.9M	0	0300	10.0	*****	4	158M	.4M	142M	1.3M	0
0600	11.5	*****	4	138M	.5M	161M	1.3M	8	0600	10.6	-33.8	2	150M	.5M	178M	1.4M	8
0900	13.5	*****	92	113M	.1M	340M	1.9M	27	0900	16.2	10.8	70	025M	.2M	319M	1.9M	78
1200	16.0	*****	83	306M	.8M	278M	3.2M	38	1200	19.9	13.2	65	339M	1.5M	300M	3.2M	104
1500	18.5	*****	68	136	.2	173	2.5	43	1500	20.2	13.5	65	001	2.5	005	5.1	28
1800	16.4	*****	73	189	.8	159	3.2	9	1800	17.9	14.2	79	016	1.5	013	3.8	9
2100	10.9	*****	99	162	.6	175	1.9	1	2100	12.3	*****	0	127M	.3M	339M	2.5M	0
2400	9.4	*****	6	153M	.5M	177M	1.9M	1	2400	7.5	*****	6	149M	.4M	148M	1.3M	0

DAY 04

DAY 05

DAY 06

HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.	M/S	DEG.	DEG C	DEG C	%	DEG.	M/S
0300	10.3	*****	2	156	.6	170	1.9	1	0300	11.8	*****	1	159	.9	148	4.4	0
0600	13.1	*****	92	150	.7	132	2.5	7	0600	10.8	*****	3	158M	.5M	245M	1.9M	9
0900	15.4	12.0	80	030M	.5M	022M	4.4M	23	0900	13.1	*****	95	137M	.4M	149M	1.9M	24
1200	14.6	*****	91	002	1.2	006	4.4	29	1200	14.1	12.1	88	351M	.8M	000M	2.5M	30
1500	15.5	13.7	89	345	.9	346	2.5	27	1500	13.6	*****	88	359M	.7M	357M	2.5M	19
1800	14.4	13.8	96	339M	1.4M	351M	3.8M	12	1800	12.7	*****	89	016M	.6M	001M	2.5M	4
2100	16.2	9.0	62	140	1.8	144	7.6	1	2100	11.0	*****	3	067M	.3M	105M	1.3M	1
2400	15.7	8.5	62	144	4.1	139	9.5	0	2400	9.4	*****	5	127M	.4M	090M	1.3M	1

DAY 07

DAY 08

DAY 09

HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.	M/S	DEG.	DEG C	DEG C	%	DEG.	M/S
0300	14.6	6.2	57	137	2.7	135	5.7	1	0300	14.8	7.9	63	143M	5.7M	147M	14.0M	.1
0600	12.5	*****	80	152	1.1	143	5.1	10	0600	14.2	8.2	67	149M	6.3M	140M	2.1M	2
0900	18.0	7.4	50M	134M	3.0M	134M	8.3	81	0900	14.9	8.2	64	141M	6.2M	148M	12.1M	15
1200	17.4	7.2	51	144	4.9	144	10.2	25	1200	16.6	8.4	58	154M	6.1M	151M	12.4M	49
1500	17.1	7.2	52M	143M	4.4M	135M	8.3	19	1500	19.0	7.1	46	149	5.3	152	9.5	60
1800	16.6	7.3	54M	143M	5.2M	145M	10.2	4	1800	17.7	6.5	48	147	4.6	139	8.9	11
2100	15.5	9.7	68	140	5.6	138	10.8	0	2100	11.5	11.0	97	151	3.6	156	8.9	1
2400	15.5	9.0	65M	143M	6.1M	140M	13.3	0	2400	11.3	*****	3	337M	.6M	232M	4.4M	0

11.3	*****	2	022M	.2M	142M	1.3M	0
11.4	*****	4	146M	.3M	176M	1.3M	4
11.9	10.8	93	010M	1.3M	060M	3.2M	21
12.7	*****	87	333M	.9M	010M	2.5M	29
15.2	*****	72	311M	.8M	323M	4.9M	59
14.4	*****	77	309M	.7M	304M	2.5M	13
11.2	*****	97	011M	.3M	010M	1.9M	1
9.7	*****	2	144M	.5M	162M	2.3M	0

R & M CONSULTANTS, INC.

SUSITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR EKLUTNA LAKE WEATHER STATION
DATA TAKEN DURING August, 1983

DAY 10

DAY 11

DAY 12

HOUR	DEW	WIND	WIND	GUST MAX.	HOUR	DEW	WIND	WIND	GUST MAX.	HOUR	DEW	WIND	WIND	GUST MAX.			
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD
	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW
0300	8.0	*****	4	150M	.3M	181M	2.7M	0	0300	3.2	*****	3	167M	.7M	154M	1.3M	1
0600	7.9	*****	2	155M	.6M	139M	1.9M	11	0600	*****	*****	**	164M	.7M	155M	1.3M	***
0900	*****	*****	**	147M	.9M	132M	1.3M	31	0900	14.1	*****	66	124M	.7M	136M	1.9M	75
1200	16.6	9.8	64	344M	1.1M	344M	3.2M	99	1200	18.1	10.0	59	348M	1.3M	334M	2.5M	97
1500	15.5	9.0	65	359	1.7	357	3.8	25	1500	16.3	9.1	62	003	2.0	356	3.8	20
1800	13.9	*****	76	117	.2	027	2.5	10	1800	14.1	10.7	80	013	.9	009	3.8	2
2100	7.5	*****	4	139	.5	142	1.3	1	2100	10.3	*****	2	026	.2	296	3.8	0
2400	7.5	*****	4	150M	.4M	146M	1.3M	1	2400	9.2	*****	4	119M	.4M	060M	1.3M	0

DAY 13

DAY 14

DAY 15

HOUR									DEW									WIND WIND GUST MAX.									HOUR									DEW									WIND WIND GUST MAX.								
NDNG									TEMP. POINT RH									DIR. SPD. DIR. GUST RAD									NDNG									TEMP. POINT RH									DIR. SPD. DIR. GUST RAD								
									DEG C DEG C %									DEG. M/S DEG. M/S MW																		DEG C DEG C %									DEG. M/S DEG. M/S MW								
0300	8.4	8.2	99	354M	.5M	359M	2.5M	0	0300	*****	*****	**	148M	1.2M	148M	1.9M	***	0300	*****	*****	**	***	***	***	***	***	***	***	***	***	***	***	***	***	***																		
0600	8.0	*****	**	125M	.6M	123M	1.6M	***	0600	*****	*****	**	***	***	***	***	***	0600	5.2	*****	**	***	***	***	***	***	***	***	***	***	***	***	***	***																			
0900	9.7	*****	**	328M	.2M	096M	1.3M	25	0900	*****	*****	**	***	***	***	***	***	0900	10.8	*****	**	***	***	***	***	***	***	***	***	***	***	***	***	***																			
1200	11.6	*****	73	331M	.7M	308M	1.9M	50	1200	11.0	*****	**	213M	.4M	180M	3.1M	***	1200	12.7	6.6	66	346M	1.4M	358M	4.4M	36																											
1500	12.7	7.6	71	346M	.9M	345M	2.5M	24	1500	12.3	4.8	60	339M	1.3M	354M	3.8M	30	1500	9.0	*****	91	037	.4	001	4.4	24																											
1800	12.2	*****	77	353M	.7M	039M	2.5M	9	1800	10.1	5.1	71	147	.9	160	3.8	10	1800	9.2	*****	92	152	.8	135	2.5	13																											
2100	6.8	*****	4	162M	.5M	183M	1.9M	1	2100	4.7	*****	5	141M	.5M	157M	1.9M	0	2100	6.0	*****	7	128M	.4M	075M	1.3M	0																											
2400	7.8	*****	2	160M	.7M	169M	1.9M	1	2400	2.8	-24.9	11	157M	.7M	159M	1.3M	0	2400	*****	*****	**	137M	.5M	126M	1.3M	0																											

DAY 16

DAY 17

DAY 18

HOUR	DEW								WIND								WIND								GUST MAX.								HOUR								DEW								WIND								WIND								GUST MAX.							
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD																												
	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW																												
0300	*****	*****	**	***	***	***	***	***	0300	7.8	7.6	99	127	.4	002	2.5	.1	0300	2.2	*****	3	153m	.5m	152m	1.3m	1																																														
0600	*****	*****	**	***	***	***	***	***	0600	7.8	*****	4	138	.5	133	1.9	.8	0600	*****	*****	**	157m	.7m	174m	1.9m	***																																														
0900	*****	*****	**	***	***	***	***	***	0900	11.5	*****	86	133	.5	143	1.9	21	0900	*****	*****	**	***	***	***	***	***																																														
1200	14.8	7.4	61	335m	1.4m	324m	3.2m	95	1200	14.2	8.9	70	337	1.0	311	2.5	36	1200	15.3	8.6	64	353m	.6m	297m	2.5m	94																																														
1500	15.4	7.7	60	344	1.5	336	3.2	75	1500	12.8	8.5	75	358	2.5	001	4.4	21	1500	17.7	8.0	53	352	2.0	348	4.4	78																																														
1800	12.6	*****	74	354	1.2	353	3.2	12	1800	12.5	9.3	81	022	1.8	016	3.8	7	1800	16.2	7.5	56	350	1.4	358	3.2	9																																														
2100	6.8	*****	5	153	.4	178	1.3	0	2100	*****	*****	3	075m	.6m	032m	3.2m	0	2100	6.9	*****	3	114	.1	017	2.5	0																																														
2400	6.8	*****	5	152	.6	182	1.3	0	2400	7.5	*****	**	154m	.4m	154m	.6m	0	2400	4.0	-22.0	13	162	.7	171	1.9	0																																														

R & M CONSULTANTS, INC.

SUSITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR EKLUTNA LAKE WEATHER STATION
DATA TAKEN DURING August, 1983

DAY 19

DAY 20

DAY 21

HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.							
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.						
	DEG C	DEG C	%	DEG.	M/S	DEG.		DEG C	DEG C	%	DEG.	M/S	DEG.		DEG C	DEG C	%	DEG.	M/S	DEG.						
0300	1.3	*****	1	160	.7	164	1.9	0	0300	14.6	2.7	45	164M	.8M	165M	4.4M	1	0300	8.1	*****	7					
0600	*****	*****	**	***	****	***	*****	0600	14.5	3.3	47	153M	3.7M	153M	6.3M	6	0600	7.8	*****	7	138M	.4M	127M	1.3M	5	
0900	*****	*****	**	***	****	***	*****	0900	15.5	3.2	44	139M	4.0M	142M	8.3M	20	0900	9.5	*****	2	133M	.2M	013M	1.9M	2	
1200	17.8	5.7	45	334M	1.3M	341M	2.5M	89	1200	14.4	4.1	50	146	2.9	142	7.0	36	1200	12.7	10.4	86	330	.8	325	2.5	44
1500	18.0	7.7	51	352	1.7	353	3.8	73	1500	15.2	3.3	45	148M	3.2M	143M	9.4M	32	1500	12.7	*****	90	357	1.2	356	3.2	19
1800	14.2	*****	75	332	.4	359	3.8	10	1800	14.1	3.2	48	147M	3.2M	109M	7.0M	4	1800	11.7	*****	97	000	.4	332	1.9	6
2100	7.5	*****	0	144	.5	167	1.9	0	2100	12.1	*****	63	159M	2.0M	159M	5.1M	0	2100	8.5	*****	6	113	.3	144	1.3	1
2400	5.2	*****	6	159	.7	145	1.9	1	2400	8.5	*****	1	060	.3	354	2.5	1	2400	7.3	*****	6	145	.3	173	1.3	1

DAY 22

DAY 23

DAY 24

HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.		
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	
	DEG C	DEG C	%	DEG.	M/S	DEG.		DEG C	DEG C	%	DEG.	M/S	DEG.		DEG C	DEG C	%	DEG.	M/S	DEG.	
0300	6.9	*****	11	158	.5	155	1.3	1	0300	9.7	*****	5	028M	.3M	042M	1.9M	1	0300	7.7	*****	11
0600	7.3	*****	8	155M	.6M	165M	1.3M	10	0600	9.4	*****	4	131M	.4M	134M	1.9M	4	0600	*****	*****	**
0900	11.9	*****	88	138	.5	117	1.9	34	0900	11.4	*****	93	147M	.7M	045M	2.5M	31	0900	*****	*****	**
1200	15.3	9.9	70	338	.3	227	2.6	59	1200	11.3	9.5	89	346M	1.3M	011M	3.8M	48	1200	11.0	*****	81
1500	14.4	9.5	72	008M	1.8M	002M	3.8M	30	1500	12.0	*****	87	338	1.0	353	4.5	35	1500	11.5	8.4	81
1800	13.0	*****	85	353	1.1	357	3.2	6	1800	10.1	*****	1	309	.3	326	1.9	6	1800	10.4	9.0	91
2100	10.1	*****	0	117M	.2M	338M	1.3M	1	2100	9.0	*****	8	120M	.3M	194M	1.3M	1	2100	9.0	*****	1
2400	9.6	*****	4	139M	.4M	138M	1.6M	1	2400	8.1	-29.1	5	128M	.6M	124M	2.5M	0	2400	7.4	*****	7

DAY 25

DAY 26

DAY 27

HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.		
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	
	DEG C	DEG C	%	DEG.	M/S	DEG.		DEG C	DEG C	%	DEG.	M/S	DEG.		DEG C	DEG C	%	DEG.	M/S	DEG.	
0300	6.6	*****	11	125	.3	139	1.9	0	0300	3.8	*****	99	149	.4	191	1.3	0	0300	8.7	*****	4
0600	6.8	*****	8	142	.4	164	1.9	3	0600	5.6	*****	3	155	.6	154	1.3	10	0600	9.5	*****	7
0900	7.6	7.4	99	166	.7	167	1.9	17	0900	8.5	*****	95	143	.5	120	1.3	53	0900	12.5	9.9	84
1200	7.6	*****	98	153	.6	146	1.9	11	1200	14.3	9.6	73	012	.7	350	3.2	103	1200	15.3	10.6	73
1500	6.1	-42.2	0	186	.9	188	2.5	8	1500	13.7	9.8	77	350	1.7	359	3.8	35	1500	17.5	9.7	60
1800	6.8	*****	2	148	.7	158	1.9	11	1800	11.6	*****	94	349	.6	357	3.2	7	1800	12.5	*****	86
2100	4.0	*****	11	145	.4	158	1.9	1	2100	9.3	*****	4	122	.4	098	1.3	0	2100	6.7	*****	3
2400	4.3	*****	0	148	.6	154	1.9	1	2400	9.1	-30.4	4	141	.4	145	1.9	1	2400	4.0	*****	11

R & M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR EKLUTNA LAKE WEATHER STATION
DATA TAKEN DURING August, 1983

DAY 28

DAY 29

DAY 30

HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG.	M/S	MW
0300	3.3	*****	0	157	.7	159	1.9	1	0300	3.4	*****	1	159	.7	160	1.9	1
0600	4.5	*****	3	159	.7	139	1.9	11	0600	5.3	*****	97	147	.6	155	1.9	6
0900	13.8	*****	80	134	.5	131	1.9	67	0900	10.2	9.4	95	157	.7	170	1.9	21
1200	16.5	9.3	62	359	.7	325	2.5	67	1200	12.4	10.6	89	104	.2	140	2.5	41
1500	17.0	10.7	66	340	1.3	344	2.5	39	1500	16.6	3.9	43	173	1.7	158	7.0	14
1800	14.6	*****	76	046	.1	337	1.9	10	1800	16.2	5.2	48	116	1.0	156	6.3	6
2100	8.5	*****	1	136	.7	138	1.9	1	2100	15.6	5.5	51	148	3.6	158	8.3	1
2400	4.6	*****	4	156	.5	122	1.9	0	2400	15.3	5.8	53	154	3.7	155	7.6	0

DAY 31

HOUR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.
DEG C	DEG C	%	DEG.	M/S	DEG.
0300	5.7	*****	5	142	.5
0600	4.9	*****	6	154	.5
0900	9.2	*****	2	145	.4
1200	11.9	*****	86	354	.2
1500	11.2	*****	89	343	.9
1800	10.6	*****	98	120	.3
2100	5.8	*****	4	133	.4
2400	7.8	*****	1	142	.4

R & M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT

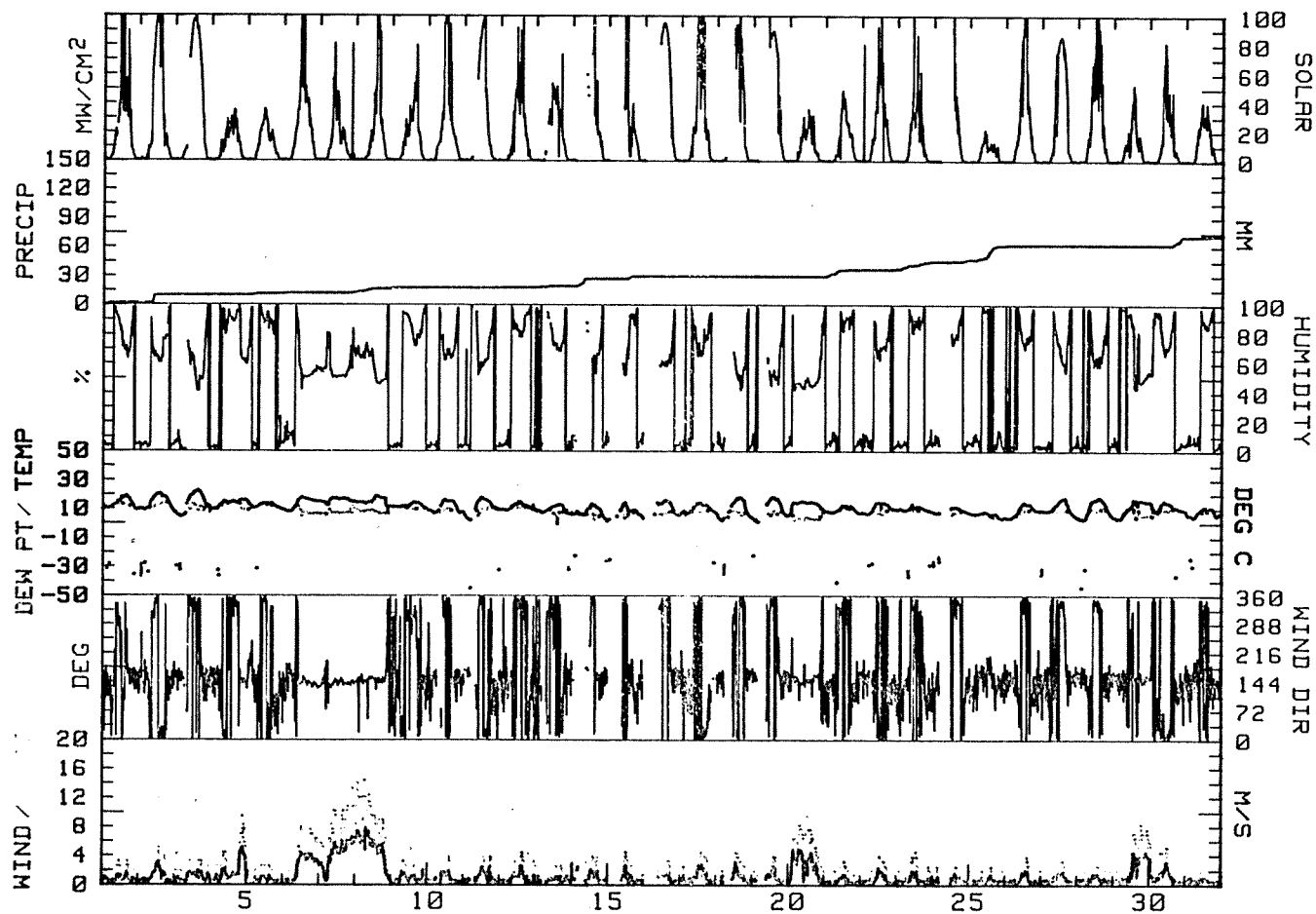
MONTHLY SUMMARY FOR EKLUTNA LAKE WEATHER STATION
DATA TAKEN DURING August, 1983

DAY	MAX. TEMP. DEG C	MIN. TEMP. DEG C	MEAN TEMP. DEG C	RES. WIND DIR. DEG	RES. WIND SPD. M/S	AVG. WIND SPD. M/S	MAX. GUST DIR. DEG	MAX. GUST SPD. M/S	P'VAL DIR. %	MEAN RH %	MEAN DP DEG C	PRECIP MM	DAY'S SOLAR ENERGY WH/SQ M
1	19.5M	8.9M	14.2M	165M	.3M	.7M	278M	3.2M	SE (M)			1.8	5384M 1
2	21.1M	7.4M	14.3M	011M	.6M	1.1M	005M	5.1M	N (M)			.2	7353M 2
3	23.4M	4.3M	13.9M	014M	.1M	1.1M	169M	4.3M	SSE (M)			0.0	9511M 3
4	16.7M	9.1M	12.9M	116M	.5M	1.7M	139M	9.5M	SE (M)			0.0	2625M 4
5	14.9M	9.4M	12.2M	074M	.2M	.7M	140M	4.4M	N (M)			1.6	2583M 5
6	18.7M	8.0M	13.4M	141M	2.1M	2.3M	145M	8.0M	SE (M)			.4	5643M 6
7	18.0M	12.4M	15.2M	141M	4.1M	4.2M	140M	13.3M	SE (M)			1.0	3521M 7
8	19.6M	11.1M	15.4M	147M	4.6M	5.1M	147M	14.0M	SSE (M)			4.6	4393M 8
9	15.2M	9.7M	12.5M	346M	.4M	.7M	323M	4.9M	N (M)			.2	3653M 9
10	17.0M	6.5M	11.8M	048M	.2M	.8M	357M	3.8M	SSE (M)			0.0	5308M 10
11	18.5M	1.8M	10.2M	017M	.5M	1.0M	356M	3.8M	N (M)			.2	6309M 11
12	15.5M	8.8M	12.2M	009M	.5M	.9M	357M	4.4M	N (M)			.6	4438M 12
13	13.6M	6.0M	9.8M	354M	.2M	.8M	359M	2.5M	NNW (M)			1.0	4060M 13
14	14.0M	1.2M	7.6M	139M	.2M	1.1M	354M	3.8M	SSE (M)			7.8	5122M 14
15	14.8M	2.5M	8.7M	067M	.2M	.9M	358M	4.4M	SE (M)			2.6	5520M 15
16	16.9M	5.6M	11.3M	349M	.6M	1.1M	324M	3.2M	NNW (M)			0.0	10389M 16
17	15.0M	6.9M	11.0M	021M	.7M	1.1M	001M	4.4M	N (M)			0.0	5513M 17
18	18.8M	1.8M	10.3M	007M	.3M	1.1M	348M	4.4M	SSE (M)			0.0	6490M 18
19	18.9M	1.1M	10.0M	001M	.2M	1.0M	353M	3.8M	SSE (M)			0.0	7541M 19
20	15.7M	6.1M	10.9M	148M	2.5M	2.6M	143M	9.4M	SSE (M)			.2	2313M 20
21	13.0M	7.2M	10.1M	025M	.2M	.6M	356M	3.2M	E (M)			7.2	2840M 21
22	15.3M	6.8M	11.1M	039M	.2M	.8M	002M	3.8M	SSE (M)			.4	4795M 22
23	14.0M	8.1M	11.1M	032M	.2M	.7M	353M	4.5M	ESE (M)			8.0	3666M 23
24	11.9M	7.0M	9.5M	008M	.2M	.7M	165M	2.5M	NNW (M)			1.8M	3009M 24
25	8.3	3.1	5.7	156	.5	.6	188	2.5	SSE			14.8	1445 25
26	15.2	3.5	9.4	045	.2	.8	359	3.8	SSE			.4	5303 26
27	18.2	4.0	11.1	012	.1	.8	001	3.2	SSE			0.0	6438 27
28	18.7	2.6	10.7	119	.2	.8	325	2.5	SSE			0.0	5560 28
29	17.3	3.1	10.2	151	1.5	1.9	158	8.3	SSE			0.0	2443 29
30	16.3	8.5	12.4	034	.6	1.2	155	7.0	N			8.6	3295 30
31	11.9	4.2	8.1	125	.2	.6	342	2.5	SE			.8	2845 31
MONTH	23.4M	1.1M	11.2M	127M	.5M	1.3M	147M	14.0M	SSE (M)			64.2M	148302M

GUST VEL. AT MAX. GUST MINUS 2 INTERVALS 10.2
GUST VEL. AT MAX. GUST MINUS 1 INTERVAL 10.8
GUST VEL. AT MAX. GUST PLUS 1 INTERVAL 13.0
GUST VEL. AT MAX. GUST PLUS 2 INTERVALS 12.1

NOTE: RELATIVE HUMIDITY READINGS ARE UNRELIABLE WHEN WIND SPEEDS ARE LESS THAN ONE METER PER SECOND. SUCH READINGS HAVE NOT BEEN INCLUDED IN THE DAILY OR MONTHLY MEAN FOR RELATIVE HUMIDITY AND DEW POINT.

R&M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT
EKLUTNA LAKE WEATHER STATION
August, 1983



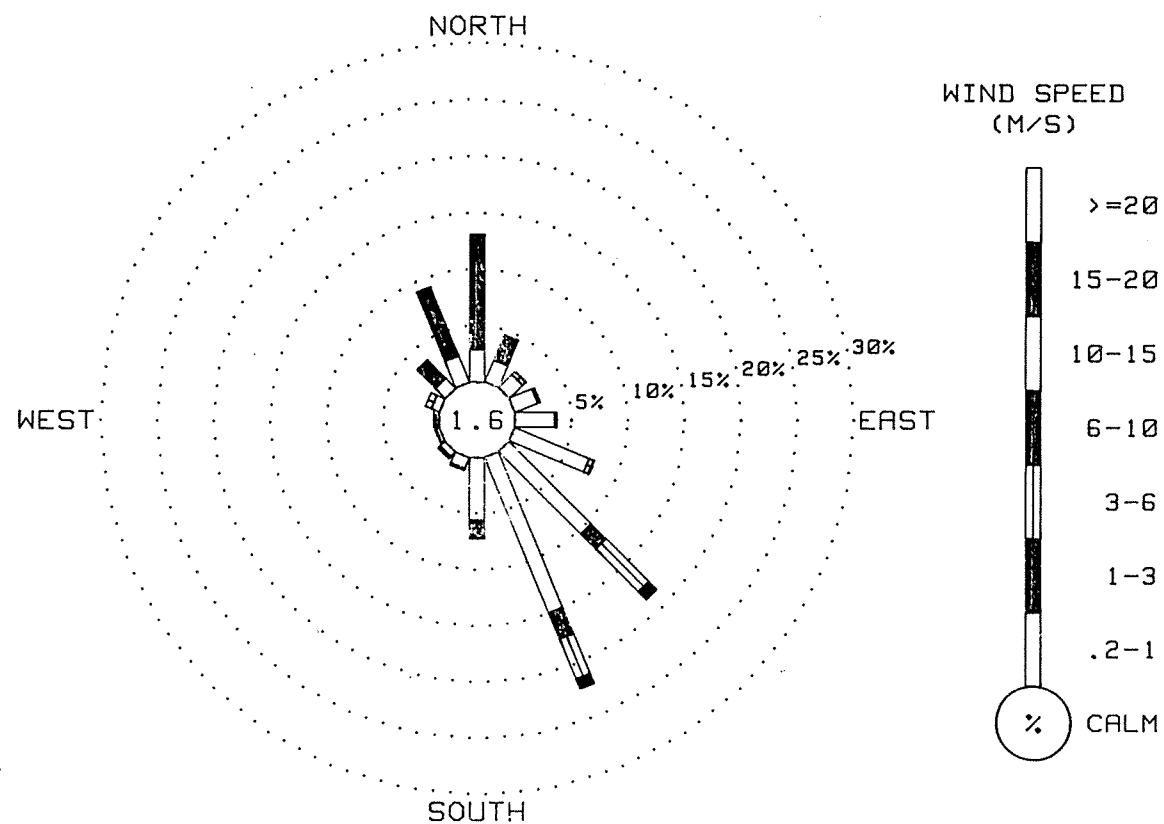
R & M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT

WIND FREQUENCY SUMMARY FOR EKLUTNA LAKE WEATHER STATION
DATA TAKEN DURING August, 1983

DIRECTION	VELOCITY (M/S)							TOTAL
	0.2 TO 1.0	1.0 TO 3.0	3.0 TO 6.0	6.0 TO 10.0	10.0 TO 15.0	15.0 TO 20.0	20.0 OR GREATER	
N	2.88	10.08	.11	0.00	0.00	0.00	0.00	13.07
NNE	2.09	2.35	.04	.04	0.00	0.00	0.00	4.52
NE	1.68	.37	0.00	.04	0.00	0.00	0.00	2.09
ENE	2.20	.22	0.00	0.00	0.00	0.00	0.00	2.43
E	3.55	.11	.04	0.00	0.00	0.00	0.00	3.70
ESE	7.13	.41	.07	0.00	0.00	0.00	0.00	7.62
SE	10.31	1.87	5.38	.97	0.00	0.00	0.00	18.52
SSE	14.94	2.50	3.85	.90	0.00	0.00	0.00	22.18
S	5.56	1.57	.07	0.00	0.00	0.00	0.00	7.21
SSW	1.08	.19	0.00	0.00	0.00	0.00	0.00	1.27
SW	.60	.22	.04	0.00	0.00	0.00	0.00	.86
WSW	.34	.07	0.00	0.00	0.00	0.00	0.00	.41
W	.30	.19	0.00	0.00	0.00	0.00	0.00	.49
WNW	.78	.56	0.00	0.00	0.00	0.00	0.00	1.34
NW	1.27	2.28	0.00	0.00	0.00	0.00	0.00	3.55
NNW	2.54	6.53	.04	0.00	0.00	0.00	0.00	9.11
CALM								1.64
TOTAL	57.24	29.54	9.63	1.94	0.00	0.00	0.00	100.00

NOTE: ALL FREQUENCIES ARE EXPRESSED IN PERCENT
2678 VALID WIND OBSERVATIONS USED TO DEVELOP FREQUENCY SUMMARY
2976 WIND OBSERVATIONS WOULD HAVE BEEN CORRECT FOR 15 MINUTE DATA.

R&M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT
EKLUTNA LAKE WEATHER STATION
August, 1983



WIND ROSE PLOT

DATE	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	DATE	
1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.2	0.0	0.0	.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.4	0.0	0.0		
2	.2	.4	.4	0.0	0.0	.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
3	0.0	0.0	0.0	.2	1.2	1.4	1.0	.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.2	0.0	0.0	0.0	0.0	1.2	1.4	.6	1.2		
4	.8	.2	0.0	.4	.2	0.0	0.0	0.0	0.0	0.0	.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	****	****	****	****	****	****	****	****	****	****	****	****	
9	****	****	****	****	****	****	****	****	****	****	****	****	****	****	****	.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
13	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
14	0.0	0.0	0.0	0.0	.4	.2	0.0	0.0	0.0	0.0	0.0	.2	.4	.6	.6	0.0	0.0	0.0	.4	2.0	0.0	.6	1.0	.4		
15	0.0	.2	.2	0.0	0.0	.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
16	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
17	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
19	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.6	.6	.2	0.0	0.0	0.0	.4		
20																										

R & M CONSULTANTS, INC.

SUSTITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR EKLUTNA LAKE WEATHER STATION
DATA TAKEN DURING September, 1983

DAY 01

DAY 02

DAY 03

HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD
	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW
0300	4.6	*****	6	148	.7	167	1.9	0	0300	9.1	*****	99	028	.8	017	3.2	1
0600	6.0	*****	99	149	.6	176	1.3	5	0600	8.8	*****	8	120	.3	063	1.3	2
0900	9.3	*****	98	154	.6	136	1.9	17	0900	11.8	8.7	81	000	.5	309	3.2	64
1200	11.0	*****	91	108	.4	118	1.9	40	1200	11.2	8.4	83	353	1.4	333	3.8	83
1500	11.4	*****	89	347	.7	336	1.9	21	1500	12.7	7.4	70	344	2.0	311	4.4	27
1800	10.1	*****	99	001	.7	351	1.9	2	1800	9.1	*****	94	355	.8	000	3.2	5
2100	8.8	*****	2	139	.4	133	1.3	0	2100	2.6	*****	5	146	.5	148	1.3	1
2400	8.5	*****	3	136	.4	141	1.3	1	2400	4.0	*****	0	152	.6	144	1.3	0

DAY 04

DAY 05

DAY 06

HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD
	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW
0300	6.0	*****	9	138	.5	130	1.9	0	0300	.1	*****	2	156	.6	170	1.9	0
0600	6.0	*****	1	127	.2	312	1.9	3	0600	-8	*****	4	157	.7	151	1.9	4
0900	6.3	*****	84	012	.8	004	3.8	14	0900	6.9	*****	76	140	.6	149	1.3	58
1200	6.5	4.0	84	106	.3	043	2.5	44	1200	11.1	.2	47	331	.7	318	2.5	79
1500	9.9	*****	58	142	.5	149	2.5	34	1500	12.4	1.7	48	356	2.2	356	4.4	65
1800	7.9	*****	94	129	.2	196	1.9	3	1800	10.7	-2	47	006	1.5	007	3.8	6
2100	4.7	*****	86	080	.5	043	2.5	0	2100	1.2	*****	2	138	.2	023	1.9	0
2400	-9	*****	99	158	.7	176	1.9	0	2400	-1.1	*****	2	161	.7	174	1.9	0

DAY 07

DAY 08

DAY 09

HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.									
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD									
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW			
0300	-1.9	-38.1	4	156	.7	152	1.9	1	0300	-9	*****	3	157	.7	162	1.9	0	0300	*****	*****	**	***	****	***	****	***
0600	-1.7	*****	2	159	.8	159	1.9	4	0600	.6	*****	6	157	.6	174	1.3	3	0600	*****	*****	**	***	****	***	****	***
0900	9.5	*****	57	144	.7	192	1.9	33	0900	8.5	*****	82	132	.4	118	1.9	25	0900	*****	*****	**	***	****	***	****	***
1200	12.6	-1.5	38	351	1.1	347	3.2	49	1200	12.0	5.2	63	043	.5	133	5.7	42	1200	*****	*****	**	***	****	***	****	***
1500	13.6	.2	40	342	1.0	359	1.9	33	1500	*****	*****	**	***	****	006	4.4	***	1500	*****	*****	**	***	****	***	****	***
1800	9.6	*****	85	350	.5	359	2.5	4	1800	*****	*****	**	***	****	***	****	***	1800	9.5	*****	75	080	.2	319	1.3	3
2100	4.8	*****	99	129	.5	146	1.9	0	2100	*****	*****	**	***	****	***	****	***	2100	6.5	*****	91	131	.4	131	1.3	1
2400	2.5	*****	4	154	.6	131	1.3	1	2400	*****	*****	**	***	****	***	****	***	2400	4.8	*****	95	157	.4	127	1.3	0

R & M CONSULTANTS, INC.

SUSTNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR EKLUTNA LAKE WEATHER STATION
DATA TAKEN DURING September, 1983

DAY 10

HOUR	DEW	WIND	WIND	GUST MAX.			
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST RAD
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW
0300	1.8	*****	99	174	.6	182	1.3
0600	.1	*****	0	178	.7	175	1.3
0900	8.3	*****	82	154	.5	174	1.3
1200	11.7	4.7	62	331	1.0	324	2.5
1500	12.4	5.1	61	275	.3	241	2.5
1800	9.8	*****	75	146	.6	153	1.9
2100	6.5	*****	95	110	.4	129	1.3
2400	4.3	*****	0	133	.4	100	1.3

DAY 11

HOUR	DEW	WIND	WIND	GUST MAX.			
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST RAD
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW
0300	2.4	*****	5	173	.6	177	1.3
0600	2.4	*****	0	169	.6	171	1.3
0900	8.5	*****	82	147	.3	167	1.3
1200	12.4	6.3	66	336	1.1	347	2.5
1500	11.3	*****	70	342	1.2	354	3.2
1800	6.8	*****	96	012	.3	347	1.3
2100	.9	*****	3	142	.5	154	1.9
2400	.2	*****	2	149	.6	143	1.9

DAY 12

HOUR	DEW	WIND	WIND	GUST MAX.			
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST RAD
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW
0300	-.9	*****	1	158	.7	148	1.9
0600	-.9	*****	99	160	.7	161	1.9
0900	6.7	*****	88	161	.6	164	1.9
1200	13.6	.5	41	131	2.2	148	7.0
1500	12.3	1.3	47	152	3.4	156	7.6
1800	11.2	.6	48	152	3.1	157	6.3
2100	10.3	.3	50	130	2.3	118	5.7
2400	10.8	.5	49	135	3.5	143	7.6

DAY 13

HOUR	DEW	WIND	WIND	GUST MAX.			
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST RAD
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW
0300	10.8	.5	49	133	3.0	139	7.0
0600	10.2	1.0	53	121	3.0	117	6.3
0900	10.4	1.8	55	136	2.7	138	6.3
1200	12.7	1.3	46	134	4.1	136	8.3
1500	12.3	1.0	46	138	4.3	138	9.5
1800	11.3	.0	46	141	3.3	146	6.3
2100	10.9	.3	48	138	2.4	151	5.1
2400	9.4	1.3	57	133	1.5	141	5.1

DAY 14

HOUR	DEW	WIND	WIND	GUST MAX.			
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST RAD
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW
0300	7.5	3.8	77	359	1.2	347	3.8
0600	5.9	4.2	89	351	1.4	341	3.2
0900	6.0	4.6	91	333	1.2	348	3.2
1200	6.8	*****	86	340	1.2	346	3.2
1500	6.2	4.0	86	356	1.2	350	3.8
1800	5.9	*****	93	326	.4	344	1.9
2100	4.1	*****	4	121	.4	069	1.9
2400	3.2	*****	2	137	.5	137	1.9

DAY 15

HOUR	DEW	WIND	WIND	GUST MAX.			
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST RAD
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW
0300	2.7	*****	4	146	.7	159	1.3
0600	2.1	*****	6	126	.6	126	1.3
0900	4.8	*****	90	141	.6	114	1.3
1200	7.1	2.0	70	001	.2	330	1.9
1500	8.5	2.6	66	327	1.4	325	2.5
1800	6.0	*****	75	232	.6	323	1.9
2100	2.0	*****	4	141	.6	144	1.3
2400	-1.6	*****	6	142	.5	109	1.3

DAY 16

HOUR	DEW	WIND	WIND	GUST MAX.			
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST RAD
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW
0300	-2.5	*****	2	***	***	***	***
0600	-3.5	*****	99	***	***	***	***
0900	3.7	*****	85	145	.5	145	1.3
1200	9.5	.9	55	346	.9	350	1.9
1500	10.7	2.3	56	337	1.4	336	3.2
1800	3.1	*****	91	250	.2	319	2.5
2100	-.8	*****	1	151	.7	164	1.9
2400	-2.2	*****	1	157	.7	164	1.9

DAY 17

HOUR	DEW	WIND	WIND	GUST MAX.			
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST RAD
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW
0300	-3.5	*****	0	160	.8	171	1.9
0600	-2.8	*****	0	154	.8	147	1.9
0900	4.6	*****	88	161	.6	176	1.9
1200	10.6	2.2	56	331	.8	301	1.9
1500	11.9	3.9	58	331	1.3	322	2.5
1800	3.9	*****	84	174	.4	291	1.9
2100	-1.5	*****	3	159	.7	187	1.9
2400	-2.2	*****	0	154	.8	182	1.9

DAY 18

HOUR	DEW	WIND	WIND	GUST MAX.			
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST RAD
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW
0300	-3.2	*****	0	163	.8	160	1.9
0600	-3.4	-3.7	98	168	.8	168	1.9
0900	4.8	*****	78	145	.7	159	1.9
1200	12.8	-3.6	32	146	.1	136	5.7
1500	11.3	-4.1	34	134	4.0	129	7.6
1800	9.4	-3.0	42	147	2.8	144	7.0
2100	9.8	-1.3	46	153	2.2	148	9.5
2400	10.1	-2.0	43	152	4.0	146	8.9

R & M CONSULTANTS, INC.

SUSITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR EKLUTNA LAKE WEATHER STATION
DATA TAKEN DURING September, 1983

DAY 19

DAY 20

DAY 21

HOUR.	DEW								WIND	WIND	GUST MAX.				HOUR	DEW								WIND	WIND	GUST MAX.			
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD			
	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW			
0300	9.9	-1.9	44	150	2.4	150	5.7	1	0300	5.3	*****	9	022	.2	312	1.9	1	0300	4.7	*****	10	160	.5	155	1.3	1			
0600	10.2	-.7	47	130	2.9	119	6.3	1	0600	5.2	*****	12	141	.5	118	1.9	1	0600	5.1	*****	10	156	.6	175	1.3	1			
0900	12.1	.5	45	134	3.9	136	8.3	20	0900	7.8	*****	2	114	.3	157	1.9	16	0900	8.2	*****	98	156	.5	150	1.9	22			
1200	12.3	1.3	47	140	4.1	141	10.2	25	1200	13.0	8.3	73	344	.7	124	5.7	7	1200	9.4	*****	2	191	.2	008	1.3	8			
1500	12.0	1.9	50	132	3.6	126	7.0	10	1500	9.9	*****	6	145	.7	142	5.7	4	1500	9.3	*****	4	068	.2	053	1.3	8			
1800	7.6	*****	91	163	.7	145	5.1	1	1800	9.0	*****	6	046	.3	135	2.5	1	1800	8.3	*****	8	101	.3	105	1.9	1			
2100	6.2	*****	3	281	.5	283	1.9	1	2100	8.1	*****	3	132	.5	162	1.9	0	2100	7.0	*****	9	145	.3	305	1.3	0			
2400	6.9	*****	6	156	.5	259	3.2	0	2400	4.4	*****	12	129	.4	153	1.9	0	2400	6.5	*****	5	135	.5	132	1.3	1			

DAY 22

DAY 23

DAY 24

HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD
	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW
0300	5.7	*****	8	131	.5	158	1.9	1	0300	.3	*****	5	007	1.1	144	3.8	0
0600	5.7	*****	9	116	.4	132	1.3	1	0600	-1	-27.2	11	351	1.2	345	3.2	1
0900	7.1	*****	99	129	.4	150	1.9	17	0900	-1	-.4	98	001	1.7	358	3.2	6
1200	8.7	*****	88	315	.4	255	1.9	26	1200	-1.0	-1.7	95	353	2.4	343	4.4	3
1500	10.3	7.5	83	178	.1	191	3.2	23	1500	1.5	*****	79	332	.4	011	3.2	7
1800	6.2	5.4	95	000	.9	036	7.0	0	1800	.6	-3.7	73	100	.5	054	4.4	0
2100	3.6	-30.7	6	009	1.2	006	6.3	0	2100	-1.5	-5.3	75	030	2.4	020	5.7	1
2400	1.3	*****	7	024	.9	008	4.4	0	2400	-2.9	-7.6	70	020	2.9	016	5.1	0

DAY 25

DAY 26

DAY 27

HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.									
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD									
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW			
0300	-6.9	*****	87	138	.9	170	2.5	0	0300	-10.2	*****	85	137	1.0	141	1.9	1	0300	-6.3	-8.0	88	154	.9	147	1.9	1
0600	-6.6	-8.3	88	150	.9	176	1.9	1	0600	-10.2	-11.8	88	154	1.1	168	2.5	1	0600	-5.8	*****	88	157	.9	183	1.9	1
0900	-2.2	*****	58	134	.6	127	1.9	55	0900	-2.0	*****	68	148	.9	160	1.9	47	0900	.8	*****	68	148	.8	146	1.9	22
1200	.1	*****	50	101	.2	240	2.5	79	1200	2.1	-10.9	38	179	.6	180	2.5	66	1200	6.8	-2.9	50	135	.6	146	5.7	39
1500	.9	-8.9	48	213	.9	234	3.2	45	1500	2.3	-10.7	38	188	.9	268	3.2	39	1500	6.7	-3.3	49	151	4.5	148	8.9	20
1800	-3.0	-8.6	65	155	1.1	154	2.5	1	1800	-1.9	-8.2	62	140	1.1	175	2.5	1	1800	4.6	-1.8	63	141	3.5	148	8.3	1
2100	-7.4	*****	81	134	1.0	142	1.9	0	2100	-6.7	*****	81	140	1.0	129	1.9	1	2100	3.5	-1.8	68	343	2.0	348	5.1	1
2400	-8.5	-11.5	79	143	1.1	123	1.9	0	2400	-6.0	*****	85	152	.9	162	1.9	1	2400	5.0	-.4	68	323	1.7	277	7.0	1

R & M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR EKLUTNA LAKE WEATHER STATION
DATA TAKEN DURING September, 1983

DAY 28

DAY 29

DAY 30

DAY 28								DAY 29								DAY 30									
HOUR	DEW	WIND	WIND	GUST	MAX.			HOUR	DEW	WIND	WIND	GUST	MAX.			HOUR	DEW	WIND	WIND	GUST	MAX.				
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST		
	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S		
0300	3.6	-1.8	73	342	2.5	343	6.3	1	0300	12.6	3.0	52	146	2.8	142	8.9	1	0300	12.2	4.2	58	134	4.6	130	8.9
0600	3.3	-1.0	73	322	1.8	335	3.8	1	0600	12.2	2.9	53	136	6.0	134	12.1	1	0600	11.0	2.8	57	140	3.4	130	7.0
0900	3.4	-1.3	71	327	1.8	328	3.8	22	0900	9.4	6.7	83	135	7.2	137	14.0	6	0900	9.3	3.8	68	106	.5	149	3.8
1200	5.6	1.2	73	332	1.5	334	3.8	11	1200	11.9	6.7	70	141	9.7	145	15.9	17	1200	11.1	4.2	62	341	.6	357	3.2
1500	7.9	3.2	72	323	1.8	329	5.1	6	1500	11.6	8.6	82	133	9.8	140	15.9	8	1500	9.9	*****	70	003	.9	352	5.7
1800	11.7	3.0	55	142	4.0	136	9.5	0	1800	11.8	6.1	68	138	8.8	139	14.6	1	1800	7.6	*****	85	325	.3	276	1.9
2100	5.1	1.8	79	339	1.5	124	5.7	1	2100	11.2	6.0	70	137	5.3	135	10.8	0	2100	6.5	5.4	93	159	.6	208	1.9
2400	7.5	4.8	83	322	.8	285	3.8	1	2400	11.5	5.9	68	135	3.3	137	7.6	1	2400	4.3	-40.6	1	140	.6	100	1.9

R & M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT

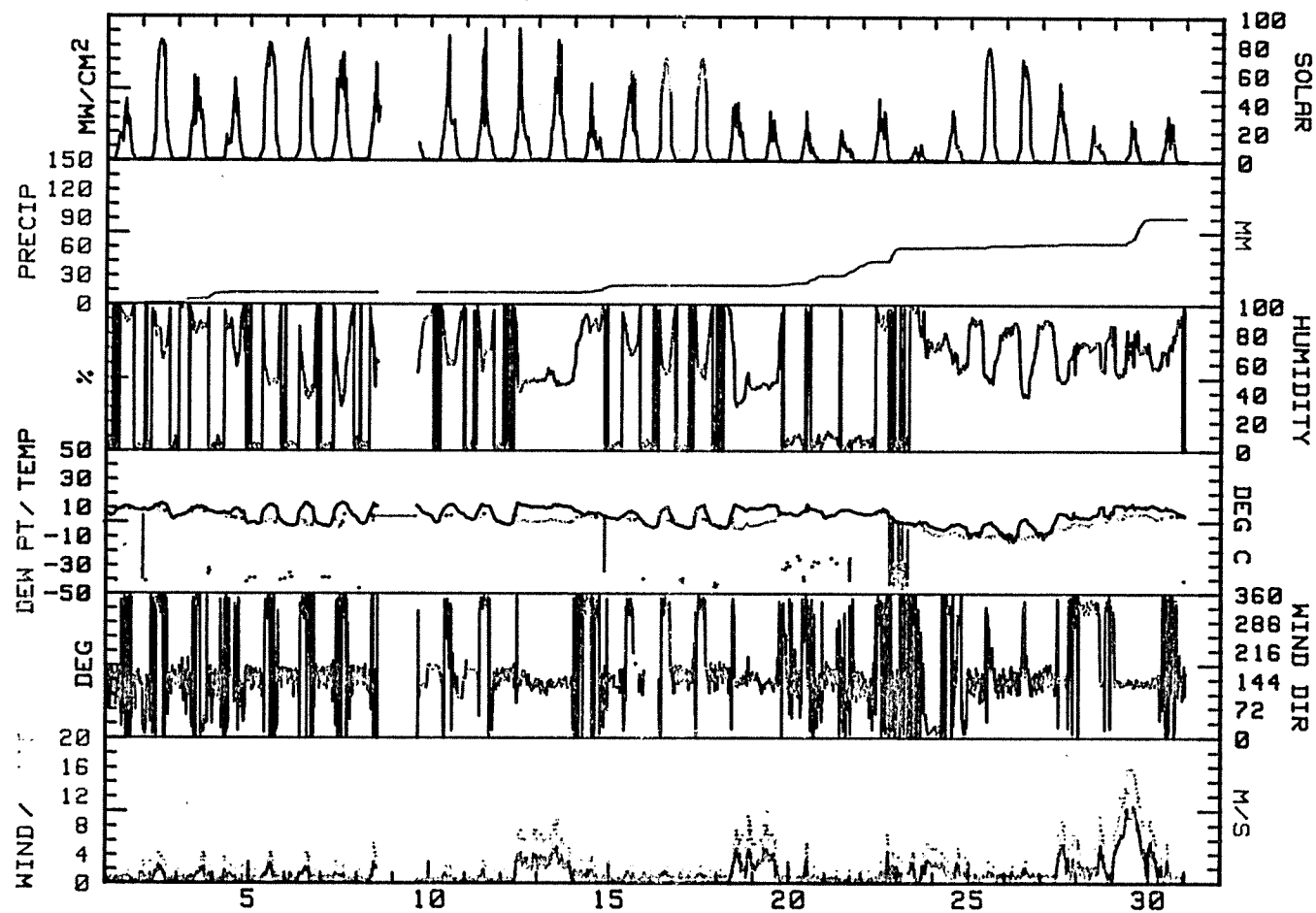
MONTHLY SUMMARY FOR EKLUTNA LAKE WEATHER STATION
DATA TAKEN DURING September, 1983

DAY	MAX. TEMP. DEG C	MIN. TEMP. DEG C	MEAN TEMP. DEG C	RES. WIND DIR. DEG	RES. WIND SPD. M/S	AVG. WIND SPD. M/S	MAX. GUST DIR. DEG	MAX. GUST SPD. M/S	P'VAL	MEAN RH %	MEAN DP DEG C	PRECIP MM	DAY'S SOLAR ENERGY WH/SDM	DAY
1	11.8	4.4	8.1	117	.2	.6	167	1.9	SSE			.8	2330	1
2	13.7	2.0	7.9	006	.5	1.0	311	4.4	N			1.4	5616	2
3	11.5	4.0	7.8	047	.4	1.0	029	4.4	SSE			8.6	3250	3
4	9.9	-1.2	4.4	113	.3	.7	004	3.8	SE			2.0	2820	4
5	12.7	-1.4	5.7	029	.3	1.1	356	4.4	SSE			0.0	5840	5
6	14.0	-2.8	5.6	344	.1	1.0	007	4.4	SSE			0.0	5518	6
7	14.4	-3.2	5.6	102	.1	.8	347	3.2	SSE			0.0	4800	7
8	13.5M	-1.5M	6.0M	089M	.3M	1.0M	133M	5.7M	SSE(M)			0.0M	4197M	8
9	11.9M	4.8M	8.4M	133M	.3M	.4M	319M	1.3M	SSE(M)**	*****		.2M	706M	9
10	12.8	-.5	6.2	163	.2	.6	324	2.5	S			0.0	3423	10
11	12.9	-.2	6.4	058	.0	.7	354	3.2	SSE			0.0	3218	11
12	14.0	-1.7	6.2	144	2.0	2.1	156	7.6	SSE			0.0	3280	12
13	13.2	9.3	11.3	134	3.0	3.1	130	9.5	SE	49	.8	0.0	3953	13
14	9.1	3.2	6.2	351	.7	1.0	347	3.8	N			6.0	1868	14
15	8.5	-1.6	3.5	276	.0	.8	325	2.5	SSE			.8	3403	15
16	11.1	-3.6	3.8	343	.1	.9	336	3.2	NNW			0.0	4688	16
17	12.7	-4.0	4.4	168	.2	.8	322	2.5	SSE			0.0	4579	17
18	12.8	-3.8	4.5	148	1.9	2.1	148	9.5	SSE			0.0	2385	18
19	12.8	5.9	9.4	139	2.2	2.5	141	10.2	SE			1.8	1524	19
20	13.2	3.6	8.4	108	.2	.8	124	5.7	SSE			8.6	1215	20
21	9.4	3.1	6.3	145	.3	.5	150	1.9	SSE			11.0	1083	21
22	10.4	.5	5.5	029	.3	1.0	036	7.0	ESE			17.4	2050	22
23	1.5	-2.9	-.7	014	1.5	1.8	020	5.7	N			1.0	638	23
24	-.3	-8.4	-4.4	358	1.2	1.8	028	5.1	NNE	69	-8.1	.6	1595	24
25	.9	-10.0	-4.6	151	.7	1.0	234	3.2	SE	68	-9.1	1.8	4790	25
26	3.2	-11.8	-4.3	153	.9	1.1	268	3.2	SSE	62	-9.9	1.2	4175	26
27	7.9	-9.3	-.7	145	.9	2.1	148	8.9	SSE	63	-3.6	.8	2558	27
28	11.7	2.9	7.3	335	1.0	2.1	136	9.5	NNW	72	1.1	0.0	1160	28
29	13.6	6.8	10.2	137	6.6	6.7	145	15.9	SE	67	5.5	26.8	1173	29
30	12.7	4.3	8.5	130	1.0	1.8	130	8.9	SE			0.0	1605	30
MONTH	14.4M	-11.8M	5.1M	126M	.6M	1.5M	145M	15.9M	SE(M)	M	M	91.6M	89413M	

GUST VEL. AT MAX. GUST MINUS 2 INTERVALS 14.0
GUST VEL. AT MAX. GUST MINUS 1 INTERVAL 14.0
GUST VEL. AT MAX. GUST PLUS 1 INTERVAL 14.0
GUST VEL. AT MAX. GUST PLUS 2 INTERVALS 12.7

NOTE: RELATIVE HUMIDITY READINGS ARE UNRELIABLE WHEN WIND SPEEDS ARE LESS THAN ONE METER PER SECOND. SUCH READINGS HAVE NOT BEEN INCLUDED IN THE DAILY OR MONTHLY MEAN FOR RELATIVE HUMIDITY AND DEW POINT.

R&M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT
EKLUTNA LAKE WEATHER STATION
September, 1983



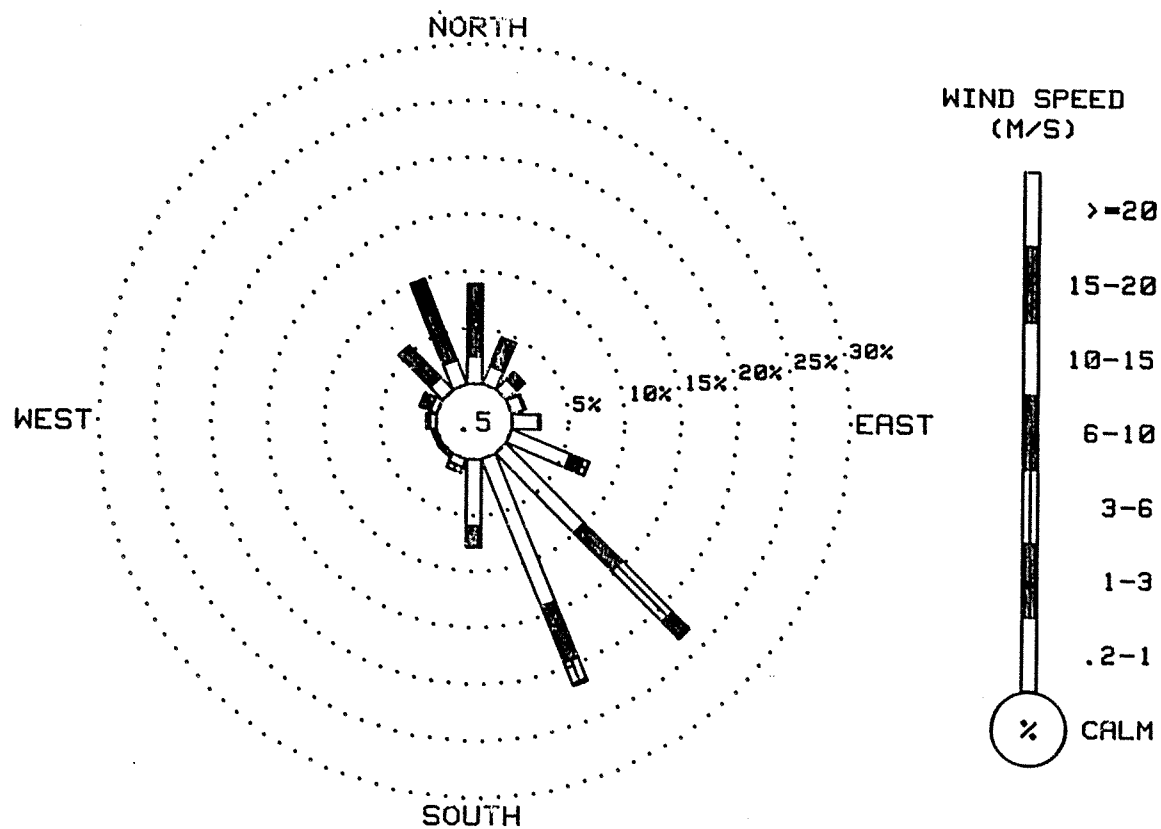
R & M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT

WIND FREQUENCY SUMMARY FOR EKLUTNA LAKE WEATHER STATION
DATA TAKEN DURING September, 1983

DIRECTION	VELOCITY (M/S)							TOTAL
	0.2 TO 1.0	1.0 TO 3.0	3.0 TO 6.0	6.0 TO 10.0	10.0 TO 15.0	15.0 TO 20.0	20.0 OR GREATER	
N	2.46	6.22	.15	0.00	0.00	0.00	0.00	8.83
NNE	1.75	2.42	.37	0.00	0.00	0.00	0.00	4.55
NE	1.30	.89	.04	0.00	0.00	0.00	0.00	2.24
ENE	1.15	.15	0.00	0.00	0.00	0.00	0.00	1.30
E	2.35	.15	0.00	0.00	0.00	0.00	0.00	2.50
ESE	5.66	1.12	.63	0.00	0.00	0.00	0.00	7.41
SE	9.91	4.69	6.41	1.83	.22	0.00	0.00	23.06
SSE	14.16	5.25	2.09	.04	.07	0.00	0.00	21.61
S	5.92	1.79	.04	0.00	0.00	0.00	0.00	7.75
SSW	.82	.52	0.00	0.00	0.00	0.00	0.00	1.34
SW	.34	.11	0.00	0.00	0.00	0.00	0.00	.45
WSW	.22	.19	0.00	0.00	0.00	0.00	0.00	.41
W	.60	.26	.04	0.00	0.00	0.00	0.00	.89
WNW	.67	.93	.04	0.00	0.00	0.00	0.00	1.64
NW	1.60	3.91	0.00	0.00	0.00	0.00	0.00	5.51
NNW	2.35	7.30	.34	0.00	0.00	0.00	0.00	9.99
CALM								.52
TOTAL	51.27	35.92	10.13	1.86	.30	0.00	0.00	100.00

NOTE: ALL FREQUENCIES ARE EXPRESSED IN PERCENT
2684 VALID WIND OBSERVATIONS USED TO DEVELOP FREQUENCY SUMMARY
2880 WIND OBSERVATIONS WOULD HAVE BEEN CORRECT FOR 15 MINUTE DATA.

R&M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT
EKLUTNA LAKE WEATHER STATION
September, 1983



VI. LONGWAVE RADIATION DATA SUMMARIES

EKLUTNA LAKE STATION, WATER YEAR 1983

LONGWAVE RADIATION DATA SUMMARY
EKLUTNA LAKE CLIMATE STATION

OCTOBER 1982			NOVEMBER 1982		DECEMBER 1982		JANUARY 1983	
Daily Avg	Daily Total		Daily Avg	Daily Total	Daily Avg	Daily Total	Daily Avg	Daily Total
LW Rad	LW Rad		LW Rad	LW Rad	LW Rad	LW Rad	LW Rad	LW Rad
(mw/cm2)	(kJ/m2-day)		(mw/cm2)	(kJ/m2-day)	(mw/cm2)	(kJ/m2-day)	(mw/cm2)	(kJ/m2-day)
DAY								
1	M	M	25	21,600	25	21,600	M	M
2	M	M	M	M	26	22,500	M	M
3	M	M	M	M	28	M	M	M
4	M	M	M	M	M	M	M	M
5	M	M	M	M	M	M	M	M
6	M	M	M	M	29	25,000	M	M
7	M	M	M	M	31M	26,800M	M	M
8	M	M	M	M	M	M	M	M
9	26M	22,500M	M	M	M	M	M	M
10	M	M	M	M	29	25,000	M	M
11	M	M	M	M	M	M	M	M
12	M	M	M	M	M	M	M	M
13	M	M	M	M	18	15,600	M	M
14	M	M	M	M	M	M	M	M
15	M	M	M	M	M	M	M	M
16	M	M	M	M	M	M	M	M
17	M	M	27	23,300	M	M	M	M
18	M	M	30	25,900	M	M	M	M
19	M	M	26	22,500	M	M	M	M
20	M	M	M	M	M	M	M	M
21	M	M	M	M	M	M	M	M
22	M	M	M	M	25	21,600	M	M
23	22	19,000	M	M	M	M	M	M
24	23	19,900	M	M	M	M	M	M
25	M	M	M	M	25	21,600	M	M
26	26	22,500	M	M	26	22,500	M	M
27	25	21,600	M	M	25M	21,600M	M	M
28	M	M	M	M	25M	21,600	M	M
29	M	M	M	M	20	17,300	M	M
30	M	M	M	M	M	M	M	M
31	M	M	-	-	M	M	M	M
Monthly Avg/Total	24.4M	653,500M	27.0M	699,800M	25.5M	684,000M	M	M

Notes:

- (1) Daily average is determined from 8 values taken at 3-hour intervals.
 (2) "M" after value means less than 8 valid readings for the day. "M" in place of value means no data for the day.
 Where part of the month is missing, the monthly total value is extrapolated from the monthly average value.

LONGWAVE RADIATION DATA SUMMARY (cont')
EKLUTNA LAKE CLIMATE STATION

DAY	FEBRUARY 1983		MARCH 1983		APRIL 1983		MAY 1983	
	Daily Avg LW Rad (mw/cm2)	Daily Total LW Rad (kJ/m2-day)	Daily Avg LW Rad (mw/cm2)	Daily Total LW Rad (kJ/m2-day)	Daily Avg LW Rad (mw/cm2)	Daily Total LW Rad (kJ/m2-day)	Daily Avg LW Rad (mw/cm2)	Daily Total LW Rad (kJ/m2-day)
1	M	M	M	M	M	M	M	M
2	M	M	M	M	M	M	M	M
3	M	M	M	M	M	M	M	M
4	M	M	M	M	M	M	M	M
5	M	M	M	M	M	M	M	M
6	M	M	M	M	M	M	M	M
7	M	M	M	M	M	M	M	M
8	M	M	M	M	M	M	M	M
9	M	M	M	M	M	M	M	M
10	M	M	M	M	M	M	M	M
11	M	M	M	M	M	M	M	M
12	M	M	M	M	M	M	M	M
13	M	M	M	M	M	M	M	M
14	M	M	M	M	M	M	M	M
15	M	M	M	M	M	M	M	M
16	M	M	M	M	M	M	M	M
17	M	M	M	M	M	M	M	M
18	M	M	M	M	M	M	M	M
19	M	M	M	M	M	M	M	M
20	M	M	M	M	M	M	M	M
21	M	M	M	M	M	M	M	M
22	M	M	M	M	M	M	M	M
23	M	M	M	M	M	M	M	M
24	M	M	M	M	M	M	M	M
25	M	M	M	M	M	M	M	M
26	M	M	M	M	M	M	M	M
27	M	M	M	M	M	M	M	M
28	M	M	M	M	M	M	M	M
29	-	-	M	M	M	M	M	M
30	-	-	M	M	M	M	M	M
31	-	-	M	M	-	-	M	M
Monthly Avg/Total	M	M	M	M	M	M	M	M

Notes:

- (1) Daily average is determined from 8 values taken at 3-hour intervals.
 (2) "M" after value means less than 8 valid readings for the day. "M" in place of value means no data for the day.
 Where part of the month is missing, the monthly total value is extrapolated from the monthly average value.

LONGWAVE RADIATION DATA SUMMARY (cont.)
EKLUNNA LAKE CLIMATE STATION

DAY	JUNE 1983		JULY 1983		AUGUST 1983		SEPTEMBER 1983	
	Daily Avg LW Rad (mw/cm2)	Daily Total LW Rad (kJ/m2-day)	Daily Avg LW Rad (mw/cm2)	Daily Total LW Rad (kJ/m2-day)	Daily Avg LW Rad (mw/cm2)	Daily Total LW Rad (kJ/m2-day)	Daily Avg LW Rad (mw/cm2)	Daily Total LW Rad (kJ/m2-day)
1	M	M	43.7	37,720	35.9	31,000	37.1	32,080
2	M	M	36.6	31,640	33.5	28,940	34.2	29,590
3	M	M	36.7	31,750	34.6	29,920	36.1	31,210
4	M	M	39.2	33,910	38.3	33,050	32.1	27,760
5	M	M	38.0	32,830	38.5	33,260	31.1	26,890
6	M	M	41.5	35,860	36.5	31,540	30.0	25,920
7	M	M	39.2	33,910	36.6	31,640	33.5	28,940
8	M	M	36.0	31,100	37.1	32,080	32.8	28,340
9	M	M	35.0	30,240	38.0	32,830	33.3	28,800
10	M	M	35.8	30,890	35.9	30,980	32.2	27,860
11	M	M	34.8	30,050	35.4	30,610	32.4	28,020
12	M	M	39.0	33,700	38.5	33,260	32.4	27,970
13	M	M	34.0	29,380	34.0	29,380	34.0	29,380
14	M	M	35.3	30,460	34.3	29,600	34.9	30,130
15	M	M	35.1	30,350	33.5	28,940	32.8	28,350
16	M	M	39.7	34,340	26.4	22,810	29.1	25,160
17	M	M	36.4	31,430	M	M	33.4	28,840
18	30.3	26,210	35.3	30,530	M	M	31.6	27,320
19	38.0	32,830	36.3	31,320	M	M	35.5	30,670
20	34.4	29,700	35.8	30,890	M	M	34.9	30,130
21	39.1	33,800	36.5	31,540	M	M	35.6	30,780
22	38.5	33,290	37.6	32,510	23.9	20,630	34.7	30,020
23	35.9	31,000	35.9	31,000	30.0	25,920	32.5	28,080
24	35.8	30,890	37.5	32,400	39.2	33,870	32.2	27,860
25	37.6	32,510	33.0	28,510	35.4	30,560	27.5	23,760
26	38.4	33,160	35.0	30,240	37.4	32,290	25.5	22,030
27	44.5	34,450	38.5	33,260	45.0	38,880	32.5	28,080
28	36.1	31,200	34.4	29,700	33.1	28,610	35.8	30,890
29	36.6	31,640	38.6	33,370	36.3	31,320	36.3	31,320
30	36.0	31,100	36.1	31,210	32.9	28,400	34.3	29,610
31	-	-	35.9	30,980	35.8	30,890	-	-
Monthly								
Avg/Total	37.0M	959,400M	36.8	987,000	35.2M	943,600M	33.0	855,800

Notes:

- (1) Daily average is determined from 8 values taken at 3-hour intervals.
 (2) "M" after value means less than 8 valid readings for the day. "M" in place of value means no data for the day.
 Where part of the month is missing, the monthly total value is extrapolated from the monthly average value.