

**SUSITNA  
HYDROELECTRIC PROJECT**

FEDERAL ENERGY REGULATORY COMMISSION  
PROJECT No. 7114

**PROCESSED CLIMATIC DATA  
OCTOBER 1983 - DECEMBER 1984**

**VOLUME 1  
SUSITNA GLACIER STATION  
(No. 0610 )**

**PREPARED BY**

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

**UNDER CONTRACT TO**

**HARZA-EBASCO  
SUSITNA JOINT VENTURE**

**FINAL REPORT**

**JUNE 1985  
DOCUMENT No. 2767**

**ALASKA POWER AUTHORITY**

**SUSITNA HYDROELECTRIC PROJECT**

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Prepared for  
**Alaska Power Authority**

**Final Report  
June 1985**

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SUSITNA HYDROELECTRIC PROJECT**

**TASK 4 - HYDROLOGY**

**PROCESSED CLIMATIC DATA**

**OCTOBER 1983 - DECEMBER 1984**

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ALASKA POWER AUTHORITY  
SUSITNA HYDROELECTRIC PROJECT

PROCESSED CLIMATIC DATA - SUSITNA GLACIER STATION  
OCTOBER 1983 - DECEMBER 1984

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## ACKNOWLEDGMENTS

These climatic data were collected under contract to Harza-Ebasco Susitna Joint Venture for the Alaska Power Authority on the Susitna Hydroelectric Project. Field maintenance and data collection were performed by the hydrology staff of R&M Consultants, Incorporated. Data reduction and processing were performed by Debbie Stephens, Len Story, Blair Parker, Jim Nelson and Jeff Coffin, using computer programs developed by Mark Holmstrand and revised by Bill Ashton.

## 1.0 BACKGROUND

### 1.1 Purpose

The Glacier climate station was installed adjacent to Susitna Glacier in the Eastern Alaska Range to obtain data representative of the high elevations within the Susitna drainage basin.

### 1.2 Station Description

The Glacier weather station lies near the confluence of three major glaciers emanating from the south slope of Mt. Hayes (13,832 feet). The site is located at the 4,700 feet level of a barren ridge which runs roughly east and west, and slopes steeply to the west. The instrument is on the southwest flank, approximately 500 feet above the glacier ice at  $63^{\circ}31'50''$  N latitude and  $146^{\circ}53'40''$  W longitude. Mountains rise abruptly from the glacier filled valleys to elevations over 10,000 feet. The mountains to the south of the site rise to over 7,000 feet at a distance of less than 3 miles. This site is shaded for most of the day during December and January and when sun angles are below  $9^{\circ}$  from the horizontal. (See Table 1.1 for angular elevations of terrain obstructions.)

Winds generally blow downhill in these glaciated mountains resulting in winds from the north or east at the instrument.

### 1.3 Methods of Data Collection

The climatic data at Glacier are collected using a Model 5100 Weather Wizard Digital Weather Station, manufactured by Meteorology Research, Inc., now part of Belfort Instrument Company. The Weather Wizard measures, processes, and records several weather parameters, which are described below. A 12-volt power supply powers the station and is kept charged by a solar panel. Data are recorded on a low-temperature cassette tape at 30-minute intervals. Fifteen-minute recording intervals were used prior to October 5, 1983. The station is visited approximately

once per month for maintenance and repairs, and to retrieve the data tapes.

Recorded data include instantaneous values of temperature, relative humidity, solar radiation intensity, and battery voltage; the cumulative amount of precipitation measured since the last reset; and several wind parameters. Wind direction is sampled every 15 seconds and averaged over the recording interval. Wind speed is measured by counting each revolution of the cup anemometer and averaging the speed over the recording interval (15 or 30 minutes). The fastest 15-second average speed for the interval is reported as the peak gust.

The anemometer and wind vane are part of a sensor array mounted atop a 3.5-meter tripod adjacent to the recorder shelter. The sensor array also contains a short boom with a radiation shield for the temperature and relative humidity sensors. A rain gage and solar radiation sensor are located on a separate platform 10 meters to the southeast from the main platform. The tipping-bucket rain gage is mounted on a 0.6-meter post and plumbed vertically. The solar sensor is installed facing vertically upward atop a 1.5-meter tripod.

Table 1.2 describes sensor types and performance characteristics for each parameter. The performance characteristics were provided by MRI. Conversion factors for the units are provided in the appendix.

#### 1.4 Station History

The Glacier Station was installed on July 20, 1980. This report covers the period from October 1983 to December 1984 only. There are three previous data reports for this station:

Report	Period Covered
1. Processed Climatic Data Volume 1 Susitna Glacier Station (No. 0610) March 1982 (R&M Consultants)	July 1980 - September 1981
2. Processed Climatic Data Volume 1 Susitna Glacier Station (No. 0610) December 1982 (R&M Consultants)	October 1981 - September 1982
3. Processed Climatic Data Volume 1 Susitna Glacier Station (No. 0610) June 1984 (R&M Consultants)	October 1982 - September 1983

Tables 1.3 through 1.6 list the inspection dates and maintenance performed for the station, significant data gaps, adjustments to raw data, and values that have been estimated where data are missing. Periods with more than one hour of missing data are shown on Table 1.4. Intermittent gaps in the wind data occur frequently in the winter and are not identified individually. The number of missing days for these cases is approximated by the total number of missing hours during the period. The beginning and ending dates for the data gaps and for the adjustments to raw data correlate with the inspection and maintenance dates. Relative humidity data for measurements with wind speeds less than 1.0 m/sec are not valid and thus not used in calculating the percentage of total observations for each month, which are tabulated in Table 2.2. However, these missing RH values do not constitute data gaps in Table 1.4.

TABLE 1.1. ANGULAR ELEVATIONS OF TERRAIN OBSTRUCTIONS  
AROUND GLACIER WEATHER STATION

Azimuth(1) (True)	Elevation(2) (ft, MSL)	Vertical Angle(3)
14°	7690	11°
37°	7381	8.3°
58°	7725	8.9°
73°	7120	14°
75°	8451	11°
94°	5485	15°
139°	7250	7.2°
154°	6990	7.2°
180°	7172	9.7°
228°	5565	2.4°
287°	6490	4.8°
290°	6170	6.5°
305°	6710	7.1°
350°	7110	13°
352°	8220	14°

NOTES:

- (1) Azimuth angles are in degrees from true north.
- (2) Elevations were obtained from U.S.G.S 1:63,360 scale maps. Points used were selected mountain peaks and other features surrounding the weather station. Elevation differences from the weather station at 4700 ft, msl. and horizontal distances were used to triangulate the vertical angles.
- (3) Vertical angles are measured above the horizontal.

TABLE 1.2 DESCRIPTION OF METEOROLOGIC SENSORS

<u>Sensor</u>	<u>Model #</u>	<u>Manufacturer</u>	<u>Description</u>	<u>Operable Range</u>	<u>Accuracy</u>
Temperature	T5100	MRI	Linearized Thermistor	-30°C - +50°C	±1°C
Relative Humidity Electro-Humidity Sensor	PCRC-11	Phys-Chemical Research Corp.	Exposed circuit element Senses changes in RH by changes in impedance	10% to 95%	±6%
Solar Radiation	RS 1008 Photo Voltaic Pyranometer	RHO Sigma Corp.	Temperature-Compensated Silicon Photovoltaic Cell	0 to 140 Milliwatts/cm <sup>2</sup>	±5mw/cm <sup>2</sup>
Precipitation	P5100	MRI	Tipping Bucket Rain Gage	0 to 99.8 mm	±1% up to 76.2 mm/hr ±5% from 76.2 mm/hr to 254 mm/hr
Wind Speed	5100	MRI	Cup Anemometer (vertical axis)	0 to 50 m/sec	±0.5 m/sec
Wind Direction	5100	MRI	Sensitive Vane driving a 360° Plastic Film Potentiometer	0 to 359°	±3.6°

TABLE 1.3. INSPECTION DATES AND MAINTENANCE  
GLACIER CLIMATE STATION  
OCTOBER 1983 TO DECEMBER 1984

Inspection Date	Maintenance
10/05/83	Changed to 30 minute recording interval.
11/16/83	None.
01/09/84	Reset date to 009.
02/27/84	None.
04/09/84	Weather Wizard removed for repairs.
05/04/84	Re-installed Weather Wizard.
	RH sensor replaced and calibrated.
05/23/84	None.
07/16/84	None
08/27/84	Weather Wizard removed for repairs.
09/22/84	Weather Wizard replaced.
	Changed to 5 minute recording interval.
	RH oscillator replaced.
11/02/84	Changed to 15 minute recording interval.
	Attached new wind vane tail.
11/28/84	RH sensor calibrated.
	Changed to 30 minute recording intervals.

NOTE: Inspections noted where no maintenance was performed are dates when cassette tapes were replaced.

TABLE 1.4. EXPLANATION OF DATA GAPS AT  
SUSITNA GLACIER CLIMATE STATION  
OCTOBER 1983 TO DECEMBER 1984

<u>Period</u>	<u>Approximate Number of Missing Days By Parameter</u>							<u>Explanation</u>
	<u>Temp</u>	<u>RH</u>	<u>WS</u>	<u>WD</u>	<u>Precip</u>	<u>Solar</u>	<u>Gust</u>	
10/1 - 10/21/83			1	6			1	Frozen anemometer and wind vane (intermittent).
11/11 - 11/30/83		1.5						Low RH values deleted from raw data.
12/1 - 12/5/83				1				Frozen wind vane (intermittent).
2/13 - 2/25/84				1.5				Frozen wind vane (intermittent).
2/27 - 5/4/84	67	67	67	67	33	67	67	Weather Wizard not functioning.
5/4 - 5/23/84		2						Bad RH oscillator. Intermittent erratic data.
5/23 - 6/11/84		17						Bad RH oscillator.
6/11 - 6/26/84		1.5						Bad RH oscillator. Intermittent erratic data.
6/26 - 9/22/84	87.5	87.5	87.5	87.5	87.5	87.5	87.5	Weather Wizard not functioning.
10/2 - 10/8/84				0.3				Frozen wind vane (intermittent).
10/8 - 11/2/84	25	25	25	25		25	25	Data tape ran out due to 5 minute recording intervals.
11/11 - 12/14/84	2	2	1.5	3		0.5	2	Weather Wizard malfunction. Intermittent garbled data.
11/24 - 12/26/84			0.5	3.5			0.5	Frozen anemometer and wind vane (intermittent).
Total	182	204	182	195	120	180	183	

## NOTE:

Precipitation data collected April through September only. Collector is not designed for winter temperatures.

TABLE 1.5. ADJUSTMENTS MADE TO RAW DATA  
GLACIER CLIMATE STATION  
OCTOBER 1983 TO DECEMBER 1984

Period	Solar Radiation Adjustment	RH Adjustment	Wind Direction Adjustment
10/1 - 11/16/83	-1 mW/cm <sup>2</sup>	-15 RH Points	
11/16 - 12/31/83	-1	-12	
1/1 - 2/27/84	-1	-7	
5/4 - 6/11/84	-1		
6/12 - 6/26/84	-1	-25	
9/22 - 10/8/84	-1	-2	-180°
11/2 - 11/28/84	-1	+5	
11/28 - 12/31/84	-1	+7	

NOTE: No data 2/27 - 5/4 and 6/26 - 9/22 due to Weather Wizard malfunction.

TABLE 1.6. ESTIMATES FOR MISSING DATA  
GLACIER CLIMATE STATION  
OCTOBER 1983 TO DECEMBER 1984

<u>Date</u>	<u>Time (AST)</u>	<u>Temp (°C)</u>	<u>Wind Speed (m/s)</u>	<u>Dir (Deg)</u>	<u>Gust (m/s)</u>	<u>RH (%)</u>	<u>Precip (mm)</u>	<u>Solar Radiation (mw/cm²)</u>
11/03/84	2015					33		
11/04/84	0945	-11.0						
11/07/84	1100							8
	1315							13
	2130							
11/08/84	0145	-7.7						
	0300	-7.1				77	0	
	0315	-6.7				74	0	
	0800	-7.8					0	
11/09/84	0900					90		
	1100					90		
	1415							4
	1515					80		
	1600							2
	2315					84		
	2345	-13.5	1.1			57		
11/10/84	0530							
	0715					54	0	
	0845							
	0900					52	0	
	1100					45	0	
	1115						6	
							9	
11/11/84	0230					50		
	0245					50		
	0345-0415					50		
	0445-0900							0
	0500	-15.6						
	0600	-16.4						
	1215	-15.7						
	2130-2315					48		
	2315	-17.8						0
	2230	-17.5						
	2245	-17.7						
	2200-2315					53		

## NOTES:

1. These data have been estimated where gaps exist in the record. Estimates were made by interpolating between valid data points preceding and following the missing data.
2. Precipitation values are the amounts estimated to have fallen in the preceding half-hour.

TABLE 1.6. ESTIMATES FOR MISSING DATA  
 GLACIER CLIMATE STATION  
 OCTOBER 1983 TO DECEMBER 1984  
 (Continued)

<u>Date</u>	<u>Time</u> <u>(AST)</u>	<u>Temp</u> <u>(°C)</u>	<u>Wind</u> <u>Speed</u> <u>(m/s)</u>	<u>Wind</u> <u>Dir</u> <u>(Deg)</u>	<u>Gust</u> <u>(m/s)</u>	<u>RH</u> <u>(%)</u>	<u>Precip</u> <u>(mm)</u>	<u>Solar Radiation</u> <u>(mw/cm²)</u>
11/12/84	0430	-19.0						
	1045	-17.8						
	1200	-16.7						
	0415-0915					44		0
11/20/84	1045					64		
	1300					73		1
	1500					78		
	1600							0
	1830						0	
	1915						0	
	2000	-1.9				70		
	2015	-2.0						
11/22/84	0415					96		
	0645	-8.0						
	1030							1
	1045						1	
	1315						1	
	1330							0
	1800					79		
11/23/84	0415					78		
	1300							0
	1730						2	
	2230							
11/24/84	0600	-10.9				1.9		
	1900	-14.2						
	1830						87	
	2330						89	
11/25/84	0815						84	
	0830							0
	1330							1
	1345							0
	1315							
	1830							

## NOTES:

1. These data have been estimated where gaps exist in the record. Estimates were made by interpolating between valid data points preceding and following the missing data.
2. Precipitation values are the amounts estimated to have fallen in the preceding half-hour.

TABLE 1.6. ESTIMATES FOR MISSING DATA  
 GLACIER CLIMATE STATION  
 OCTOBER 1983 TO DECEMBER 1984  
 (Continued)

<u>Date</u>	<u>Time (AST)</u>	<u>Temp (°C)</u>	<u>Wind Speed (m/s)</u>	<u>Wind Dir (Deg.)</u>	<u>Gust (m/s)</u>	<u>RH (%)</u>	<u>Precip (mm)</u>	<u>Solar Radiation (mw/cm²)</u>
11/26/84	0045					66		
	0345					71		0
	0545-0630							0
	0715							0
	0600	-16.7						0
	0830							0
	0930-1115							0
	1130					51		0
	1845					74		0
11/27/84	0345	-16.0				53		
	0330							0
	0415	-16.0				53		0
	0745					48		0
11/28/84	1130	-13.0				69		2
12/03/84	2100					73		
12/04/84	0830					66		
	0000					81		
12/09/84	0930					60		
	1000	-14.2						1
	1030	-14.4						1
	1100							2
	1130							2
	1200							1
	1230	-14.7						0
	1300-1330							0
	1400	-16.8						0
	1430-0000							0
	1500							0
	1530							0
12/10/84	0030-0230					70		
	0630-1030					71		0
	1900	-15.6						0
	1430-0000							0

## NOTES:

1. These data have been estimated where gaps exist in the record. Estimates were made by interpolating between valid data points preceding and following the missing data.
2. Precipitation values are the amounts estimated to have fallen in the preceding half-hour.

TABLE 1.6. ESTIMATES FOR MISSING DATA  
 GLACIER CLIMATE STATION  
 OCTOBER 1983 TO DECEMBER 1984  
 (Continued)

<u>Date</u>	<u>Time (AST)</u>	<u>Temp (°C)</u>	<u>Wind Speed (m/s)</u>	<u>Wind Dir (Deg)</u>	<u>Gust (m/s)</u>	<u>RH (%)</u>	<u>Precip (mm)</u>	<u>Solar Radiation (mw/cm²)</u>
12/11/84	0030					53		0
	0100	-16.3				53		
	0130	-16.4				53		
	0200	-16.4				53		
	0300					53		
	0400					57		
	0500	-16.5						
	0600						0	
	1030	-13.4					0	
	1300							
	2000					57	1	
	2130	-16.0						
	0000					55	0	
12/12/84	0100					56		
	0230					60		
	0630-0730							
	0700	-19.2					0	
	0900-1000							
	1100					62		
	1130					60		
	1330							
	1400	-17.0					2	
	1600	-17.5						
	1730-0000							
	1730					54		
	1830					56		
12/13/84	0600					41		
	1600					60		
12/14/84	1700					23		
	1930					24		
	2130	-12.8						
12/15/84	1600	-14.1				75		
	1700							
12/17/84	1030	-4.0				80		0

## NOTES:

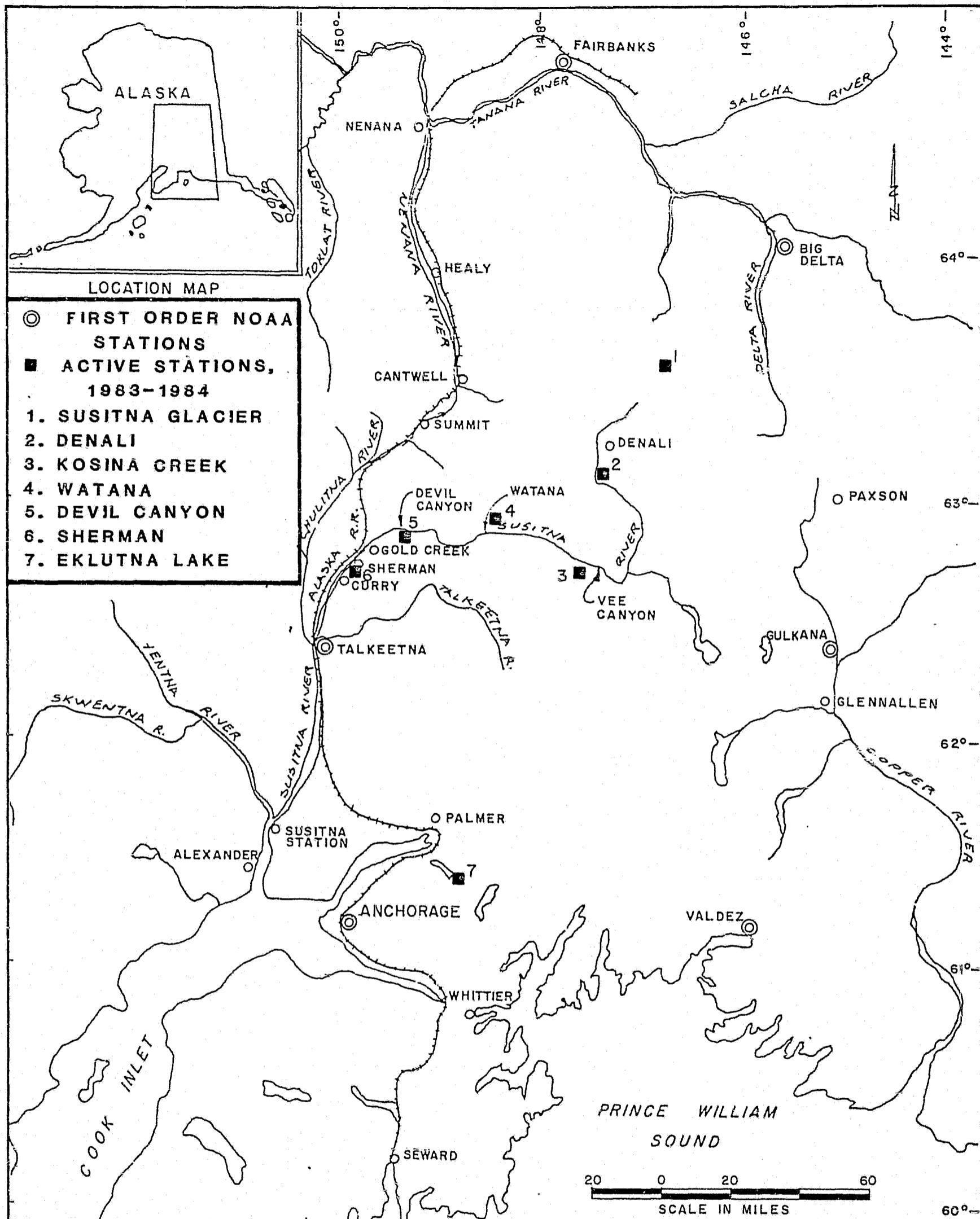
1. These data have been estimated where gaps exist in the record. Estimates were made by interpolating between valid data points preceding and following the missing data.
2. Precipitation values are the amounts estimated to have fallen in the preceding half-hour.

TABLE 1.6. ESTIMATES FOR MISSING DATA  
 GLACIER CLIMATE STATION  
 OCTOBER 1983 TO DECEMBER 1984  
 (Continued)

<u>Date</u>	<u>Time (AST)</u>	<u>Temp (°C)</u>	<u>Wind Speed (m/s)</u>	<u>Wind Dir (Deg)</u>	<u>Gust (m/s)</u>	<u>RH (%)</u>	<u>Precip (mm)</u>	<u>Solar Radiation (mw/cm²)</u>
12/20/84	0030					30		0
	0200	-15.0				26		
12/24/84	1100	-15.7						0
	1430	-15.1						
	1900	-15.0						
	1830							
12/29/84	0400					86		

## NOTES:

1. These data have been estimated where gaps exist in the record. Estimates were made by interpolating between valid data points preceding and following the missing data.
2. Precipitation values are the amounts estimated to have fallen in the preceding half-hour.



## LOCATION MAP: SUSITNA PROJECT METEOROLOGIC STATIONS

PREPARED BY:

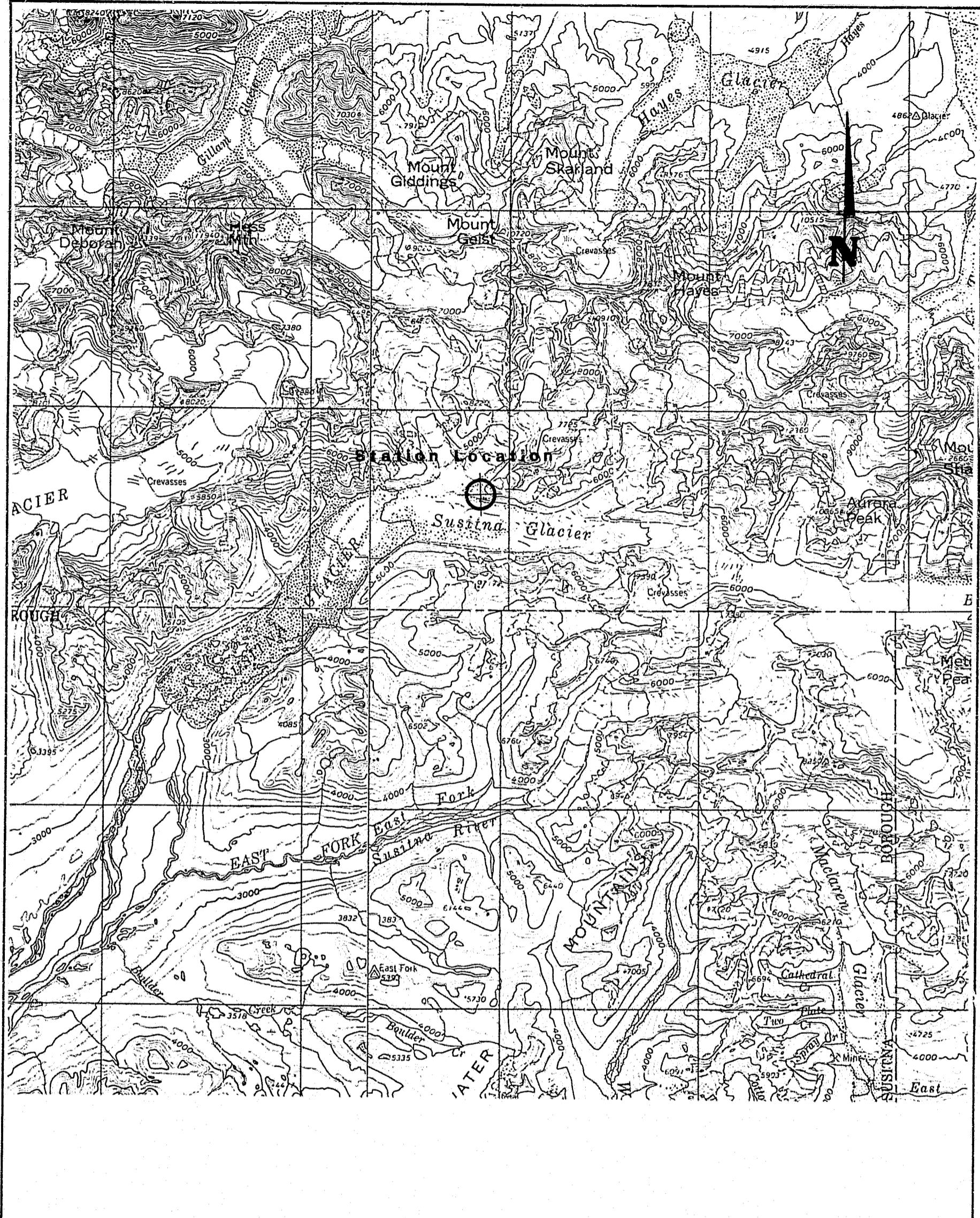


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ENGINEERS GEOLOGISTS HYDROLOGISTS SURVEYORS

FIGURE 1-1

PREPARED FOR:

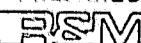
HARZA - EBASCO  
SUSITNA JOINT VENTURE



USGS MT. HAYES (1955) SCALE 1:250,000

Figure 1.2

PREPARED BY:



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PREPARED FOR:

HARZA-EBASCO

SUSITNA JOINT VENTURE

## GLACIER CLIMATE STATION

## 2.0 ANNUAL DATA SUMMARY

Table 2.1 presents a summary of the monthly averages or totals for each parameter for the full period covered by this report, October 1983 to December 1984. The symbols used in the table are explained in Section 3, Report Preparation. Conversion factors are provided in the appendix. The data reported herein are also summarized in Figure 2.1, a sequential plot of all the measured parameters. Annual summaries for prior years are provided in the previous data report (R&M Consultants, 1984).

With this report, a shift has been made from presenting the climatic data on a water year basis to presenting it for the calendar year. The calendar year format matches that used by the National Oceanic and Atmospheric Administration (NOAA) in reporting climatic data, and simplifies comparisons. Future reports will also be for calendar years.

A summary of the percentage of usable data recovered for each climatic parameter by month during this reporting period is presented in Table 2.2. The cumulative percentage in this case applies for the whole 15-month period.

TABLE 2.1. SUMMARY OF CLIMATE DATA RECORDED AT  
SUSITNA GLACIER STATION (NO. 0610)  
OCTOBER 1983 TO DECEMBER 1984

Month	Temperature			Wind										Total Solar Energy (WH/m <sup>2</sup> )
	Max (°C)	Min (°C)	Mean (°C)	Res Dir (°True)	Res Speed (m/sec)	Ave Speed (m/sec)	Max Gust Dir (°True)	Max Gust Speed (m/sec)	P' Val Dir (True)	Mean RH (%)	Mean DP (°C)	Precip (mm)		
October 1983	3.6	-15.3	-5.5	M	M	1.8M	M	19.0M	M	62	M	M	31,859	
November	5.5	-13.8	-5.3	083	2.2	2.5	118	19.7	ENE	46M	M	M	8,665	
December	4.5	-21.5	-8.1	070M	1.3M	0.8	099M	12.7	ENE(M)	48	M	M	1,525	
January 1984	1.2	-27.8	-10.4	087	1.6	2.2	118	19.7	ENE	61	M	M	3,650	
February	-1.6M	-26.7M	-11.2M	-85M	1.4M	2.0M	155M	18.4M	ENE(M)	60M	M	M	15,030M	
March	M	M	M	M	M	M	M	M	M	M	M	M	M	
April	M	M	M	M	M	M	M	M	M	M	M	M	M	
May	13.2M	-9.2M	2.9M	061M	0.9M	1.5M	027M	11.4M	ENE(M)	M	M	18.2M	187,763M	
June	15.3M	-0.4M	7.2M	089M	0.8M	1.9M	128M	13.3M	ENE(M)	M	M	105.4M	168,663	
July	M	M	M	M	M	M	M	M	M	M	M	M	M	
August	M	M	M	M	M	M	M	M	M	M	M	M	M	
September	M	M	M	M	M	M	M	M	M	M	M	M	M	
October	M	M	M	M	M	M	M	M	M	M	M	M	M	
November	-0.6M	-19.1M	-10.0M	070M	1.2M	1.6M	120M	26.0M	ENE(M)	63M	M	M	7,159M	
December	1.8M	-20.0M	-11.1M	072M	1.4M	1.9M	338M	17.8M	ENE(M)	68M	M	M	1,085M	
Annual-WY (10/83 - 9/84)	M	M	M	M	M	M	M	M	M	M	M	M	M	
Annual-CY (1/84-12/84)	M	M	M	M	M	M	M	M	M	M	M	M	M	

NOTE: See section on interpretation of data for explanation of symbols used. Annual values are for water year (WY) and calendar year (CY).

TABLE 2.2. PERCENT OF TOTAL POSSIBLE OBSERVATIONS RECORDED AT  
SUSITNA GLACIER CLIMATE STATION  
OCTOBER 1983 TO DECEMBER 1984

<u>Month</u>	<u>Temp</u>	<u>Wind Speed</u>	<u>Wind Direction</u>	<u>Peak Gust</u>	<u>RH</u>	<u>Precip</u>	<u>Solar Radiation</u>	<u>Dew Point</u>
October 1983	100	98	80	98	77	0	100	77
November	100	100	100	100	87	0	100	87
December	100	100	96	100	77	0	100	77
January 1984	100	100	100	100	87	0	100	87
February	91	91	85	91	72	0	91	72
March	0	0	0	0	0	0	0	0
April	0	0	0	0	0	0	0	0
May	89	89	86	89	42	89	89	42
June	85	85	85	85	39	85	85	39
July	0	0	0	0	0	0	0	0
August	0	0	0	0	0	0	0	0
September	27	27	27	27	22	27	27	22
October	23	23	22	23	19	0	23	19
November	94	92	87	89	68	0	94	68
December	95	95	85	93	81	0	100	80
Total	60	60	57	60	45	13	60	45

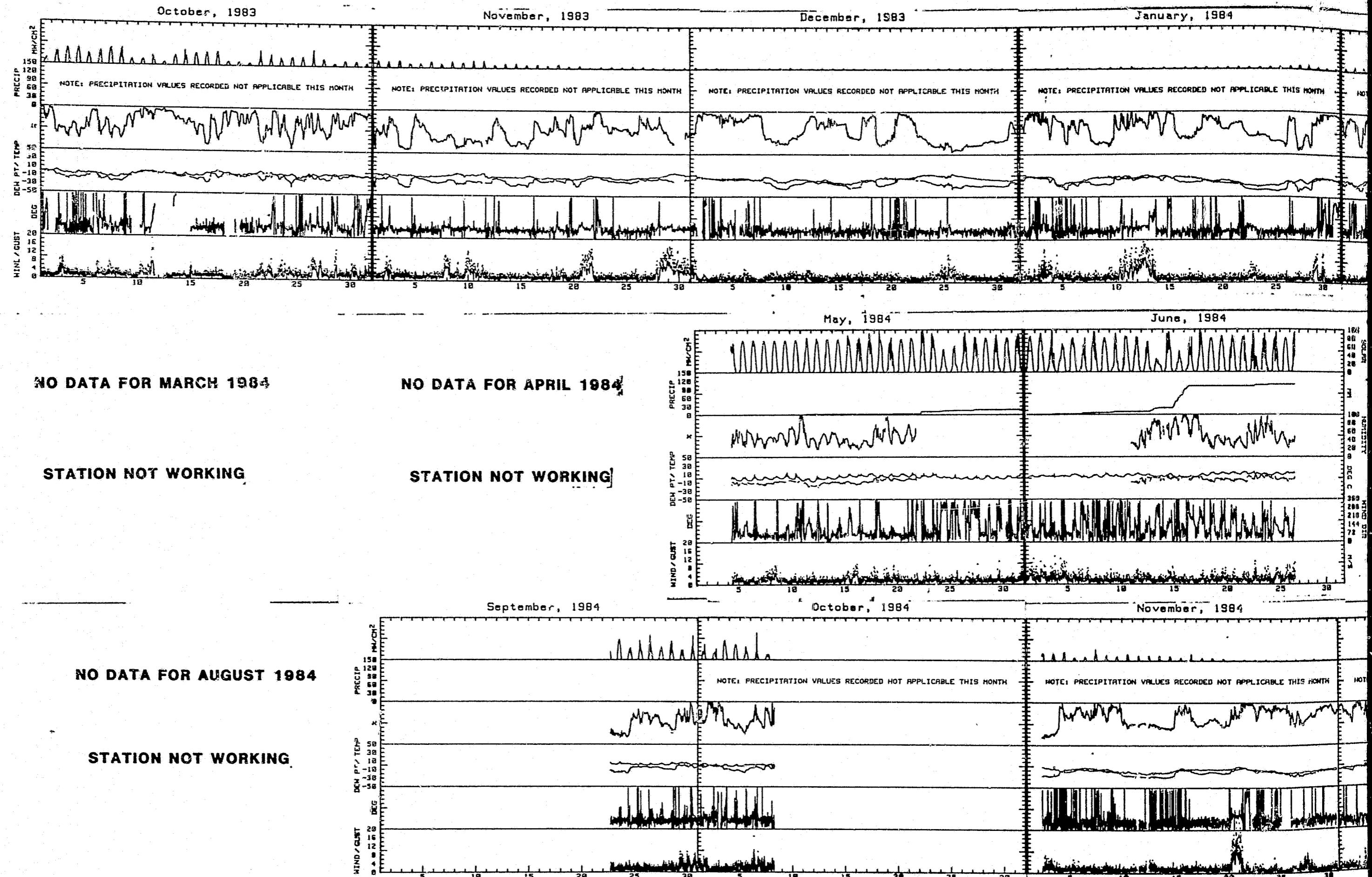
## NOTES:

1. RH and dewpoint data are not valid and have been discarded for samples when the wind speed is less than 1.0 m/s.
2. Precipitation data are recorded from April through September only. Collector is not designed for winter temperatures.
3. The percentage reported as TOTAL is for the full 15-month period (10/83-12/84).

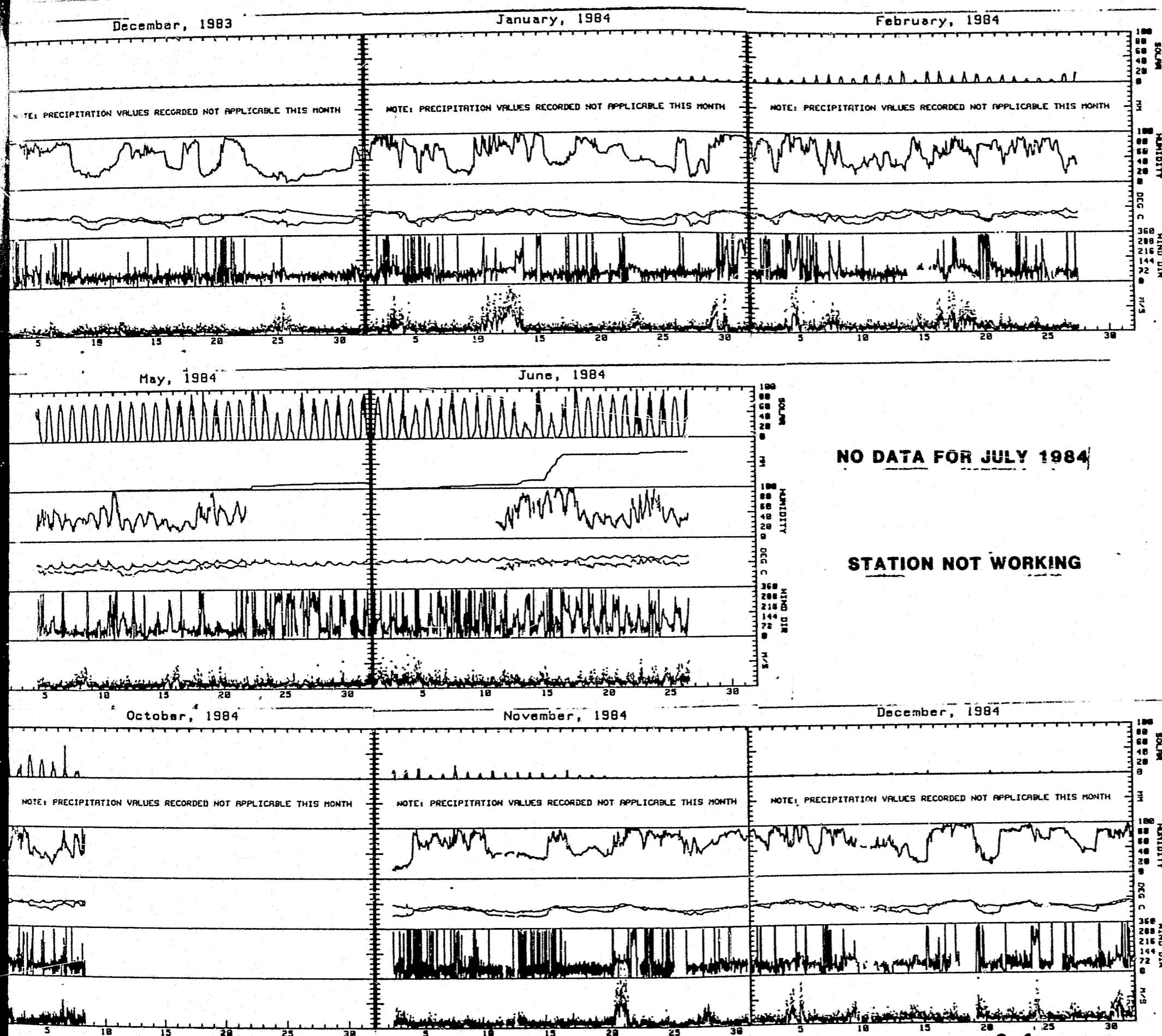
INSERT

FIGURE

2.1



Continued



NOTE: A larger copy of each plot is presented in Section 5, Climatic Data Summaries.

**FIGURE 2.1:  
SEQUENTIAL PLOT  
OF CLIMATIC DATA,  
SUSITNA GLACIER  
STATION,  
OCTOBER 1983-  
DECEMBER 1984**

Continued

0 0 2 7 6 7

### 3.0 REPORT PREPARATION

#### 3.1 Description of Symbols Used in Annual and Monthly Summaries

##### 3.1.1 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.

##### 3.1.2 Monthly Summaries

\*\*\*\* Erroneous or missing data (may be from 2 to 6 asterisks, depending on number of digits possible in the value). Asterisks appear 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.

### 3.2 Data-Computation Standards (Climate)

Conversion factors for units are presented in the appendix. Specific segments of the monthly reports are described below.

#### 3.2.1 Graphical Data Plot

The data plot is a graphical representation of valid recorded and/or computed data.

#### 3.2.2 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 are invalid, no value is reported for the current hour. No table is published for the winter months (October through March) unless a heater is part of the tipping bucket installation.

#### 3.2.3 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 monthly wind speeds are determined from 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). When the wind speed is less than 1 m/sec, the RH value is omitted from the averaging (but is displayed in the graphical data plot and in the three-hour table).
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 (in watt-hours per square meter) is determined by averaging the recorded solar intensity (which is in milliwatts per square centimeter) and converting the units. The monthly value is the sum of the daily values.

#### 3.2.4 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.

### **3.2.5 Wind Frequency Summary Table**

Reported data are determined from all valid pairs of readings. Valid pairs of wind data are composed of valid wind speed and wind direction data for the same interval.

### **3.2.6 Hourly Solar Radiation Table**

An addition to this year's report series, hourly solar radiation values are averages of all valid readings recorded during the preceding hour. If any data are missing or invalid, the remaining values are arithmetically averaged for the hour. The daily average values are determined by summing the hourly averages for the day and dividing by 24. If all data are missing for the hour, no value is printed; asterisks (\*\*\* appear instead, and no value is used for the hour in computing the daily average.

### **3.2.7 Wind Rose Graphical Plot**

The plot is a graphical representation of the wind frequency summary table.

### **3.2.8 Observation Summary Table**

Another addition to this year's report series is an observation summary. The number of usable observations for each parameter is determined by counting the number of valid readings for the entire month. The percentage of total observations is determined by dividing the number of usable observations by the number possible for the month. Data adjustments and additional comments applicable to the month are manually entered below the summary table.

### 3.2.9 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/cm<sup>2</sup>

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:  $\pm 1^\circ\text{C}$

Wind Speed:  $\pm 0.5$  meters per second

Wind Direction:  $\pm 1\%$  of full scale (i.e.,  $\pm 3.6$  degrees)

Relative Humidity:  $\pm 6\%$

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

## 4.0 INTERPRETATION OF DATA, 1983-84

### 4.1 General Comments

- 4.1.1 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 Section 3.2 "Data Computation Standards."
- 4.1.2 As described in Section 2.0, a shift is being made from presenting the climatic data on a water year basis to presenting it for the calendar year. Thus, this report includes fifteen months of data. All future reports will be for the calendar year.
- 4.1.3 Changes made to the format of this year's report series include addition of an hourly solar radiation table and tabulation of the actual number of usable observations on a monthly basis for each parameter. Also, the data-processing program was modified slightly to permit output of daily prevailing direction when the wind speed sensor was not operational, and output of speed-only parameters (peak gust and daily average speed) when the wind direction sensor was not operational.
- 4.1.4 The U.S. Department of Transportation ordered a shift in the time zones of central and Southeast Alaska in October 1983. The official time in central Alaska was advanced one hour, and the offical Southeast Alaska time was retarded one hour, making the two areas on the same time. This transition occurred when daylight savings time ended, on Sunday, October 30, 1983. The effect on the reporting of

the data is that one hour was "lost" between midnight and 0100 on October 30. There are thus no data at all for 0030 and 0100 on that date.

- 4.1.5 Missing data values have been estimated where possible. Estimation, which was accomplished by manually editing the raw computer data files, was generally limited to data gaps of an hour or less, where interpolation between the preceding and following valid data points could be used to estimate the missing points. Interpolation was performed in this manner for temperature, relative humidity, and solar radiation data.

Solar data have been estimated only for clear or uniformly cloudy days and then only if not near the peak value of the day. Solar data are also estimated at night where zero minimum values should occur. Precipitation is estimated only if none at all occurred during the interval or if the tips of the tipping-bucket were manually counted during a rainfall event. Wind speed and direction data have been estimated by interpolation only if the preceding and following winds were very uniform. Peak gust speeds have not been estimated at all.

- 4.1.6 Intermittent garbled data due to a Weather Wizard malfunction at the Glacier station caused several data gaps from mid-November 1984 through mid-December. It was possible to estimate temperature, relative humidity, and solar radiation values where the gaps were not more than two or three hours. However, approximately two to three days of data were lost from the record during this period.
- 4.1.7 The recording interval was changed prior to the winter of 1983-84 to permit recording of data for longer periods of

time in the event monthly maintenance trips to the station were delayed. The interval was changed from 15 minutes to 30 minutes, which increased the maximum record length per data tape from approximately six weeks to approximately three months. The switch was made in November 1983 at all Susitna Basin stations and in December 1983 at the Eklutna Lake Station.

4.1.8 The Weather Wizard stopped functioning on February 27 at the Glacier Station. The propane heater probably didn't supply sufficient heat to keep the unit operating. The Weather Wizard was removed on April 9 for maintenance, and then replaced on May 4. Following re-installation, data were recorded until June 26 when the unit again ceased to function. The station was inspected on July 16. However, no data were recorded following the inspection. The unit was removed from the site on August 27 and sent back to Belfort for repairs. The Weather Wizard was re-installed on September 22, after which data were recorded consistently. A total of 154 days of data for all parameters were lost during the periods from 2/27 to 5/4 and 6/26 to 9/22, as indicated on Table 1.4.

4.1.9 Normal station maintenance procedure is to switch the recording interval from 30 minutes to 5 minutes for ease and expediency of inspection. This was done at the Glacier station on September 22 when the Weather Wizard was re-installed. However, the interval was not changed back to 30 minutes upon completion of the station inspection. Since the data tapes are designed to have a duration of approximately 15 days for 5 minute data, the tape ran out on October 8, after which no data were recorded. The cassette tape was replaced and the recording interval was switched to 15 minutes on November 2, 1984.

Approximately 25 days of data were lost from the record during this period.

#### 4.2 Comments on Specific Parameters

##### 4.2.1 Precipitation

Precipitation data are generally 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 timing within the day may not be accurate but daily totals should be reasonable. The user should exercise caution and make note of the concurrent temperatures in interpreting the precipitation records.

##### 4.2.2 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. Theoretically, the maximum value and RH reading can attain is 99%. However, when the sensor is not calibrated correctly readings may exceed 100%, or they may be noticeably too low. Adjustments are therefore made accordingly, as noted in Table 1.5.

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.

The oscillator for the Glacier relative humidity sensor was bad during May and June 1984. Data were recorded for 17 days from mid-May to mid-June, but have all been deleted due to the unreliable oscillator. Data from the beginning of May and the end of June are somewhat erratic as well, but generally follow the diurnal cycle indicative of the summer RH. The station was not functioning from June 26 to September 22. The RH oscillator was replaced on 9/22 when the Weather Wizard was re-installed. RH data are reliable after this date.

#### 4.2.3 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 hourly solar radiation summary table to get a feel for the frequency and timing of lost solar radiation data. Caution should be used when a significant amount of data are 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  $\pm 5 \text{ mW/cm}^2$ , they often record a reading of 0 (during night) as 1 or even  $2 \text{ mW/cm}^2$ . This also can bias the daily or monthly totals, making the computed energy much higher than the true solar energy. An error of  $+1 \text{ mW/cm}^2$  on every reading will cause the computed daily total energy to be high by 240 watt-hr/cm<sup>2</sup>. Readings during periods when this sensor offset was demonstrated have been adjusted downward, as noted in Table 1.5.

#### 4.2.4 Wind Speed and Direction

Occasional measurements of wind speed, wind direction, and peak wind gusts were lost between October 1983 and February 1984 and again from October to December 1984 due to intermittent freezing of the wind vane or anemometer. One or both of the sensors typically freezes and seizes up when the temperature drops after a rainstorm or freezing rain event and then stays stuck until the temperature rises above 0°C or until a wind event occurs that is sufficiently strong to free it.

When the Glacier Weather Wizard was replaced on September 22, 1984, the wind vane tail was not attached, causing all

wind direction data to be off by  $180^\circ$ . A new wind vane tail was attached on November 2. Therefore, all wind direction data from September 22 to October 8 when the data tape ran out (see Section 4.1.9) have been adjusted downward  $180^\circ$ , as indicated in Table 1.5.

5.0 MONTHLY CLIMATIC DATA SUMMARIES  
SUSITNA GLACIER STATION  
OCTOBER 1983 - DECEMBER 1984

Note:

Each month's climatic data summary report consists of the following 11 pages:

- (1) Hourly Precipitation Summary Table (or note page)
- (2) Three-Hour Summary Table (Days 1-9)
- (3) Three-Hour Summary Table (Days 10-18)
- (4) Three-Hour Summary Table (Days 19-27)
- (5) Three-Hour Summary Table (Days 28-31)
- (6) Monthly Summary Table
- (7) Monthly Graphical Plot
- (8) Wind Frequency Summary Table
- (9) Wind Rose Plot
- (10) Hourly Solar Radiation Summary Table
- (11) Observation Summary and Note Page

No precipitation data for October

(See INTERPRETATION OF DATA).

## R &amp; M CONSULTANTS, INC.

## GLACIER MOUNTAIN HYDRO CONSULTANT INC PROGRESSIVE

THREE HOUR SUMMARY FOR GLACIER WEATHER STATION  
DATA TAKEN DURING October, 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 C	DEG C	%	DEG C	DEG C	DIR.	SPD.	M/S	MW

0300	-1.1	****	97	273	1.0	230	3.8	0	0300	-1.9	****	94	***	***	***	1.9	0	0300	-4.7	-13.8	49	084	4.5	092	10.2	0
0600	-1.5	****	98	308	.6	279	2.5	0	0600	-1.2	****	80	***	***	***	1.9	0	0600	-6.6	-15.3	50	072	2.5	078	7.6	0
0900	-6	-3.1	83	115	.7	124	4.4	6	0900	1.1	-7.9	51	***	***	***	1.9	16	0900	-4.4	-17.3	36	062	1.8	069	5.1	24
1200	.9	****	69	213	.9	223	3.8	11	1200	1.1	****	42	073	.9	016	2.5	21	1200	-5.6	-18.4	36	032	1.6	006	3.8	37
1500	.3	****	71	265	.5	282	1.9	9	1500	.2	-10.7	44	056	1.2	058	5.1	10	1500	-5.8	-17.7	39	034	2.7	036	4.4	18
1800	-2.0	****	84	120	.7	116	3.2	0	1800	-2.1	-9.9	55	023	.6	205	5.1	0	1800	-6.1	****	49	033	1.5	015	3.8	0
2100	-2.2	-2.5	98	***	***	***	3.2	0	2100	-4.1	-13.3	49	099	3.5	092	8.9	0	2100	-6.0	-15.3	48	050	1.3	021	3.2	0
2400	-2.1	****	95	***	***	***	3.2	0	2400	-4.2	-13.6	48	082	4.0	073	10.8	0	2400	-8.5	-14.7	61	023	1.5	011	3.8	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 C	DEG C	%	DEG C	DEG C	DIR.	SPD.	M/S	MW

0300	-8.4	-14.4	62	041	1.2	025	3.2	0	0300	-5.3	****	48	047	1.1	037	3.8	0	0300	-5.1	-6.5	90	***	***	***	2.5	0
0600	-8.1	-14.7	59	037	1.2	073	3.8	0	0600	-6.6	****	73	011	.7	042	3.2	0	0600	-5.9	-7.6	88	202	1.3	164	7.0	0
0900	-6.7	-17.0	44	020	2.0	028	4.4	24	0900	-4.7	-11.1	61	079	.9	068	3.2	15	0900	-7.0	-12.8	63	086	2.7	097	7.6	10
1200	-3.7	-17.4	34	037	1.9	022	5.7	38	1200	-4.0	-12.4	52	081	1.5	079	4.4	22	1200	-6.8	-15.3	51	249	.1	002	7.0	27
1500	-2.7	****	30	073	.5	112	2.5	16	1500	-4.6	****	71	089	1.4	129	5.1	7	1500	-6.7	-20.4	33	162	1.9	174	5.1	14
1800	-5.3	-14.7	48	063	.9	051	3.2	0	1800	-4.3	-5.7	90	046	.8	025	2.5	0	1800	-8.8	-18.9	44	126	1.7	152	4.4	0
2100	-4.4	****	46	067	1.0	024	3.2	0	2100	-4.9	****	92	029	.4	015	1.9	0	2100	-10.4	****	53	149	.6	134	3.2	0
2400	-5.5	****	47	040	1.0	042	3.2	0	2400	-5.0	****	91	347	1.0	344	1.9	0	2400	-10.8	-18.1	55	049	.7	058	3.8	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 C	DEG C	%	DEG C	DEG C	DIR.	SPD.	M/S	MW

0300	-11.7	-15.5	73	099	1.3	106	3.2	0	0300	-14.3	-22.7	49	047	2.5	037	5.1	0	0300	-10.2	-13.1	79	095	1.1	140	3.2	0
0600	-12.9	-17.2	70	061	1.2	076	3.2	0	0600	-13.5	-22.0	49	063	2.0	073	4.4	0	0600	-8.5	****	84	135	1.3	135	2.5	0
0900	-12.0	-21.1	47	068	2.7	082	5.7	25	0900	-10.8	-23.7	34	063	1.5	037	4.4	21	0900	-7.7	-11.0	77	087	1.1	075	3.8	10
1200	-9.5	-22.9	33	116	2.6	119	8.3	34	1200	-10.5	-24.8	30	137	1.1	089	3.2	38	1200	-3.8	****	58	065	.7	068	3.2	10
1500	-10.4	-24.4	31	109	1.4	162	5.7	15	1500	-9.5	****	34	117	1.0	135	2.5	14	1500	-5.7	****	68	***	***	***	1.9	2
1800	-13.6	-21.8	50	055	1.6	052	4.4	0	1800	-7.7	-18.8	41	069	1.1	063	3.2	0	1800	-6.0	****	85	***	***	***	1.9	0
2100	-14.3	-21.2	56	042	2.4	042	5.1	0	2100	-10.1	-17.9	53	299	.5	339	3.8	0	2100	-5.1	-6.9	87	***	***	***	2.5	0
2400	-14.3	-22.0	52	088	1.8	100	4.4	0	2400	-10.1	-15.6	64	005	.3	005	3.2	0	2400	-3.5	****	89	***	***	***	2.5	0

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

## R &amp; M CONSULTANTS, INC.

## SUSITNA HYDRO ELECTRIC PROJECT

THREE HOUR SUMMARY FOR GLACIER WEATHER STATION  
DATA TAKEN DURING October, 1983

DAY 10

DAY 11

DAY 12

HOUR	DEW	WIND	WIND GUST MAX.	POINT	NDNG TEMP.	RH	DIR.	SPD.	DIR.	GUST	RAD	POINT	NDNG TEMP.	RH	DIR.	SPD.	DIR.	GUST	RAD							
	DEG C	DEG C	% DEG.	M/S	MW		DEG C	DEG C	% DEG.	M/S	MW		DEG C	MW		DEG C	DEG C	% DEG.	M/S	MW						
0300	-2.3	-4.0	88	***	***	***	2.5	0	0300	0.0	-1.5	90	066	2.8	073	7.0	0	0300	-3.7	-4.7	93	***	***	***	***	0
0600	-1.5	-2.8	91	***	***	***	4.4	0	0600	.7	-1.4	86	047	1.7	068	5.1	0	0600	-4.1	-5.2	92	***	***	***	***	0
0900	.4	-3.7	74	070	3.2	072	7.6	9	0900	.6	-1.6	85	095	5.0	107	12.7	3	0900	-3.2	-3.9	95	***	***	***	***	5
1200	.8	-3.1	75	080	3.3	080	7.0	14	1200	-2	-4.4	73	149	6.2	124	19.0	14	1200	-3.1	****	97	***	***	***	1.9	7
1500	-.5	-1.1	96	338	1.6	091	5.1	3	1500	-.9	****	82	202	1.8	170	14.0	3	1500	-3.3	-4.9	89	***	***	***	2.5	2
1800	.4	-.6	93	001	1.5	040	4.4	0	1800	-1.6	-2.2	96	263	1.6	263	3.8	0	1800	-4.3	****	92	***	***	***	1.9	0
2100	.5	-.5	93	055	1.7	070	4.4	0	2100	-2.2	-2.9	95	***	***	***	***	0	2100	-4.6	****	91	***	***	***	2.5	0
2400	.9	-2.0	81	054	1.8	058	5.7	0	2400	-3.6	-4.6	93	***	***	***	***	0	2400	-4.7	-5.8	92	***	***	***	1.9	0

DAY 13

DAY 14

DAY 15

HOUR	DEW	WIND	WIND GUST MAX.	POINT	NDNG TEMP.	RH	DIR.	SPD.	DIR.	GUST	RAD	POINT	NDNG TEMP.	RH	DIR.	SPD.	DIR.	GUST	RAD							
	DEG C	DEG C	% DEG.	M/S	MW		DEG C	DEG C	% DEG.	M/S	MW		DEG C	MW		DEG C	DEG C	% DEG.	M/S	MW						
0300	-5.6	****	90	***	***	***	1.9	0	0300	-8.8	-12.9	72	***	***	***	3.2	0	0300	-9.0	-14.5	64	047	3.0	035	7.6	0
0600	-5.8	****	91	***	***	***	1.3	0	0600	-8.1	-11.9	74	***	***	***	1.9	0	0600	-10.6	-15.5	67	072	1.6	070	3.8	0
0900	-4.7	-7.0	84	***	***	***	2.5	11	0900	-6.6	-11.9	66	***	***	***	3.2	12	0900	-8.6	-17.0	51	071	1.2	063	3.2	21
1200	-3.8	-6.7	80	301	1.1	247	3.8	23	1200	-3.0	-9.0	83	***	***	***	3.2	16	1200	-7.5	-17.7	44	056	1.9	051	3.8	27
1500	-4.6	****	74	339	1.2	332	2.5	12	1500	-5.2	****	63	***	***	***	1.9	5	1500	-7.4	-20.0	36	090	1.2	067	3.2	9
1800	-8.1	-11.1	79	***	***	***	2.5	0	1800	-7.6	****	71	***	***	***	1.3	0	1800	-8.6	-15.6	57	066	1.5	042	3.2	0
2100	-9.0	-12.3	77	***	***	***	2.5	0	2100	-8.1	****	73	***	***	***	1.9	0	2100	-8.3	-14.7	60	071	1.3	096	3.8	0
2400	-8.6	-12.5	73	***	***	***	3.2	0	2400	-9.2	-14.4	66	***	***	***	5.1	0	2400	-9.4	-15.0	59	070	1.2	058	2.5	0

DAY 16

DAY 17

DAY 18

HOUR	DEW	WIND	WIND GUST MAX.	POINT	NDNG TEMP.	RH	DIR.	SPD.	DIR.	GUST	RAD	POINT	NDNG TEMP.	RH	DIR.	SPD.	DIR.	GUST	RAD							
	DEG C	DEG C	% DEG.	M/S	MW		DEG C	DEG C	% DEG.	M/S	MW		DEG C	MW		DEG C	DEG C	% DEG.	M/S	MW						
0300	-8.3	-14.7	60	072	1.3	084	2.5	0	0300	-.7	-5.3	71	076	1.4	023	3.8	0	0300	-2.3	****	87	058	.5	002	3.8	0
0600	-6.7	-19.8	35	082	1.4	118	3.2	0	0600	-.8	-5.2	72	078	1.2	053	3.8	0	0600	-3.3	****	91	017	.7	017	1.3	0
0900	-3.3	-24.9	17	076	1.8	087	3.8	20	0900	1.4	-8.5	48	069	1.5	091	5.1	12	0900	-2.8	****	75	***	***	***	1.3	6
1200	-2.2	-25.4	15	075	1.3	040	3.8	30	1200	2.4	-13.2	31	071	1.9	071	5.1	26	1200	-1.8	****	61	***	***	***	2.5	9
1500	-3.2	****	15	070	1.3	041	3.8	5	1500	.1	-14.1	34	098	1.4	103	3.2	4	1500	-3.0	-6.3	78	***	***	***	1.9	2
1800	-2.4	-18.6	28	055	1.4	020	5.1	0	1800	.3	-12.2	39	069	2.1	074	4.4	0	1800	-4.6	****	92	***	***	***	1.3	0
2100	-2.8	-5.1	84	073	1.4	088	4.4	0	2100	.1	-11.7	41	079	1.3	058	3.8	0	2100	-5.8	-6.9	92	***	***	***	2.5	0
2400	-.9	-5.1	73	062	1.3	032	3.2	0	2400	-1.6	-5.6	74	062	1.7	043	4.4	6	2400	-6.2	****	91	***	***	***	2.5	0

## R &amp; M CONSULTANTS, INC.

## SUSITNA HYDRO ELECTRIC PROJECT

THREE HOUR SUMMARY FOR GLACIER WEATHER STATION  
DATA TAKEN DURING October, 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	-6.8	*****	90	***	****	***	2.5	0	0300	-5.2	-11.3	62	092	1.6	093	3.8	0	0300	-3.6	*****	88	***	****	***	2.5	0
0600	-6.7	-8.1	90	075	1.1	141	3.8	0	0600	-7.5	*****	85	059	.9	017	3.2	0	0600	-2.7	-6.0	78	080	1.3	053	4.4	0
0900	-8.2	-11.0	80	***	****	***	3.2	4	0900	-5.0	*****	75	046	.9	062	2.5	3	0900	-6	-11.4	44	074	2.1	069	4.4	7
1200	-5.2	*****	58	***	****	***	2.5	9	1200	-4.2	-8.8	70	044	1.1	119	2.5	6	1200	1.6	-15.8	26	096	2.0	088	5.1	34
1500	-6.6	-11.5	68	086	2.3	086	4.4	2	1500	-4.5	-7.7	78	067	.5	092	3.2	1	1500	.4	-19.4	21	084	3.1	087	7.0	7
1800	-9.0	*****	85	080	1.3	063	4.4	0	1800	-4.4	*****	89	040	1.0	028	3.2	0	1800	-7	-20.9	20	081	3.0	101	7.6	0
2100	-7.6	-10.0	83	096	.9	077	3.2	0	2100	-4.0	-5.4	90	045	.8	029	3.2	0	2100	-2.8	-19.3	27	044	2.0	028	6.3	0
2400	-5.6	-11.3	64	077	1.7	059	5.1	0	2400	-3.9	*****	94	031	1.3	030	3.8	0	2400	-2.7	-16.9	33	074	1.7	087	3.8	0

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	-2.8	-9.3	61	073	1.8	097	3.8	0	0300	-5.8	*****	84	061	1.1	021	2.5	0	0300	-7.4	-20.4	35	069	2.4	083	4.4	0
0600	-1.3	-11.0	48	084	2.8	075	5.7	0	0600	-6.2	-14.2	53	080	2.0	112	5.1	0	0600	-7.5	-22.2	30	075	2.8	083	5.7	0
0900	-1.4	-10.0	52	090	3.7	106	7.0	6	0900	-4.1	-17.1	36	079	2.5	065	5.1	9	0900	-5.9	-27.0	17	063	3.4	072	7.0	9
1200	-1.0	-10.2	50	084	3.2	098	6.3	21	1200	-4.6	-11.6	58	094	3.1	127	7.0	11	1200	-3.4	-25.6	16	083	2.1	076	5.7	20
1500	-3.9	-9.1	67	113	2.8	096	9.5	3	1500	-5.8	-11.7	63	100	3.4	097	8.9	2	1500	-7.2	-19.9	36	033	1.8	084	5.1	3
1800	-5.3	*****	92	249	.9	249	3.2	0	1800	-6.8	-8.9	85	034	1.2	000	3.8	0	1800	-9.3	-17.2	49	031	1.8	022	5.7	0
2100	-5.4	*****	94	346	.1	012	2.5	0	2100	-6.2	-15.2	49	071	3.0	076	7.6	0	2100	-10.7	-15.4	68	020	2.3	004	5.1	0
2400	-5.6	*****	91	047	.7	152	2.5	0	2400	-8.2	-17.6	47	065	2.5	076	5.1	0	2400	-14.3	-16.6	83	022	1.7	002	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														
0300	-11.6	-17.4	62	056	1.4	014	3.8	0	0300	-2.2	-9.8	56	088	1.8	098	7.0	0	0300	-8.9	-16.5	54	089	4.3	085	8.3	0
0600	-13.1	-17.9	67	025	1.4	350	4.4	0	0600	-8.2	-9.9	88	163	1.2	190	5.1	0	0600	-7.7	-16.9	48	086	5.9	090	8.9	0
0900	-13.5	-18.7	65	012	1.7	000	5.7	8	0900	-6.5	-9.2	91	083	1.0	100	7.0	3	0900	-6.8	-14.8	53	060	2.0	071	6.3	7
1200	-10.7	*****	45	359	1.0	354	2.5	20	1200	-3.5	-15.0	41	093	5.2	084	9.5	37	1200	-5.6	-15.2	47	071	2.4	062	6.3	11
1500	-11.1	-22.2	40	060	.6	112	2.5	5	1500	-5.3	-15.5	45	092	5.5	084	10.2	5	1500	-5.0	-16.6	40	051	2.1	045	5.1	2
1800	-7.4	-15.4	53	039	1.3	007	3.8	0	1800	-6.4	-14.7	52	086	4.7	071	8.9	0	1800	-3.9	-19.9	28	054	2.3	052	5.1	0
2100	-7.9	-10.1	84	113	.9	126	3.2	0	2100	-8.1	-9.5	90	104	3.1	091	6.3	0	2100	-4.9	-18.8	33	033	2.1	023	5.1	0
2400	-5.0	-7.0	86	093	1.1	116	2.5	0	2400	-8.5	-12.3	74	173	.8	139	4.4	0	2400	-6.4	-17.9	40	090	1.4	130	4.4	0

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

## R &amp; M CONSULTANTS, INC.

## SUSITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR GLACIER WEATHER STATION  
DATA TAKEN DURING October, 1983

DAY 28

DAY 29

DAY 30

HOUR	DEW	WIND	WIND GUST MAX.	POINT	NDNG TEMP.	RH	DIR.	SPD.	DIR.	GUST	RAD	POINT	NDNG TEMP.	RH	DIR.	SPD.	DIR.	GUST	RAD	POINT	NDNG TEMP.	RH	DIR.	SPD.	DIR.	GUST	RAD		
	DEG C	DEG C	% DEG.	M/S	MW		DEG C	DEG C	% DEG.	M/S	MW		DEG C	DEG C	% DEG.	M/S	MW		DEG C	DEG C	% DEG.	M/S	MW		DEG C	DEG C	% DEG.	M/S	MW
0300	-6.7	****	39	058	1.2	060	5.1	0	0300	-5.8	-13.9	53	071	2.2	080	4.4	0	0300	-3.2	-8.4	67	060	1.9	082	7.6	0			
0600	-7.7	-12.9	66	041	1.8	068	6.3	0	0600	-5.5	-11.4	63	077	1.9	095	5.1	0	0600	-4.2	-8.5	72	104	4.2	102	10.2	0			
0900	-4.6	-6.6	86	016	1.1	065	4.4	3	0900	-4.8	-10.2	66	047	1.8	041	3.8	5	0900	-6.9	-7.9	93	068	2.3	009	8.9	1			
1200	-3.9	****	74	224	.6	233	3.8	5	1200	-4.5	-10.5	63	070	1.6	063	3.8	11	1200	-7.0	-8.4	90	262	2.5	253	7.0	11			
1500	-4.6	-8.3	75	101	3.6	099	10.8	1	1500	-4.6	-10.4	64	057	1.7	068	3.8	2	1500	-7.8	-9.3	89	252	3.0	254	5.7	5			
1800	-6.8	****	89	137	3.7	193	14.0	0	1800	-4.2	****	59	045	2.0	047	5.1	0	1800	-8.4	****	89	341	.8	278	3.2	0			
2100	-6.7	-10.7	73	078	.7	102	3.2	0	2100	-4.9	-8.5	76	052	2.0	031	3.8	0	2100	-8.3	-9.5	91	059	.3	118	3.2	0			
2400	-6.9	-14.2	56	072	2.0	052	5.1	0	2400	-4.5	-6.7	85	044	1.4	071	4.4	0	2400	-9.2	-11.1	86	220	2.4	214	5.7	0			

DAY 31

NDNG TEMP.

HOUR	DEW	WIND	WIND GUST MAX.	POINT	NDNG TEMP.	RH	DIR.	SPD.	DIR.	GUST	RAD																	
	DEG C	DEG C	% DEG.	M/S	MW		DEG C	DEG C	% DEG.	M/S	MW																	
0300	-10.5	-12.3	87	027	.5	273	3.8	0																				
0600	-8.7	-11.1	83	071	1.4	073	3.8	0																				
0900	-8.4	-10.8	83	032	1.2	084	4.4	0																				
1200	-8.1	****	84	141	3.3	131	12.1	3																				
1500	-6.8	-9.1	84	172	1.0	133	10.2	2																				
1800	-9.2	-11.0	87	240	2.9	229	12.7	0																				
2100	-10.9	-12.8	86	281	2.7	256	6.3	0																				
2400	-12.8	-15.1	83	329	.9	265	5.7	0																				

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

## R &amp; M CONSULTANTS, INC.

## SUSITNA HYDROELECTRIC PROJECT

MONTHLY SUMMARY FOR GLACIER WEATHER STATION  
DATA TAKEN DURING October, 1983

DAY	MAX. TEMP., DEG C	MIN. TEMP., DEG C	MEAN TEMP., DEG C	RES.	RES.	Avg.	Max.	Max.	P'VAL	Mean	Mean	Day's
				WIND DIR.	WIND SPD. M/S	WIND DIR. M/S	GUST DIR. M/S	DIR. RH	DP DEG C	Precip mm	Solar Energy WH/SQM	
1	1.6	-2.3	-4	243	.3	1.1	124	4.4	NNW	88	-3.1	****
2	2.6	-4.7	-1.1	081	1.9	1.9	073	10.8	ENE	56	-9.4	****
3	-3.7	-8.5	-6.1	055	2.0	2.3	092	10.2	NE	45	-15.9	****
4	-1.1	-8.7	-4.9	042	1.2	1.4	022	5.7	NNE	49	-15.2	****
5	-3.2	-6.8	-5.0	056	.8	1.1	129	5.1	NE	63	-11.2	****
6	-4.8	-10.8	-7.8	126	.9	1.7	097	7.6	SE	57	-15.5	****
7	-8.7	-14.7	-11.7	079	1.7	2.1	119	8.3	E	52	-20.4	****
8	-7.7	-14.7	-11.2	065	1.0	1.5	037	5.1	ENE	44	-21.6	****
9	-3.0	-11.1	-7.1	095	1.0	.9	075	3.8	ENE	79	-11.1	****
10	.9	-3.1	-1.1	051	1.8	2.0	072	7.6	ENE	88	-2.2	****
11	1.6	-3.6	-1.0	115	2.3	3.8	124	19.0	ENE	87	-2.6	****
12	.9	-4.9	-2.9	***	***	.6	***	2.5	***	93	-4.6	****
13	-2.8	-9.0	-5.9	323	1.1	1.0	247	3.8	NNW	79	-9.8	****
14	-2.3	-9.4	-5.9	***	***	1.2	***	5.1	***	69	-12.2	****
15	-6.5	-10.9	-8.7	065	1.6	1.7	035	7.6	ENE	57	-16.1	****
16	-3	-9.0	-4.7	071	1.4	1.6	020	5.1	ENE	40	-17.8	****
17	3.6	-1.6	1.0	074	1.5	1.7	091	5.1	ENE	50	-9.6	****
18	-1.3	-6.2	-3.8	051	.5	.6	002	3.8	NE	82	-6.7	****
19	-5.0	-10.5	-7.8	082	1.3	1.2	059	5.1	E	82	-10.4	****
20	-3.3	-8.4	-5.9	055	.9	1.2	093	3.8	NNE	77	-8.6	****
21	2.4	-5.3	-1.5	077	2.1	2.1	101	7.6	E	41	-14.4	****
22	-2	-5.9	-3.1	089	1.7	2.3	096	9.5	E	61	-9.6	****
23	-3.8	-8.2	-6.0	079	2.3	2.5	097	8.9	ENE	61	-12.7	****
24	-3.4	-14.3	-8.9	053	2.1	2.4	072	7.0	ENE	39	-20.9	****
25	-5.0	-15.3	-10.2	044	1.0	1.4	000	5.7	N	66	-16.6	****
26	-2.2	-9.2	-5.7	097	2.7	3.2	084	10.2	E	66	-11.8	****
27	-3.9	-9.0	-6.5	071	2.7	3.0	090	8.9	E	45	-16.8	****
28	-3.9	-7.7	-5.8	091	1.3	2.2	193	14.0	ENE	70	-10.7	****
29	-3.9	-7.0	-5.5	058	1.8	1.9	095	5.1	ENE	65	-10.8	****
30	-3.1	-9.2	-6.2	166	.2	2.5	102	10.2	ESE	85	-8.7	****
31	-6.7	-12.8	-9.8	214	.3	2.3	229	12.7	W	53	-11.2	****
MONTH	3.6	-15.3	-5.5	072	1.3	1.8	124	19.0	ENE	62	-11.9	****
												31859

GUST VEL. AT MAX. GUST MINUS 2 INTERVALS 11.4

GUST VEL. AT MAX. GUST MINUS 1 INTERVAL 13.3

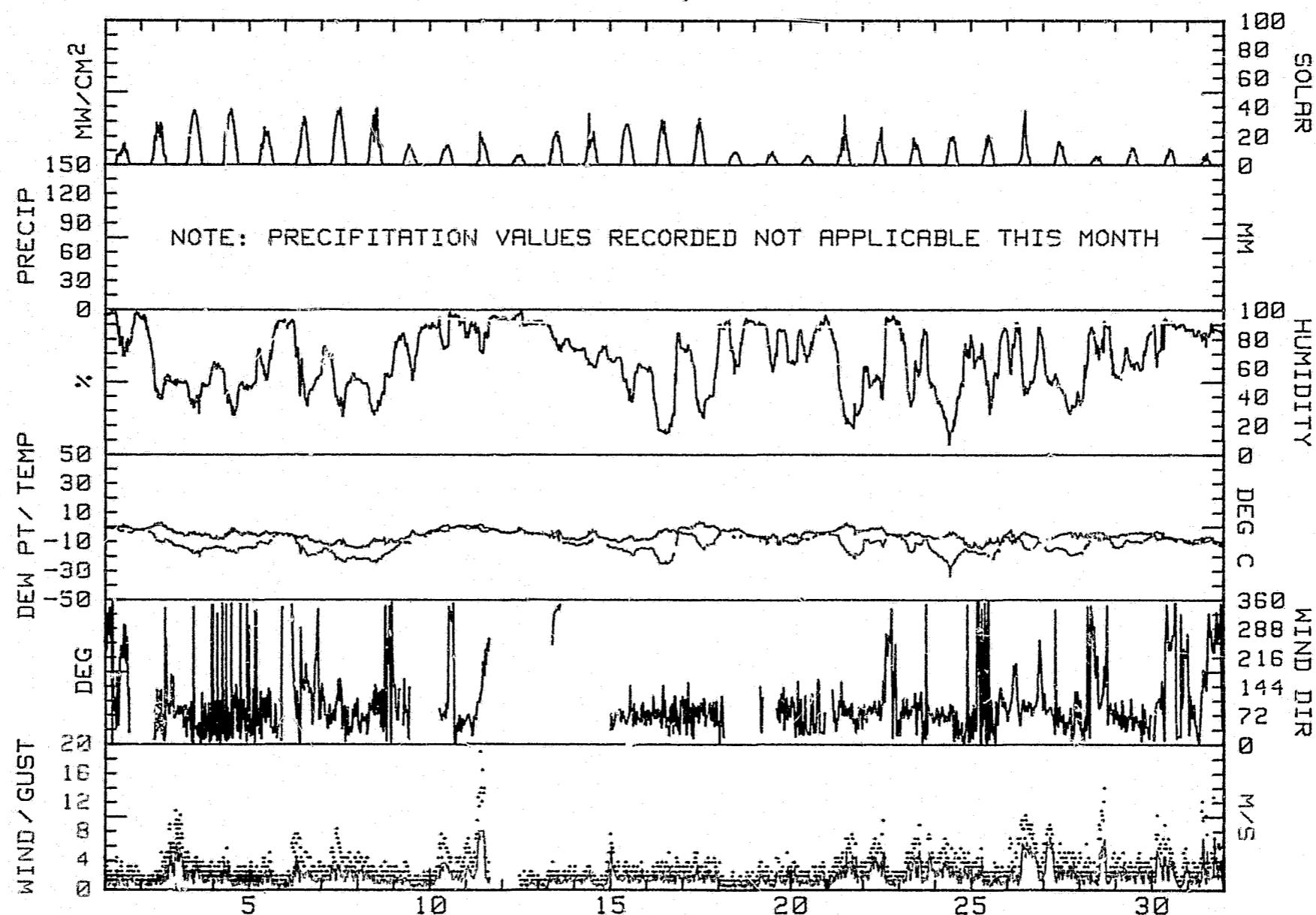
GUST VEL. AT MAX. GUST PLUS 1 INTERVAL 14.0

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.

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

R&M CONSULTANTS, INC.  
SUSITNA HYDROELECTRIC PROJECT  
GLACIER WEATHER STATION  
October, 1983



## R &amp; M CONSULTANTS, INC.

## GLASSITON HYDROELECTRIC PROJECT

WIND FREQUENCY SUMMARY FOR GLACIER WEATHER STATION  
DATA TAKEN DURING October, 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	
	1.0	3.0	6.0	10.0	15.0	20.0		
N	1.19	3.78	.30	0.00	0.00	0.00	0.00	5.27
NNE	2.15	8.83	.96	0.00	0.00	0.00	0.00	11.94
NE	1.63	11.42	1.19	0.00	0.00	0.00	0.00	14.24
ENE	1.48	16.10	3.71	.15	0.00	0.00	0.00	21.44
E	1.48	9.87	5.12	.74	0.06	0.00	0.00	17.21
ESE	2.30	5.12	1.48	.45	0.00	0.00	0.00	9.35
SE	.67	2.97	.45	.22	0.00	0.00	0.00	4.30
SSE	.59	1.85	.22	0.00	0.00	0.00	0.60	2.67
S	.22	.74	.07	0.00	0.00	0.00	0.00	1.04
SSW	.15	1.04	.15	.15	0.00	0.00	0.00	1.48
SW	.52	1.04	.15	.07	0.00	0.00	0.00	1.78
WSW	.30	.96	.45	0.00	0.00	0.00	0.00	1.71
W	.45	1.19	.30	0.00	0.00	0.00	0.00	1.93
WNW	.89	.82	0.00	0.00	0.00	0.00	0.00	1.71
NW	.82	.59	0.00	0.00	0.00	0.00	0.00	1.82
NNW	.89	2.08	0.00	0.00	0.00	0.00	0.00	2.97
CALM								.15
TOTAL	15.13	68.40	14.54	1.78	0.00	0.00	0.00	100.00

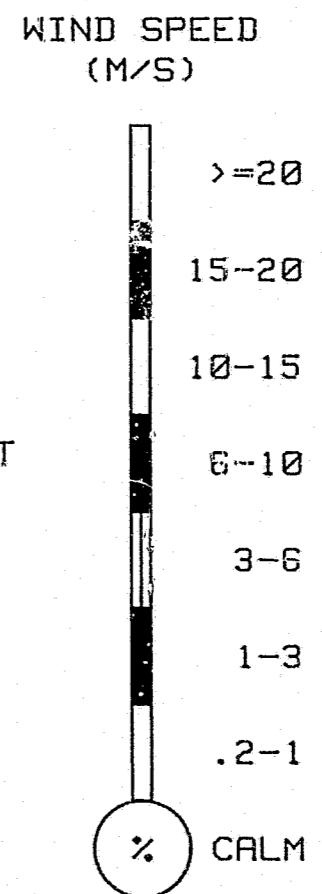
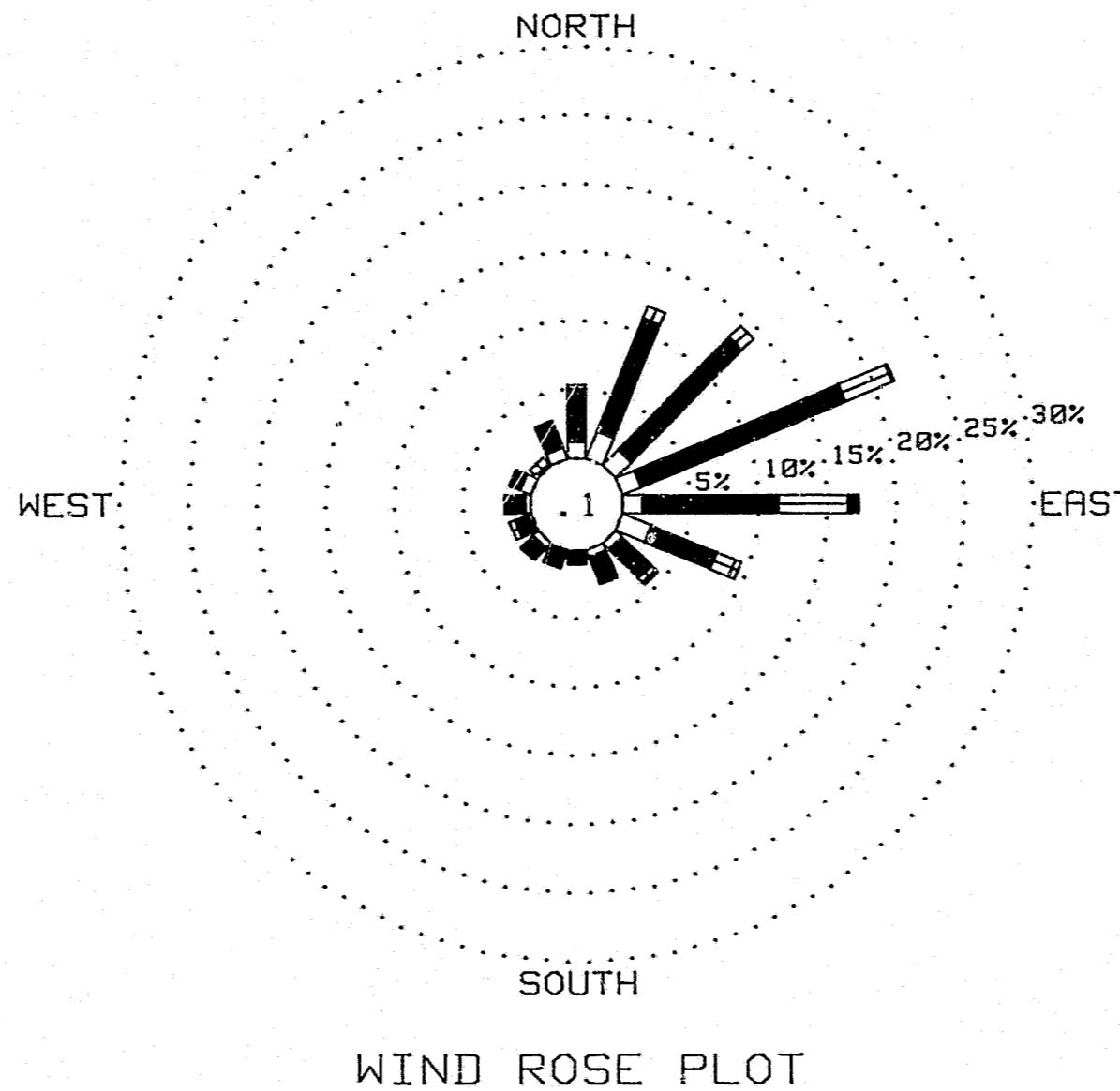
NOTE: ALL FREQUENCIES ARE EXPRESSED IN PERCENT

1348 VALID WIND OBSERVATIONS USED TO DEVELOP FREQUENCY SUMMARY

2976 WIND OBSERVATIONS WOULD HAVE BEEN CORRECT FOR 15 MINUTE DATA.

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

R&M CONSULTANTS, INC.  
SUSITNA HYDROELECTRIC PROJECT  
GLACIER WEATHER STATION  
October, 1983



## R &amp; M CONSULTANTS, INC.

## SUSITNA HYDROELECTRIC PROJECT

HOURLY SOLAR RADIATION SUMMARY FOR GLACIER WEATHER STATION  
DATA TAKEN DURING October, 1983

SOLAR RADIATION VALUES MEASURED IN MILLIWATTS PER SQUARE CENTIMETER

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	Avg
1	0	0	0	0	0	0	1	7	7	10	14	11	9	5	1	0	0	0	0	0	0	0	0	3	
2	0	0	0	0	0	0	3	10	19	24	24	27	15	6	3	0	0	0	0	0	0	0	0	6	
3	0	0	0	0	0	0	2	10	21	29	35	37	35	29	21	11	3	0	0	0	0	0	0	0	10
4	0	0	0	0	0	0	1	12	22	28	34	37	33	28	20	10	2	0	0	0	0	0	0	0	9
5	0	0	0	0	0	0	2	9	12	21	22	21	21	14	10	3	0	0	0	0	0	0	0	0	6
6	0	0	0	0	0	0	1	4	8	13	24	28	32	27	17	4	1	0	0	0	0	0	0	0	6
7	0	0	0	0	0	0	2	10	23	31	37	35	36	27	17	8	1	0	0	0	0	0	0	0	9
8	0	0	0	0	0	0	1	6	19	27	25	30	33	16	13	6	1	0	0	0	0	0	0	0	7
9	0	0	0	0	0	0	1	6	10	13	13	11	8	6	3	1	0	0	0	0	0	0	0	0	3
10	0	0	0	0	0	0	1	4	8	11	12	13	12	9	5	1	0	0	0	0	0	0	0	0	3
11	0	0	0	0	0	0	0	0	1	3	20	18	14	10	4	1	0	0	0	0	0	0	0	0	3
12	0	0	0	0	0	0	1	2	4	6	6	7	7	4	3	1	0	0	0	0	0	0	0	0	2
13	0	0	0	0	0	0	0	0	1	8	12	19	22	23	18	14	6	0	0	0	0	0	0	0	5
14	0	0	0	0	0	0	1	3	10	24	13	18	20	15	8	2	0	0	0	0	0	0	0	0	5
15	0	0	0	0	0	0	1	7	19	25	28	28	24	19	11	4	0	0	0	0	0	0	0	0	7
16	0	0	0	0	0	0	1	7	18	25	31	26	23	14	8	2	0	0	0	0	0	0	0	0	6
17	0	0	0	0	0	0	1	4	11	24	25	29	24	17	7	1	0	0	0	0	0	0	0	0	2
18	0	0	0	0	0	0	0	3	6	8	9	9	8	6	3	1	0	0	0	0	0	0	0	0	2
19	0	0	0	0	0	0	0	1	3	6	7	8	6	4	3	1	0	0	0	0	0	0	0	0	2
20	0	0	0	0	0	0	0	0	1	3	4	6	6	5	3	2	0	0	0	0	0	0	0	0	1
21	0	0	0	0	0	0	0	0	2	7	9	15	22	22	14	9	2	0	0	0	0	0	0	0	4
22	0	0	0	0	0	0	0	2	5	13	15	20	19	9	5	1	0	0	0	0	0	0	0	4	
23	0	0	0	0	0	0	0	2	8	15	14	11	13	9	3	1	0	0	0	0	0	0	0	3	
24	0	0	0	0	0	0	0	2	8	16	19	19	18	14	5	1	0	0	0	0	0	0	0	3	
25	0	0	0	0	0	0	0	2	7	12	16	21	18	13	7	1	0	0	0	0	0	0	0	4	
26	0	0	0	0	0	0	0	1	3	6	21	33	17	10	5	1	0	0	0	0	0	0	0	3	
27	0	0	0	0	0	0	0	1	6	13	16	13	13	6	3	1	0	0	0	0	0	0	0	2	
28	0	0	0	0	0	0	0	1	3	4	4	6	3	6	2	0	0	0	0	0	0	0	0	1	
29	0	0	0	0	0	0	0	1	4	7	11	12	10	7	3	0	0	0	0	0	0	0	0	2	
30	***	0	0	0	0	0	0	0	0	1	4	6	9	10	10	6	2	0	0	0	0	0	0	0	2
31	0	0	0	0	0	0	0	0	0	2	5	3	7	4	3	1	0	0	0	0	0	0	0	0	2

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

## R &amp; M CONSULTANTS, INC.

## SUSITNA HYDROELECTRIC PROJECT

OBSERVATION SUMMARY FOR GLACIER WEATHER STATION  
DATA TAKEN DURING October, 1983

PARAMETER	NUMBER OF USABLE OBSERVATIONS	PERCENT OF TOTAL OBSERVATIONS
TEMPERATURE	1694	100
WIND SPEED	1653	98
WIND DIRECTION	1348	80
PEAK GUST	1653	98
RELATIVE HUMIDITY	1307	77
PRECIPITATION	0	0
SOLAR RADIATION	1694	100
DEW POINT	1307	77

THERE ARE 1694 POSSIBLE OBSERVATIONS THIS MONTH FOR EACH PARAMETER.  
THE DATA RECORDING INTERVAL IS 15 MINUTES.

THE FOLLOWING ADJUSTMENTS HAVE BEEN MADE TO THIS MONTH'S DATA:

1. RH -15 RH Points
2. Solar -1 mW/cm<sup>2</sup>

Additional comments on this month's data:

1. One hour of data "lost" between 0000 and 0100 on 10/30 due to change of official time zone. See note in section 4 of text.
2. Recording time interval was changed on 10/5 from 15 minutes to 30 minutes.
3. Intermittent wind speed and direction data lost due to frozen anemometer and wind vane.

No precipitation data for November  
(See INTERPRETATION OF DATA).

## R &amp; M CONSULTANTS, INC.

## SUSITNA HYDRO ELECTRIC PROJECT

THREE HOUR SUMMARY FOR GLACIER WEATHER STATION  
DATA TAKEN DURING November, 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 C	DEG C	%	DEG C	DEG C	DIR.	SPD.	DIR.	GUST	RAD	
M/S	M/S	MW	M/S	M/S	MW	M/S	M/S	MW	M/S	M/S	MW	M/S	MW

0300	-8.8	-23.7	29	076	2.0	099	3.8	0 0300	-.8	-10.8	47	063	1.7	052	5.7	0 0300	-4.5	-10.5	63	056	1.8	055	5.1	0
0600	-5.8	-16.5	43	067	1.7	068	5.7	0 0600	-.2	-12.3	40	074	4.0	076	7.6	0 0600	-5.2	-11.5	61	077	1.8	089	3.8	0
0900	-5.0	-12.7	55	091	1.4	100	3.8	1 0900	-2.0	-7.9	64	090	5.1	099	11.4	1 0900	-4.8	-14.7	46	045	2.6	040	5.7	1
1200	-3.7	-12.4	51	080	1.1	088	3.2	16 1200	-1.8	*****	63	094	3.2	093	7.6	14 1200	-.8	-24.2	15	059	2.2	062	5.1	15
1500	-2.0	-13.0	43	069	1.6	054	3.8	6 1500	-2.5	-7.0	71	183	1.6	110	9.5	2 1500	-1.0	-26.0	13	072	1.8	069	4.4	7
1800	-1.9	-12.1	46	085	1.4	127	3.8	0 1800	-4.3	-7.1	81	091	4.2	078	9.5	0 1800	-2.2	-26.1	14	071	1.8	051	4.4	0
2100	-1.7	-12.2	45	053	1.5	074	4.4	0 2100	-4.2	-8.1	74	088	1.1	107	5.1	0 2100	-2.8	-28.3	12	067	1.9	069	4.4	0
2400	-3.3	-10.6	57	113	1.1	102	3.8	0 2400	-4.6	-10.2	65	059	1.7	069	4.4	0 2400	-2.2	-30.9	9	069	2.1	061	5.1	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 C	DEG C	%	DEG C	DEG C	M/S	M/S	MW	M/S	MW	M/S	MW

0300	-2.2	-30.9	9	066	2.2	060	5.1	0 0300	-5.1	-7.4	84	061	1.6	047	4.4	0 0300	-6.4	-15.4	49	066	1.6	046	3.8	0
0600	-4.3	-29.5	12	076	1.6	067	3.8	0 0600	-5.8	-9.0	78	040	1.0	037	2.5	0 0600	-7.3	-16.8	47	078	1.5	050	3.2	0
0900	-2.6	-31.3	9	068	2.1	052	5.1	1 0900	-5.8	-9.8	73	966	1.1	054	2.5	1 0900	-6.2	-17.1	42	063	1.4	050	3.2	1
1200	-3.0	****	11	068	1.7	050	4.4	6 1200	-5.5	-12.0	60	040	1.2	054	2.5	10 1200	-4.0	-19.5	29	073	1.6	080	3.8	14
1500	-2.0	-13.3	42	061	1.4	081	5.1	6 1500	-5.8	****	63	082	1.0	062	2.5	4 1500	-5.8	-20.7	30	075	1.1	031	3.8	3
1800	-3.6	-11.6	54	027	1.3	042	3.8	0 1800	-6.6	-12.1	65	061	1.3	048	3.8	0 1800	-6.5	-20.3	33	067	1.4	103	3.2	0
2100	-3.1	****	64	056	.9	016	3.8	0 2100	-6.8	-12.6	63	060	1.7	047	4.4	0 2100	-4.8	-19.5	31	062	1.8	063	4.4	0
2400	-4.9	-7.2	84	109	.8	041	3.8	0 2400	-6.6	-14.4	54	076	1.4	066	2.5	0 2400	-4.6	-20.5	28	070	1.6	110	3.8	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 C	DEG C	%	DEG C	DEG C	M/S	M/S	MW	M/S	MW	M/S	MW

0300	-5.8	-21.9	27	051	1.8	030	4.4	0 0300	-2.0	-13.9	40	099	6.6	089	10.8	0 0300	1.4	-23.3	14	084	3.5	074	8.9	0
0600	-4.7	-21.0	27	076	1.8	073	4.4	0 0600	-1.6	-12.9	42	099	4.2	107	8.9	0 0600	-.1	-22.1	17	065	1.3	053	3.2	0
0900	-5.3	-21.1	28	058	1.7	077	5.1	0 0900	-3.3	-13.9	44	117	2.4	124	10.2	0 0900	-.3	-23.1	16	081	1.7	079	3.8	1
1200	-4.6	-20.1	29	062	1.6	070	4.4	8 1200	-1.5	-14.4	37	068	1.7	056	3.8	15 1200	-.3	-22.4	17	066	1.1	096	3.2	12
1500	-3.5	-19.5	28	100	1.9	109	5.1	2 1500	-1.6	-15.2	35	071	1.5	068	3.2	3 1500	-6.1	-21.4	29	077	1.0	068	3.2	2
1800	-5.2	-19.1	33	105	2.6	104	10.2	0 1800	-.9	-19.6	20	063	1.9	074	4.4	0 1800	-4.0	-23.2	21	065	2.1	072	5.7	0
2100	-3.7	-18.9	30	101	6.1	114	12.1	0 2100	-.5	-22.5	16	077	2.0	059	4.4	0 2100	-2.3	-16.2	34	093	4.2	101	10.8	0
2400	-4.0	-16.4	38	096	6.2	100	11.4	0 2400	1.9	-20.6	17	085	2.7	096	8.3	0 2400	-2.4	-16.3	34	094	5.3	116	14.0	0

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

## R &amp; M CONSULTANTS, INC.

## SISIKA TINA HYDRO ELECTRIC PROJECT

THREE HOUR SUMMARY FOR GLACIER WEATHER STATION  
DATA TAKEN DURING November, 1983

DAY 10

DAY 11

DAY 12

HOUR	DEW	WIND	WIND GUST MAX.	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	MW							DEG C	DEG C	% DEG.	M/S	MW					DEG C	DEG C	% DEG.	M/S	MW		

0300	-2.8	-16.6	34	102	5.5	096	13.3	0	0300	-1.1	-17.8	27	072	1.9	077	5.1	0	0300	-6.9	-21.3	31	086	1.7	101	5.7	0
0600	-2.2	-16.8	32	082	4.2	102	9.5	0	0600	-.2	-18.4	24	072	1.8	059	4.4	0	0600	-5.5	-18.3	36	030	1.3	030	3.8	0
0900	-1.8	-18.5	27	082	4.6	091	10.2	0	0900	2.7	*****	**	063	3.5	070	7.6	1	0900	-6.3	-11.6	66	064	1.3	055	3.8	0
1200	-.8	-17.2	28	075	4.1	083	8.3	15	1200	1.7	*****	**	069	3.0	076	7.6	16	1200	-6.2	-9.9	75	055	1.0	091	3.8	4
1500	-2.9	-17.8	31	094	3.4	073	8.3	3	1500	-1.8	*****	**	081	1.8	057	4.4	3	1500	-6.6	*****	77	061	.9	052	2.5	3
1800	-3.5	-19.5	28	076	3.5	072	7.0	0	1800	-5.4	-20.8	29	029	1.6	009	5.1	0	1800	-7.0	-10.2	78	092	1.0	071	3.2	0
2100	-2.5	-18.6	28	075	2.0	066	5.1	0	2100	-7.5	-21.1	33	070	1.7	096	4.4	0	2100	-6.2	*****	66	063	.9	047	3.2	0
2400	-1.4	-17.3	29	061	3.5	063	8.3	0	2400	-9.2	-21.0	38	058	.9	068	3.2	0	2400	-6.3	-11.8	65	032	.8	063	3.8	0

DAY 13

DAY 14

DAY 15

HOUR	DEW	WIND	WIND GUST MAX.	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	MW							DEG C	DEG C	% DEG.	M/S	MW					DEG C	DEG C	% DEG.	M/S	MW		

0300	-7.4	-13.8	60	065	2.0	057	3.8	0	0300	-6.9	-27.9	17	068	1.5	065	3.2	0	0300	-7.5	-25.1	23	069	1.4	076	2.5	0
0600	-7.1	-14.0	58	067	1.9	062	3.8	0	0600	-7.2	-26.9	19	072	1.4	069	3.8	0	0600	-7.6	-24.8	24	075	1.5	062	3.2	0
0900	-7.5	-15.9	51	064	1.6	059	3.2	0	0900	-7.5	-27.2	19	073	1.6	064	3.2	1	0900	-6.7	-26.0	20	065	1.5	079	3.2	0
1200	-6.1	-16.5	44	070	1.6	072	3.2	9	1200	-5.6	-26.8	17	065	1.8	058	3.8	10	1200	-4.8	-24.9	19	072	1.5	069	3.2	7
1500	-7.1	-21.1	32	074	1.2	073	2.5	2	1500	-8.2	-26.2	22	087	1.2	082	2.5	2	1500	-3.3	-29.7	11	072	1.9	066	4.4	2
1800	-6.3	-23.2	25	069	1.6	079	3.8	0	1800	-7.0	-22.5	28	058	1.3	061	2.5	0	1800	-3.4	-22.6	21	067	2.0	067	4.4	0
2100	-7.2	-24.4	24	067	1.5	078	3.2	0	2100	-8.0	-24.2	26	072	1.7	069	3.8	0	2100	-3.7	-19.7	28	070	1.6	089	3.8	0
2400	-6.7	-27.1	18	064	1.5	066	4.4	0	2400	-7.8	-24.9	24	072	1.4	069	2.5	0	2400	-4.8	-19.1	32	043	1.4	030	3.2	0

DAY 16

DAY 17

DAY 18

HOUR	DEW	WIND	WIND GUST MAX.	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	MW							DEG C	DEG C	% DEG.	M/S	MW					DEG C	DEG C	% DEG.	M/S	MW		

0300	-5.6	-19.1	34	067	1.3	064	3.8	0	0300	-9.3	-17.9	50	073	1.4	054	3.2	0	0300	-9.3	-12.7	76	047	1.1	105	3.8	0
0600	-7.5	*****	71	047	1.0	111	3.2	0	0600	-9.8	-18.1	51	070	1.5	073	3.8	0	0600	-10.0	*****	87	049	.8	040	2.5	0
0900	-7.6	-11.1	76	049	1.1	071	3.2	0	0900	-8.4	-17.8	47	065	1.7	057	3.8	0	0900	-8.7	-14.3	64	095	1.8	098	7.0	0
1200	-7.6	*****	73	037	.9	006	2.5	8	1200	-7.5	-18.0	43	065	1.9	067	4.4	6	1200	-9.3	*****	69	139	1.1	109	6.3	7
1500	-8.7	-14.1	65	082	1.2	163	5.7	1	1500	-7.3	-17.0	46	068	1.6	078	3.8	1	1500	-9.3	-16.5	56	094	1.6	106	5.1	2
1800	-9.4	-15.9	59	067	1.5	057	3.2	0	1800	-8.7	*****	61	049	.9	050	3.2	0	1800	-9.3	-16.0	58	081	1.3	085	4.4	0
2100	-9.3	-17.4	52	073	1.3	065	3.8	0	2100	-8.3	-16.2	53	092	1.4	092	3.2	0	2100	-9.2	-16.4	56	079	2.8	067	5.7	0
2400	-9.2	-17.8	50	059	1.4	042	3.2	0	2400	-8.4	-16.3	53	076	2.7	096	5.7	0	2400	-9.7	-17.5	53	074	2.6	071	6.3	0

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

## R &amp; M CONSULTANTS, INC.

## SUSITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR GLACIER WEATHER STATION  
DATA TAKEN DURING November, 1983

DAY 19

DAY 20

DAY 21

HOUR	DEW	WIND	WIND GUST MAX.	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	MW																								

0300	-8.4	-18.8	43	057	1.8	061	4.4	0	0300	-10.4	-22.7	36	063	1.9	035	5.1	0	0300	-7.1	-13.1	62	090	6.5	096	12.7	0
0600	-8.3	-15.5	56	072	2.0	072	4.4	0	0600	-11.1	-27.7	24	059	1.9	059	5.1	0	0600	-5.5	-10.4	68	094	5.4	090	10.8	0
0900	-8.5	****	82	076	1.1	049	3.2	0	0900	-10.8	-27.9	23	067	2.0	039	4.4	0	0900	-3.1	-8.7	65	089	5.8	081	12.7	0
1200	-8.0	-12.0	73	061	.9	056	1.9	3	1200	-10.2	-26.1	26	085	1.6	057	5.7	4	1200	-2.8	-7.7	69	085	5.4	090	14.6	2
1500	-9.8	****	86	013	.7	039	2.5	0	1500	-10.1	-21.5	39	113	2.1	114	6.3	0	1500	-1.6	-8.3	60	086	8.0	085	14.0	0
1800	-10.6	-12.1	89	345	.5	276	3.2	0	1800	-9.1	-15.4	60	121	4.4	128	8.9	0	1800	-2.5	-7.6	68	109	8.4	103	15.2	0
2100	-12.5	-14.5	85	056	1.1	087	3.8	0	2100	-8.7	-14.8	61	116	5.4	103	12.7	0	2100	-3.8	-5.5	88	116	4.4	127	11.4	0
2400	-11.6	-24.1	35	070	1.7	075	3.8	0	2400	-7.9	-14.1	61	100	7.2	107	10.8	0	2400	-3.4	-5.1	88	002	1.5	337	5.1	0

DAY 22

DAY 23

DAY 24

HOUR	DEW	WIND	WIND GUST MAX.	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	MW																							

0300	-4.0	-4.6	96	360	1.2	008	3.2	0	0300	-5.8	-11.1	66	086	1.6	081	3.2	0	0300	-10.6	-17.1	59	060	1.4	057	3.2	0
0600	-4.3	****	99	068	.6	155	4.4	0	0600	-5.3	-13.6	52	074	1.6	104	3.2	0	0600	-10.9	-17.8	57	068	1.1	067	3.2	0
0900	-4.8	****	96	189	.7	162	3.2	0	0900	-4.6	-14.0	48	060	1.9	051	4.4	0	0900	-9.4	-16.6	56	077	1.0	125	3.2	0
1200	-4.7	****	96	138	.9	149	3.2	2	1200	-5.8	-14.6	50	077	1.3	072	3.2	3	1200	-9.0	-16.4	55	077	1.5	051	3.8	3
1500	-5.4	-7.7	84	094	1.6	107	4.4	0	1500	-9.0	-14.5	64	054	1.2	014	4.4	1	1500	-10.1	****	57	070	1.3	052	3.2	1
1800	-5.5	-10.6	67	061	1.3	042	3.2	0	1800	-8.9	-14.6	63	026	1.1	011	2.5	0	1800	-9.9	-16.6	58	078	1.8	061	4.4	0
2100	-5.0	-10.5	65	055	1.3	057	3.8	0	2100	-9.9	-15.6	63	024	1.2	020	2.5	0	2100	-10.9	-17.3	59	074	1.6	088	3.2	0
2400	-5.7	-11.2	65	082	1.3	059	3.2	0	2400	-10.1	-16.2	61	026	1.4	022	3.2	0	2400	-10.2	-17.3	56	075	1.7	065	4.4	0

DAY 25

DAY 26

DAY 27

HOUR	DEW	WIND	WIND GUST MAX.	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	MW																							

0300	-11.5	-18.1	58	042	1.3	013	3.8	0	0300	-6.0	****	54	083	1.4	108	3.8	0	0300	-7.2	-11.7	70	083	1.4	051	3.2	0
0600	-9.2	-18.5	47	065	1.2	058	3.8	0	0600	-6.8	-8.6	87	073	.8	100	3.8	0	0600	-5.6	-11.1	65	059	1.3	074	3.2	0
0900	-9.8	-19.1	47	043	1.4	076	3.2	0	0900	-7.0	-9.7	81	059	1.1	078	3.2	0	0900	-5.7	****	63	059	1.3	063	4.4	0
1200	-8.5	-18.9	43	068	1.8	081	5.1	3	1200	-6.6	****	76	074	.9	056	3.2	3	1200	-5.4	-12.4	58	089	1.4	063	4.4	3
1500	-8.0	-17.7	46	067	1.9	070	4.4	1	1500	-6.7	-11.6	68	061	1.3	058	3.8	1	1500	-5.3	-11.6	61	085	1.3	085	3.8	0
1800	-7.7	-16.6	49	066	1.9	059	4.4	0	1800	-8.4	-13.2	68	065	1.4	039	3.2	0	1800	-5.3	-11.2	63	081	1.5	098	3.8	0
2100	-7.6	-16.0	51	068	2.0	059	5.7	0	2100	-6.5	-12.8	61	076	2.1	062	5.1	0	2100	-4.3	-11.1	59	084	3.2	076	6.3	0
2400	-7.5	-15.2	54	042	1.8	050	6.3	0	2400	-7.8	-9.8	86	058	1.3	038	3.2	0	2400	-5.8	-11.3	65	096	4.8	106	10.2	0

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

## R &amp; M CONSULTANTS, INC.

## SUSITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR GLACIER WEATHER STATION  
DATA TAKEN DURING November, 1983

DAY 28

DAY 29

DAY 30

HOUR	DEW	WIND	WIND GUST MAX.	POINT	NDNG TEMP.	RH	DIR.	SPD.	DIR.	GUST	RAD	POINT	NDNG TEMP.	RH	DIR.	SPD.	DIR.	GUST	RAD
	DEG C	DEG C	% DEG. M/S	DEG C	DEG C	% DEG. M/S	DEG C	DEG C	DEG C	M/S	MW	DEG C	DEG C	% DEG. M/S	DEG C	DEG C	DEG C	M/S	MW

0300	-5.8	-8.7	80	169	1.1	164	7.0	0	0300	2.5	-13.5	30	105	8.3	117	16.5	0	0300	2.0	***** **	094	4.3	087	8.3	0
0600	-3.8	-8.6	69	099	3.3	035	9.5	0	0600	2.9	-14.4	27	117	7.6	123	15.9	0	0600	1.3	***** **	088	5.0	084	8.3	0
0900	-3.2	-9.2	63	113	7.4	100	11.4	0	0900	3.5	-15.3	24	116	6.9	118	19.7	0	0900	1.1	***** **	085	4.6	093	9.5	0
1200	-2.8	-10.1	57	102	5.6	112	11.4	2	1200	3.0	-16.2	23	079	5.4	077	12.7	2	1200	.9	***** **	080	4.2	081	11.4	3
1500	-1.8	-10.1	53	095	7.5	105	14.0	0	1500	5.5	***** **	079	5.2	067	10.8	1	1500	-1.6	-10.5	51	105	5.5	104	11.4	0
1800	-1.5	-9.9	53	096	6.4	083	13.3	0	1800	3.4	***** **	087	5.0	085	8.9	0	1800	-1.2	-11.1	47	086	3.7	078	8.3	0
2100	-.9	-11.1	46	099	6.8	110	14.0	0	2100	3.0	***** **	083	5.8	090	14.0	0	2100	-1.0	-12.4	42	094	4.7	118	10.8	0
2400	.7	-12.5	37	115	9.7	112	15.9	0	2400	1.1	***** **	096	4.2	111	14.6	0	2400	-1.4	-10.5	50	096	4.3	099	9.3	0

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

## R &amp; M CONSULTANTS, INC.

## SLEEK TNA HYDRO ELECTRIC PROJECT

MONTHLY SUMMARY FOR GLACIER WEATHER STATION  
DATA TAKEN DURING November, 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 P'VAL SPD. M/S	MEAN RH %	MEAN DP DEG C	PRECIP MM	DAY'S SOLAR ENERGY WH/SQM
1	-6	-12.5	-6.6	078	1.4	1.6	068	5.7	E	47	-15.1	****
2	4	-4.6	-2.1	088	2.5	3.1	099	11.4	E	61	-9.2	****
3	-2	-5.2	-2.7	064	2.0	2.0	040	5.7	ENE	31	-20.5	****
4	-1.6	-5.3	-3.5	065	1.4	1.7	060	5.1	ENE	28	-23.4	****
5	-5.0	-7.6	-6.3	061	1.3	1.4	047	4.4	NE	68	-11.2	****
6	-4.0	-7.3	-5.7	069	1.5	1.6	063	4.4	ENE	38	-18.4	****
7	-3.2	-6.1	-4.7	089	2.8	3.1	114	12.1	E	29	-19.9	****
8	3.2	-3.9	-4	090	2.8	3.0	089	10.8	E	33	-16.5	****
9	2.9	-7.0	-2.1	084	2.6	2.7	116	14.0	E	21	-21.4	****
10	-6	-4.1	-2.4	082	3.7	3.9	096	13.3	ENE	29	-18.0	****
11	2.9	-9.2	-3.2	066	2.0	2.2	070	7.6	ENE	29	-19.7	****
12	-5.0	-8.9	-7.0	063	1.1	1.3	101	5.7	E	57	-14.5	****
13	-5.8	-7.7	-6.8	067	1.6	1.7	066	4.4	ENE	42	-18.6	****
14	-5.6	-8.3	-7.0	071	1.5	1.5	069	3.8	ENE	22	-25.8	****
15	-2.1	-7.7	-4.9	067	1.6	1.6	066	4.4	ENE	22	-24.3	****
16	-4.4	-9.7	-7.1	061	1.2	1.3	163	5.7	ENE	57	-15.3	****
17	-7.0	-10.1	-8.6	071	1.6	1.7	096	5.7	ENE	49	-17.4	****
18	-8.4	-10.3	-9.4	082	1.5	1.8	098	7.0	ENE	61	-15.4	****
19	-7.5	-12.6	-10.1	059	1.1	1.5	061	4.4	ENE	67	-15.1	****
20	-7.9	-11.8	-9.9	099	3.1	3.4	103	12.7	ESE	41	-21.5	****
21	-1.5	-7.7	-4.6	093	5.4	5.7	103	15.2	E	68	-8.9	****
22	-3.6	-6.1	-4.9	076	.8	1.3	155	4.4	ENE	82	-7.6	****
23	-4.6	-10.8	-7.7	056	1.3	1.5	051	4.4	NE	58	-14.3	****
24	-8.1	-12.3	-10.2	073	1.4	1.6	061	4.4	ENE	57	-16.8	****
25	-7.0	-13.8	-10.4	059	1.6	1.8	050	6.3	ENE	49	-17.6	****
26	-5.8	-8.7	-7.3	069	1.3	1.4	062	5.1	ENE	70	-11.9	****
27	-4.3	-7.8	-6.1	084	2.0	2.2	106	10.2	E	64	-11.3	****
28	.9	-5.9	-2.5	105	5.8	6.2	112	15.9	ESE	58	-10.0	****
29	5.5	.9	3.2	097	5.9	6.1	118	19.7	E	28	-14.0	****
30	2.9	-1.6	.7	092	4.5	4.6	081	11.4	E	45	-11.7	****
MONTH	5.5	-13.8	-5.3	083	2.2	2.5	118	19.7	ENE	46	-16.2	****
												8665

GUST VEL. AT MAX. GUST MINUS 2 INTERVALS 14.6

GUST VEL. AT MAX. GUST MINUS 1 INTERVAL 15.9

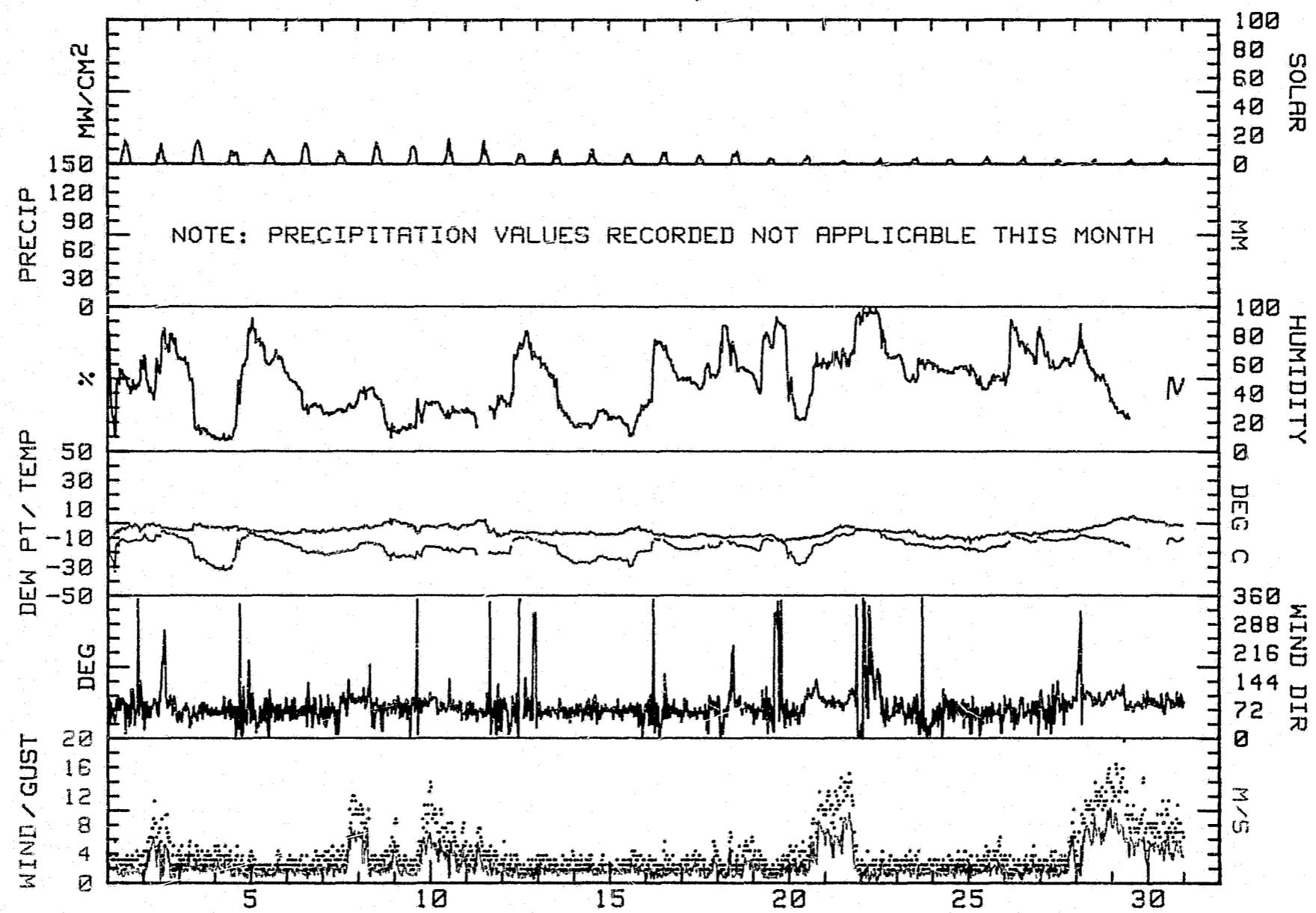
GUST VEL. AT MAX. GUST PLUS 1 INTERVAL 12.7

GUST VEL. AT MAX. GUST PLUS 2 INTERVALS 9.5

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 INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

R&M CONSULTANTS, INC.  
SUSITNA HYDROELECTRIC PROJECT  
GLACIER WEATHER STATION  
November, 1983



## R &amp; M CONSULTANTS, INC.

## SUSITNA HYDROELECTRIC PROJECT

WIND FREQUENCY SUMMARY FOR GLACIER WEATHER STATION  
DATA TAKEN DURING November, 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		
	1.0	3.0	6.0	10.0	15.0	20.0			
N	.14	2.16	.07	0.00	0.00	0.00	0.00	2.37	
NNE	.56	4.04	.07	0.00	0.00	0.00	0.00	4.67	
NE	1.18	11.70	.49	0.00	0.00	0.00	0.00	13.37	
ENE	1.81	29.25	4.46	.14	0.00	0.00	0.00	35.65	
E	1.32	14.62	6.62	4.11	0.00	0.00	0.00	26.67	
ESE	.77	4.53	2.23	3.62	.14	0.00	0.00	11.28	
SE	.42	1.18	.35	.21	0.00	0.00	0.00	2.16	
SSE	.49	.56	.07	0.00	0.00	0.00	0.00	1.11	
S	.07	.28	0.00	0.00	0.00	0.00	0.00	.35	
SSW	.14	0.00	.07	0.00	0.00	0.00	0.00	.21	
SW	.21	.21	0.00	0.00	0.00	0.00	0.00	.42	
WSW	0.00	.07	0.00	0.00	0.00	0.00	0.00	.07	
W	0.00	.21	0.00	0.00	0.00	0.00	0.00	.21	
WNW	.07	0.00	0.00	0.00	0.00	0.00	0.00	.07	
NW	.56	.14	0.00	0.00	0.00	0.00	0.00	.70	
NNW	.14	.49	0.00	0.00	0.00	0.00	0.00	.63	
CALM								.07	
TOTAL	7.87	69.43	14.42	8.08	.14	0.00	0.00	100.00	

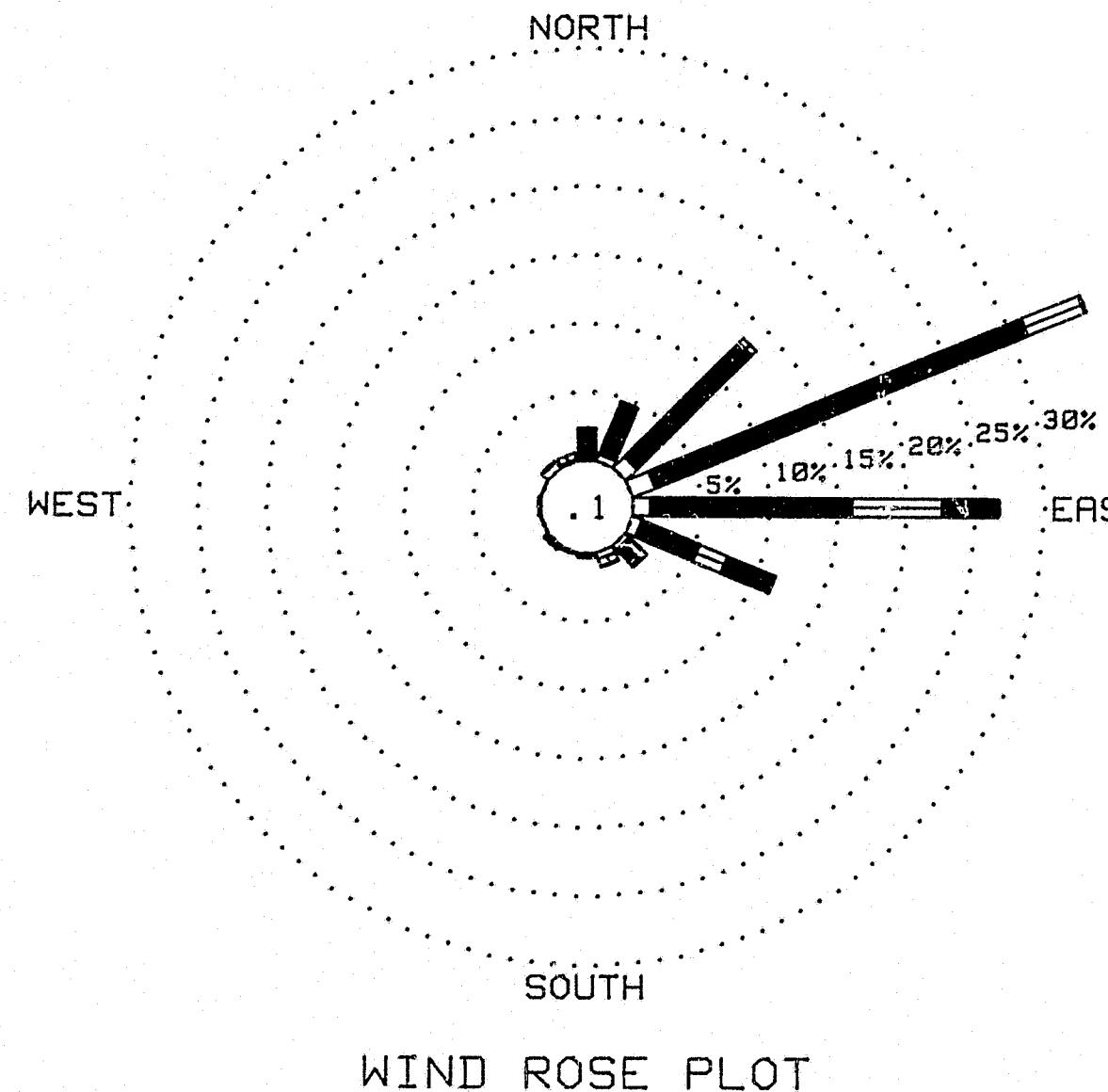
NOTE: ALL FREQUENCIES ARE EXPRESSED IN PERCENT

1436 VALID WIND OBSERVATIONS USED TO DEVELOP FREQUENCY SUMMARY

1440 WIND OBSERVATIONS WOULD HAVE BEEN CORRECT FOR 30 MINUTE DATA.

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

R&M CONSULTANTS, INC.  
SUSITNA HYDROELECTRIC PROJECT  
GLACIER WEATHER STATION  
November, 1983



R & M CONSULTANTS, INC.  
SUSTAINA HYDROELECTRIC PROJECT

HOURLY SOLAR RADIATION SUMMARY FOR GLACIER WEATHER STATION  
DATA TAKEN DURING November, 1983

SOLAR RADIATION VALUES MEASURED IN MILLIWATTS PER SQUARE CENTIMETER

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	Avg
1	0	0	0	0	0	0	0	1	5	9	14	14	12	7	2	0	0	0	0	0	0	0	0	0	3
2	0	0	0	0	0	0	0	1	6	6	13	10	5	2	1	0	0	0	0	0	0	0	0	0	2
3	0	0	0	0	0	0	0	1	4	11	15	16	13	9	3	0	0	0	0	0	0	0	0	0	3
4	0	0	0	0	0	0	0	1	4	8	8	7	8	7	1	0	0	0	0	0	0	0	0	0	2
5	0	0	0	0	0	0	0	1	4	6	9	8	7	5	2	0	0	0	0	0	0	0	0	0	2
6	0	0	0	0	0	0	0	1	2	9	13	14	12	6	2	0	0	0	0	0	0	0	0	0	2
7	0	0	0	0	0	0	0	0	4	7	8	6	6	3	1	0	0	0	0	0	0	0	0	0	1
8	0	0	0	0	0	0	0	0	4	9	13	12	10	4	1	0	0	0	0	0	0	0	0	0	2
9	0	0	0	0	0	0	0	1	3	8	12	12	11	5	1	0	0	0	0	0	0	0	0	0	2
10	0	0	0	0	0	0	0	0	2	5	12	16	8	5	1	0	0	0	0	0	0	0	0	0	2
11	0	0	0	0	0	0	0	1	3	8	15	9	8	4	1	0	0	0	0	0	0	0	0	0	2
12	0	0	0	0	0	0	0	0	2	4	6	7	6	4	1	0	0	0	0	0	0	0	0	0	1
13	0	0	0	0	0	0	0	0	2	5	9	7	5	4	1	0	0	0	0	0	0	0	0	0	1
14	0	0	0	0	0	0	0	1	2	5	9	8	5	3	1	0	0	0	0	0	0	0	0	0	1
15	0	0	0	0	0	0	0	0	2	4	6	6	5	3	1	0	0	0	0	0	0	0	0	0	1
16	0	0	0	0	0	0	0	0	1	4	7	6	7	2	1	0	0	0	0	0	0	0	0	0	1
17	0	0	0	0	0	0	0	0	1	3	6	6	3	2	0	0	0	0	0	0	0	0	0	0	1
18	0	0	0	0	0	0	0	0	2	6	7	7	9	4	1	0	0	0	0	0	0	0	0	0	1
19	0	0	0	0	0	0	0	0	1	2	4	4	3	1	0	0	0	0	0	0	0	0	0	0	1
20	0	0	0	0	0	0	0	0	1	3	4	6	5	1	0	0	0	0	0	0	0	0	0	0	1
21	0	0	0	0	0	0	0	0	0	1	2	2	2	2	1	0	0	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0	0	1	2	3	3	1	0	0	0	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0	1	2	3	3	3	2	0	0	0	0	0	0	0	0	0	0	1
24	0	0	0	0	0	0	0	0	1	3	3	3	3	1	0	0	0	0	0	0	0	0	0	0	1
25	0	0	0	0	0	0	0	0	1	2	3	5	3	2	0	0	0	0	0	0	0	0	0	0	1
26	0	0	0	0	0	0	0	0	0	1	3	3	3	5	2	0	0	0	0	0	0	0	0	0	1
27	0	0	0	0	0	0	0	0	0	2	3	3	3	2	1	0	0	0	0	0	0	0	0	0	0
28	0	0	0	0	0	0	0	0	0	1	2	3	3	2	1	0	0	0	0	0	0	0	0	0	0
29	0	0	0	0	0	0	0	0	0	1	2	3	4	2	1	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	1	1	3	4	2	1	0	0	0	0	0	0	0	0	0	0	0

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

## R &amp; M CONSULTANTS, INC.

## SUSITNA HYDROELECTRIC PROJECT

OBSERVATION SUMMARY FOR GLACIER WEATHER STATION  
DATA TAKEN DURING November, 1983

PARAMETER	NUMBER OF USABLE OBSERVATIONS	PERCENT OF TOTAL OBSERVATIONS
TEMPERATURE	1440	100
WIND SPEED	1440	100
WIND DIRECTION	1436	100
PEAK GUST	1440	100
RELATIVE HUMIDITY	1256	87
PRECIPITATION	0	0
SOLAR RADIATION	1440	100
DEW POINT	1256	87

THERE ARE 1440 POSSIBLE OBSERVATIONS THIS MONTH FOR EACH PARAMETER.  
THE DATA RECORDING INTERVAL IS 30 MINUTES.

THE FOLLOWING ADJUSTMENTS HAVE BEEN MADE TO THIS MONTH'S DATA:

1. RH -15 RH Points 11/1 - 11/16  
-12 11/16 - 11/30
2. Solar -1 mW/CM<sup>2</sup>

Additional comments on this month's data:

1. RH data looks suspiciously low in several places. Bad data deleted on days 10, 29, and 30.

No precipitation data for December

(See INTERPRETATION OF DATA).

## R. A. M. CONSULTANTS, INC.

## GLACIER NATIONAL HYDRO ELECTRIC PROJECT

THREE HOUR SUMMARY FOR GLACIER WEATHER STATION  
DATA TAKEN DURING December, 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 C	DEG C	% DEG.	M/S	DEG C	DEG C	DEG C	M/S	DEG C	M/S												
0300	-3 -10.3	45	087	4.9	083	10.2	0	0300	-3.7	-6.5	81	067	1.4	075	2.5	0	0300	-7.9	-9.3	90	.001	1.1	022	3.2	0
0600	-1.3 -10.4	50	111	3.5	114	8.3	0	0600	-5.0	-5.7	95	025	1.0	016	3.8	0	0600	-8.2	****	93	.039	.6	021	2.5	0
0900	.1 -9.9	47	101	2.5	125	10.8	0	0900	-6.1	-6.8	95	337	.8	303	3.2	0	0900	-8.4	****	91	.063	.7	095	2.5	0
1200	-.6 -9.3	52	100	3.9	128	9.5	4	1200	-6.0	-6.7	95	316	1.2	336	2.5	1	1200	-7.7	****	86	.051	1.1	038	3.2	2
1500	-2.2 -6.2	74	070	1.6	078	3.8	0	1500	-6.7	****	93	300	.8	302	1.9	0	1500	-8.6	****	88	.065	.5	002	2.5	0
1800	-3.3 ****	90	***	***	***	2.5	0	1800	-7.2	****	94	***	***	***	1.3	0	1800	-9.2	-11.0	87	.068	.9	021	3.2	0
2100	-3.5 -5.2	88	***	***	***	1.9	0	2100	-7.3	****	94	027	.6	000	1.9	0	2100	-9.8	-10.7	93	.051	1.0	105	3.8	0
2400	-3.8 ****	90	***	***	***	1.3	0	2400	-7.5	-8.2	95	013	.9	013	2.5	0	2400	-9.3	-10.7	90	.083	.7	103	3.2	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 C	DEG C	% DEG.	M/S	DEG C	DEG C	DEG C	M/S	DEG C	M/S												
0300	-8.2 -11.5	77	104	1.1	089	3.8	0	0300	-7.0	****	77	091	1.0	118	3.2	0	0300	-7.8	-10.8	79	.034	3.9	028	6.3	0
0600	-7.6 -11.4	74	097	1.0	084	2.5	0	0600	-8.0	****	80	066	.8	108	3.2	0	0600	-7.0	-9.7	81	.074	1.5	043	5.7	0
0900	-8.4 ****	86	095	.9	090	2.5	0	0900	-7.5	****	75	***	***	***	2.5	0	0900	-7.6	-9.8	84	.056	1.1	075	4.4	0
1200	-7.9 -11.2	77	068	1.1	045	3.2	0	1200	-7.4	-11.2	74	***	***	***	1.9	1	1200	-7.5	-9.2	88	.038	1.6	036	4.4	1
1500	-7.1 -10.4	77	058	1.7	093	4.4	0	1500	-7.4	-10.6	78	***	***	***	3.2	0	1500	-9.3	-10.4	92	.020	1.0	019	3.2	0
1800	-8.3 -9.0	95	130	1.4	127	3.2	0	1800	-7.2	-10.1	80	087	1.1	043	3.2	0	1800	-10.1	****	90	.050	.8	027	3.2	0
2100	-8.2 ****	88	138	.6	153	2.5	0	2100	-7.0	-9.6	82	070	.9	076	3.2	0	2100	-10.6	-11.9	90	.041	.9	090	2.5	0
2400	-7.8 -9.9	85	085	1.0	053	3.2	0	2400	-6.4	-10.1	75	079	1.0	077	3.8	0	2400	-10.8	-12.3	89	.058	.5	001	2.5	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 C	DEG C	% DEG.	M/S	DEG C	DEG C	DEG C	M/S	DEG C	M/S												
0300	-9.8 ****	95	040	.5	031	1.9	0	0300	-3.8	-17.2	35	070	1.0	085	3.2	0	0300	-11.8	-28.8	23	.069	1.4	068	5.1	0
0600	-10.2 ****	91	079	.4	072	1.9	0	0600	-4.2	****	36	077	1.2	071	3.2	0	0600	-16.4	-29.4	32	.086	1.7	084	4.4	0
0900	-11.1 ****	91	089	.5	092	1.3	0	0900	-4.2	-17.2	36	080	1.2	095	3.8	0	0900	-17.2	-29.7	33	.057	1.1	091	3.2	0
1200	-10.9 ****	91	081	.3	095	1.3	1	1200	-4.7	-17.3	37	104	1.3	129	3.2	2	1200	-15.9	-31.1	24	.056	1.5	044	3.8	2
1500	-12.6 ****	89	044	.3	352	1.9	0	1500	-7.1	-19.1	38	110	1.3	099	4.4	0	1500	-16.3	-31.8	25	.071	1.1	032	3.2	0
1800	-10.0 ****	84	058	.5	036	1.9	0	1800	-8.3	-23.7	28	058	1.8	071	4.4	0	1800	-17.0	****	26	.067	1.1	053	2.5	0
2100	-9.8 ****	68	082	.6	123	2.5	0	2100	-10.7	-24.7	31	047	1.7	045	4.4	0	2100	-15.7	-31.7	24	.050	1.3	032	3.8	0
2400	-5.3 ****	46	058	.9	043	2.5	0	2400	-11.2	-25.8	29	067	1.3	069	3.2	0	2400	-18.1	****	27	.083	1.4	081	3.8	0

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

## R &amp; M CONSULTANT'S, INC.

## ESUSS ITNA HYDRO ELECTRIC PROJECT

THREE HOUR SUMMARY FOR GLACIER WEATHER STATION  
DATA TAKEN DURING December, 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	MW		DEG C	DEG C	%	DEG. M/S	MW							
0300	-15.8	-31.4	25	051	1.0	076	2.5	0 0300	-8.4	-20.9	36	074	1.4	076	3.8	0 0300	-11.0	-14.2	77	066	3.1	062	5.7	0
0600	-13.8	-29.6	25	074	1.7	058	4.4	0 0600	-9.4	-20.3	41	064	1.3	055	3.8	0 0600	-11.4	-14.3	79	071	2.3	062	5.7	0
0900	-14.3	-27.2	33	071	1.4	044	4.4	0 0900	-9.5	-19.9	43	071	1.7	065	3.8	0 0900	-11.8	-13.4	88	071	1.7	083	5.1	0
1200	-11.0	-23.3	36	053	1.9	057	5.1	3 1200	-10.0	-19.5	46	056	1.5	016	3.2	2 1200	-12.9	-14.4	89	062	1.8	058	4.4	1
1500	-10.8	-22.8	37	079	2.2	101	4.4	0 1500	-10.0	-18.5	50	070	1.7	060	4.4	0 1500	-12.5	-14.1	88	041	1.3	040	4.4	0
1800	-10.6	-21.7	40	059	2.3	039	5.1	0 1800	-9.9	-17.5	54	071	1.7	090	3.2	0 1800	-13.0	-14.5	89	048	.7	019	3.2	0
2100	-9.6	-21.7	37	071	1.7	074	4.4	0 2100	-9.6	-15.9	60	053	1.5	056	4.4	0 2100	-14.4	-16.5	64	067	1.2	067	3.8	0
2400	-8.8	-20.7	38	066	1.9	067	5.1	0 2400	-10.1	-14.2	72	054	2.7	036	5.7	0 2400	-12.6	-17.8	65	062	1.0	053	2.5	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.	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	MW		DEG C	DEG C	%	DEG. M/S	MW							
0300	-13.2	*****	63	061	1.2	091	3.2	0 0300	-15.9	*****	86	094	1.0	081	2.5	0 0300	-17.4	*****	71	066	.8	025	3.2	0
0600	-13.6	*****	72	089	.9	028	3.8	0 0600	-14.3	-18.2	72	069	.8	101	2.5	0 0600	-17.7	-21.8	70	070	1.1	084	3.2	0
0900	-12.6	*****	76	081	1.0	058	3.2	0 0900	-15.8	-18.5	80	048	.8	092	1.9	0 0900	-18.3	-22.1	72	053	1.2	084	3.8	0
1200	-11.5	*****	72	053	1.1	092	3.2	2 1200	-16.5	*****	73	066	.9	039	2.5	2 1200	-19.5	-23.4	71	042	1.3	032	3.2	2
1500	-11.3	-14.5	77	104	.9	100	1.9	0 1500	-17.3	-21.1	72	079	.9	093	3.8	0 1500	-19.2	-23.1	71	062	1.4	042	3.2	0
1800	-9.6	-15.9	60	074	1.4	059	3.2	0 1800	-17.7	-21.5	72	050	1.3	046	3.2	0 1800	-19.9	-23.6	72	075	1.3	078	2.5	0
2100	-10.1	-15.4	65	085	1.4	075	3.2	0 2100	-17.1	-20.8	73	041	1.5	037	4.4	0 2100	-19.2	-27.3	49	066	1.5	066	3.8	0
2400	-12.2	-17.0	67	073	1.2	070	3.2	0 2400	-16.9	-21.1	70	045	1.6	039	3.8	0 2400	-19.5	*****	41	064	1.4	019	4.4	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	MW		DEG C	DEG C	%	DEG. M/S	MW							
0300	-19.9	-30.4	39	088	1.0	081	3.2	0 0300	-14.3	-25.9	37	073	1.2	067	3.2	0 0300	-7.9	*****	90	090	.6	092	2.5	0
0600	-21.2	*****	42	056	.9	042	3.8	0 0600	-10.9	-16.5	63	059	1.8	042	5.1	0 0600	-10.3	*****	90	360	.7	006	2.5	0
0900	-18.6	*****	39	076	.9	100	2.5	0 0900	-10.7	-12.5	87	078	.8	031	3.8	0 0900	-11.1	-12.3	91	093	1.5	113	4.4	0
1200	-16.8	-27.9	38	073	1.3	080	3.8	2 1200	-11.0	-13.6	81	044	1.1	042	2.5	1 1200	-12.9	-14.4	89	105	1.3	092	3.8	1
1500	-16.9	-28.3	37	065	1.4	060	3.8	0 1500	-10.2	-14.1	73	066	1.2	066	3.8	0 1500	-8.4	-20.6	37	046	1.4	024	4.4	0
1800	-16.4	-28.1	36	079	1.6	056	3.8	0 1800	-10.3	-13.1	80	084	1.5	047	3.8	0 1800	-7.7	-23.2	28	051	1.7	057	5.1	0
2100	-15.2	-27.3	35	060	1.3	038	4.4	0 2100	-9.8	-12.0	84													

## R &amp; M CONSULTANTS, INC.

## SUSITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR GLACIER WEATHER STATION  
DATA TAKEN DURING December, 1983

DAY 19

DAY 20

DAY 21

HOUR	DEW	WIND	WIND GUST MAX.	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	MW		DEG C	DEG C	% DEG.	M/S	DEG C	DEG C	M/S	MW		DEG C	DEG C	% DEG.	M/S	MW		DEG C	DEG C	% DEG.	M/S	MW	
0300	-4.4	-23.0	22	077	1.8	067	4.4	0	0300	-6.1	-17.3	41	076	.9	045	3.2	0	0300	-6.7	*****	95	134	.5	134	1.3	0	
0600	-7.3	-24.1	25	049	1.0	080	3.8	0	0600	-6.4	-17.0	43	072	1.0	029	3.2	0	0600	-6.6	*****	94	013	.4	042	2.5	0	
0900	-6.6	-24.4	23	072	1.3	064	3.8	0	0900	-7.0	-16.7	46	053	.5	009	3.8	0	0900	-6.3	-7.4	92	061	.8	075	2.5	0	
1200	-5.7	-21.8	27	062	1.4	094	3.2	2	1200	-11.2	-15.6	70	034	1.4	080	4.4	1	1200	-5.7	-6.7	93	155	.1	139	3.2	0	
1500	-3.5	-20.3	26	054	1.4	043	4.4	0	1500	-7.1	-9.5	83	090	1.1	125	4.4	0	1500	-6.3	*****	90	079	.4	063	2.5	0	
1800	-7.7	-21.0	34	062	1.0	043	3.8	0	1800	-6.1	-6.7	96	050	.9	098	4.4	0	1800	-6.1	-7.6	89	056	.8	025	2.5	0	
2100	-4.5	-19.2	31	056	1.3	045	5.1	0	2100	-6.1	-6.8	95	082	1.0	092	3.2	0	2100	-4.9	-7.5	82	077	1.3	102	3.2	0	
2400	-5.7	-19.2	34	077	.7	109	5.1	0	2400	-5.9	*****	94	092	.6	132	2.5	0	2400	-5.1	*****	82	059	.8	024	2.5	0	

DAY 22

DAY 23

DAY 24

HOUR	DEW	WIND	WIND GUST MAX.	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	MW		DEG C	DEG C	% DEG.	M/S	DEG C	DEG C	M/S	MW		DEG C	DEG C	% DEG.	M/S	MW		DEG C	DEG C	% DEG.	M/S	MW	
0300	-3.7	-8.0	72	056	.9	084	2.5	0	0300	1.6	-11.3	38	074	1.2	055	2.5	0	0300	1.6	-20.2	18	077	1.5	077	2.5	0	
0600	-4.6	****	74	059	.6	026	2.5	0	0600	2.3	-11.7	35	053	1.1	032	3.2	0	0600	.2	-20.8	19	061	1.8	044	3.8	0	
0900	-2.1	****	58	073	.4	343	2.5	0	0900	1.3	-13.0	34	057	1.4	035	3.2	0	0900	.3	-21.3	18	058	2.1	048	4.4	0	
1200	-.5	-11.4	44	054	.8	044	2.5	1	1200	1.8	-14.9	28	071	1.2	052	2.5	1	1200	-.5	-21.3	19	062	1.6	062	4.4	2	
1500	0.0	****	41	075	.7	081	1.9	0	1500	.7	-15.4	29	044	1.5	035	4.4	0	1500	.2	-20.8	19	090	1.4	106	5.1	1	
1800	-.3	****	44	080	.7	077	1.9	0	1800	2.6	-15.6	25	059	1.7	062	4.4	0	1800	-.6	-20.3	21	124	2.8	103	8.3	0	
2100	-.3	****	44	066	1.0	061	2.5	0	2100	1.9	-17.6	22	065	1.4	055	3.8	0	2100	-2.3	-22.3	20	080	2.8	094	7.0	0	
2400	1.8	-10.8	39	067	1.3	068	3.2	0	2400	2.1	-18.6	20	057	1.7	034	5.1	0	2400	.6	-26.6	11	099	3.1	093	7.0	0	

DAY 25

DAY 26

DAY 27

HOUR	DEW	WIND	WIND GUST MAX.	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	MW		DEG C	DEG C	% DEG.	M/S	DEG C	DEG C	M/S	MW		DEG C	DEG C	% DEG.	M/S	MW		DEG C	DEG C	% DEG.	M/S	MW	
0300	-.2	-24.5	14	089	3.0	101	7.6	0	0300	.9	-25.4	12	074	2.7	076	6.3	0	0300	-2.6	-21.5	22	060	1.5	073	3.8	0	
0600	-3.3	-20.6	25	069	1.7	076	7.0	0	0600	0.0	-26.1	12	077	1.4	089	4.4	0	0600	-3.5	-22.7	21	064	1.4	039	3.8	0	
0900	.5	-16.5	27	061	2.3	099	12.7	0	0900	-.3	-27.3	11	072	1.9	077	4.4	0	0900	-4.1	-23.8	20	081	1.6	085	3.2	0	
1200	1.7	-18.4	21	117	4.4	115	11.4	2	1200	-.6	-28.6	10	068	1.8	057	5.1	2	1200	-4.4	-24.0	20	071	1.1	057	2.5	2	
1500	-.9	-21.1	20	092	2.5	110	10.8	0	1500	-.7	-28.7	10	068	1.6	071	3.8	1	1500	-5.0	-24.2	21	069	1.2	065			

## R &amp; M CONSULTANTS, INC.

## SUSITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR GLACIER WEATHER STATION  
DATA TAKEN DURING December, 1983

DAY 28

DAY 29

DAY 30

HOUR	DEW	WIND	WIND GUST MAX.	POINT	NDNG TEMP.	RH	DIR.	SPD.	DIR.	GUST	RAD	POINT	NDNG TEMP.	RH	DIR.	SPD.	DIR.	GUST	RAD	POINT	NDNG TEMP.	RH	DIR.	SPD.	DIR.	GUST	RAD								
	DEG C	DEG C	% DEG.	M/S	DEG C	M/S	MW		DEG C	DEG C	% DEG.	M/S	DEG C	M/S	MW		DEG C	DEG C	% DEG.	M/S	DEG C	DEG C	% DEG.	M/S	MW		DEG C	DEG C	% DEG.	M/S	DEG C	DEG C	% DEG.	M/S	MW
0300	-6.7	-25.4	21	062	1.3	033	3.2	0	0300	-8.9	-24.2	28	078	1.3	101	2.5	0	0300	-11.4	-25.6	30	069	1.2	039	3.2	0									
0600	-6.7	-25.4	21	065	1.1	052	2.5	0	0600	-9.2	-24.1	29	075	1.2	089	1.9	0	0600	-10.4	-24.8	30	053	1.3	032	3.2	0									
0900	-7.0	-25.2	22	063	1.3	100	3.2	0	0900	-9.5	-23.6	31	086	1.5	107	3.2	0	0900	-11.2	-25.1	31	081	1.4	055	3.8	0									
1200	-7.6	-25.7	22	050	1.2	064	2.5	2	1200	-10.0	-23.7	32	059	1.4	037	3.2	2	1200	-10.9	-25.2	30	063	1.6	057	4.4	2									
1500	-8.1	****	23	075	1.2	093	2.5	0	1500	-10.1	-23.4	33	073	1.3	064	1.9	0	1500	-11.5	-25.4	31	071	1.1	052	3.2	0									
1800	-8.0	-23.4	28	069	1.3	039	2.5	0	1800	-10.1	-23.8	32	054	1.2	027	2.5	0	1800	-11.7	-24.9	33	055	.9	106	2.5	0									
2100	-8.4	-23.4	29	080	1.5	070	3.8	0	2100	-9.6	-24.4	29	075	1.3	079	2.5	0	2100	-11.0	-23.9	34	088	.8	084	2.5	0									
2400	-9.2	-23.7	30	076	1.3	048	2.5	0	2400	-9.2	-24.5	28	092	1.4	097	2.5	0	2400	-11.3	****	35	074	1.1	047	3.2	0									

DAY 31

HOUR	DEW	WIND	WIND GUST MAX.	POINT	NDNG TEMP.	RH	DIR.	SPD.	DIR.	GUST	RAD																		
	DEG C	DEG C	% DEG.	M/S	DEG C	M/S	MW		DEG C	DEG C	% DEG.	M/S		DEG C	DEG C	% DEG.	M/S	DEG C	DEG C	% DEG.	M/S		DEG C	DEG C	% DEG.	M/S			
0300	-12.4	-22.0	45	106	.9	066	2.5	0																					
0600	-12.6	-16.6	72	101	.8	044	2.5	0																					
0900	-12.2	****	77	110	.7	024	2.5	0																					
1200	-12.0	-15.7	74	117	1.0	128	2.5	1																					
1500	-10.5	-16.0	64	096	1.2	058	3.8	0																					
1800	-9.0	-16.6	54	048	1.1	021	3.2	0																					
2100	-9.2	****	50	074	1.0	092	2.5	0																					
2400	-9.6	-17.0	51	071	1.5	075	3.2	0																					

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

## R &amp; M CONSULTANTS, INC.

## SUSITNA HYDROELECTRIC PROJECT

MONTHLY SUMMARY FOR GLACIER WEATHER STATION  
DATA TAKEN DURING December, 1983

DAY	MAX. TEMP., DEG C			MIN. TEMP., DEG C			MEAN TEMP., DEG C			RES. WIND DIR.	RES. WIND SPD. M/S	Avg. WIND DIR.	MAX. WIND SPD. M/S	GUST P/VAL	MAX. RH %	MAX. DP DEG C	DAY'S PRECIP MM	SOLAR ENERGY WH/SQM	DAY
	TEMP., DEG C	TEMP., DEG C	TEMP., DEG C	DIR.	SPD. M/S	DIR.	SPD. M/S	DIR.	SPD. M/S	DIR.	RH %	DP DEG C	MM	WH/SQM					
1	.5	-4.1	-1.8	096	3.3	2.5	125	10.8	E	57	-8.8	****	100	1					
2	-3.5	-7.5	-5.5	360	.7	.9	016	3.8	N	92	-6.7	****	35	2					
3	-7.5	-10.5	-9.0	051	.8	1.1	105	3.8	NNE	90	-10.1	****	40	3					
4	-6.5	-9.9	-8.2	093	1.0	1.2	093	4.4	E	81	-10.7	****	0	4					
5	-6.0	-8.4	-7.2	080	1.0	1.1	077	3.8	ESE	78	-10.4	****	15	5					
6	-6.5	-11.4	-9.0	043	1.4	1.7	028	6.3	NE	85	-10.2	****	25	6					
7	-4.2	-12.6	-8.4	066	.5	.6	123	2.5	ENE	63	-13.6	****	35	7					
8	-3.3	-11.8	-7.6	075	1.3	1.4	099	4.4	ENE	34	-20.0	****	55	8					
9	-11.8	-18.1	-15.0	068	1.3	1.4	068	5.1	E	26	-30.4	****	70	9					
10	-8.4	-18.1	-13.3	066	1.8	1.9	057	5.1	ENE	33	-25.1	****	75	10					
11	-7.6	-11.3	-9.5	064	1.7	1.8	036	5.7	ENE	48	-18.8	****	58	11					
12	-10.4	-15.0	-12.7	063	1.6	1.7	062	5.7	ENE	83	-14.6	****	40	12					
13	-9.2	-13.7	-11.5	076	1.1	1.3	028	3.8	E	68	-16.3	****	45	13					
14	-11.4	-18.5	-15.0	059	1.1	1.2	037	4.4	NE	74	-20.1	****	60	14					
15	-16.4	-20.3	-18.4	062	1.2	1.4	019	4.4	ENE	66	-23.6	****	65	15					
16	-13.6	-21.5	-17.6	074	1.3	1.4	038	4.4	E	38	-28.3	****	70	16					
17	-9.2	-15.3	-12.3	068	1.1	1.4	042	5.1	E	70	-15.8	****	50	17					
18	-5.5	-12.9	-9.2	070	1.2	1.4	057	5.1	E	55	-18.7	****	30	18					
19	-2.7	-8.7	-5.7	064	1.2	1.5	045	5.1	E	27	-22.2	****	45	19					
20	-3.3	-11.3	-7.3	067	.9	1.3	080	4.4	N	71	-11.7	****	20	20					
21	-4.3	-7.0	-5.7	069	.6	.9	139	3.2	ENE	88	-7.4	****	5	21					
22	2.1	-5.5	-1.7	066	.8	.9	068	3.2	ENE	52	-9.9	****	25	22					
23	3.5	.6	2.1	060	1.4	1.5	034	5.1	ENE	29	-14.5	****	50	23					
24	2.2	-2.5	-.2	085	2.0	2.3	103	8.3	ENE	19	-20.9	****	80	24					
25	4.5	-4.7	-.1	080	2.7	3.0	099	12.7	ENE	18	-22.7	****	75	25					
26	2.2	-2.7	-.3	069	1.8	1.8	076	6.3	ENE	12	-26.6	****	70	26					
27	-1.9	-6.3	-4.1	067	1.4	1.4	073	3.8	ENE	21	-23.5	****	65	27					
28	-5.3	-9.2	-7.3	068	1.2	1.3	070	3.8	ENE	24	-24.8	****	70	28					
29	-8.5	-10.4	-9.5	074	1.3	1.4	107	3.2	E	30	-23.9	****	55	29					
30	-9.7	-12.3	-11.0	069	1.2	1.3	057	4.4	NE	31	-25.0	****	70	30					
31	-8.6	-13.3	-11.0	088	1.0	1.2	058	3.8	ENE	59	-17.2	****	35	31					
MONTH	4.5	-21.5	-8.1	070	1.3	.8	099	12.7	ENE	48	-17.8	****	1525						

GUST VEL. AT MAX. GUST MINUS 2 INTERVALS 4.4

GUST VEL. AT MAX. GUST MINUS 1 INTERVAL 10.8

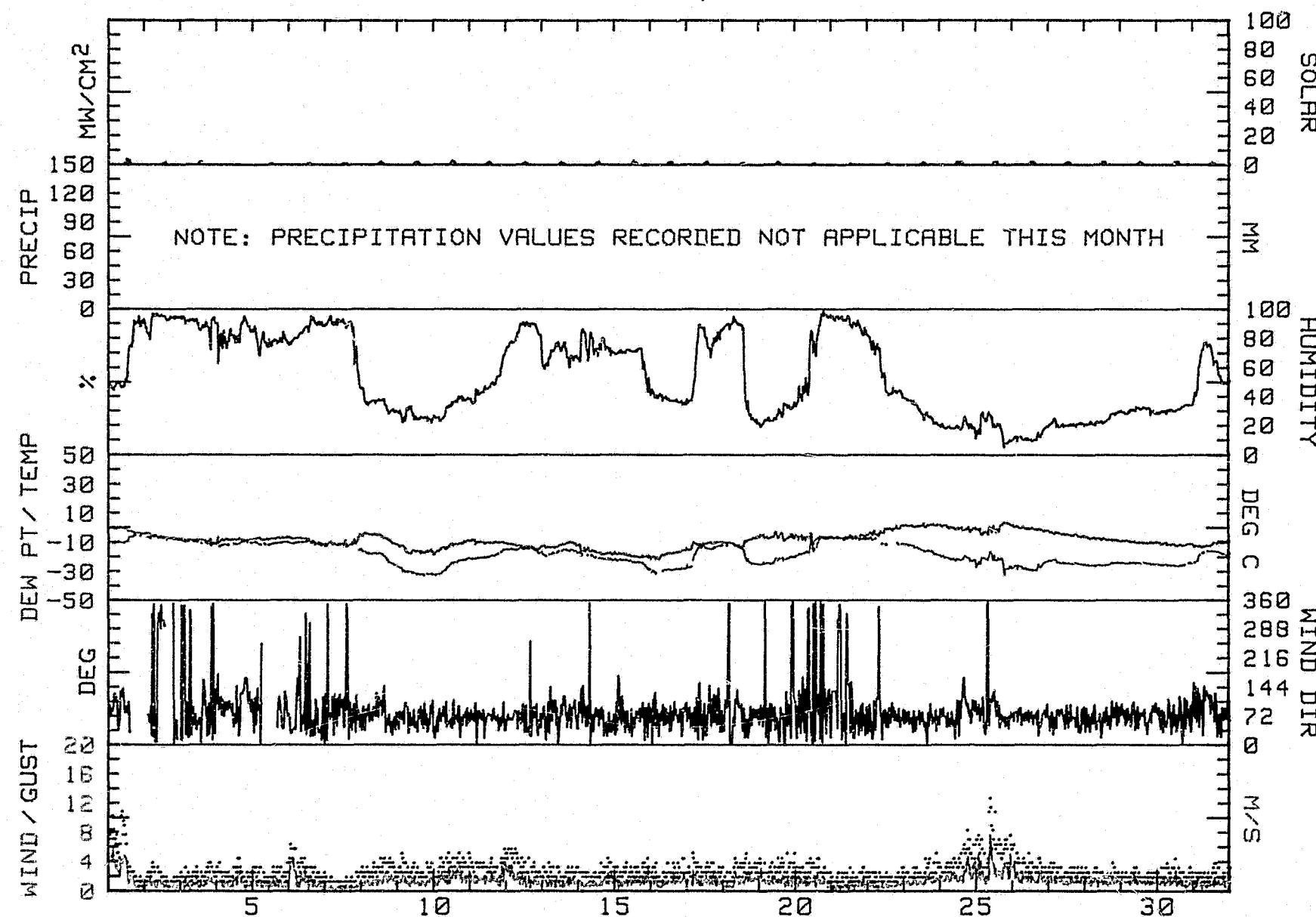
GUST VEL. AT MAX. GUST PLUS 1 INTERVAL 11.4

GUST VEL. AT MAX. GUST PLUS 2 INTERVALS 8.9

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 INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

R&M CONSULTANTS, INC.  
SUSITNA HYDROELECTRIC PROJECT  
GLACIER WEATHER STATION  
December, 1983



## R &amp; M CONSULTANTS, INC.

## SUSITNA HYDROELECTRIC PROJECT

WIND FREQUENCY SUMMARY FOR GLACIER WEATHER STATION  
DATA TAKEN DURING December, 1983

DIRECTION	VELOCITY (M/S)							TOTAL
	0-2	1-0	3-0	6-0	10-0	15-0	20-0	
	TO	TO	TO	TO	TO	TO	OR	
1-0	3-0	6-0	10-0	15-0	20-0	GREATER		
N	1.26	2.31	0.00	0.00	0.00	0.00	0.00	3.57
NNE	2.24	6.85	.35	0.00	0.00	0.00	0.00	9.44
NE	2.59	14.62	.77	0.00	0.00	0.00	0.00	17.97
ENE	4.55	22.73	1.33	0.00	0.00	0.00	0.00	28.60
E	4.13	16.71	1.26	.07	0.00	0.00	0.00	22.17
ESE	3.22	5.87	.91	.07	0.00	0.00	0.00	10.07
SE	1.47	2.52	.35	0.00	0.00	0.00	0.00	4.34
SSE	.84	.42	0.00	0.00	0.00	0.00	0.00	1.26
S	.07	.07	0.00	0.00	0.00	0.00	0.00	.14
SSW	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SW	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
WSW	.21	0.00	0.00	0.00	0.00	0.00	0.00	.21
W	.14	0.00	0.00	0.00	0.00	0.00	0.00	.14
WNW	.14	.28	0.00	0.00	0.00	0.00	0.00	.42
NW	.14	.28	0.00	0.00	0.00	0.00	0.00	.42
NNW	.63	.56	0.00	0.00	0.00	0.00	0.00	1.19
CALM								.07
TOTAL	21.61	73.22	4.97	.14	0.00	0.00	0.00	100.00

NOTE: ALL FREQUENCIES ARE EXPRESSED IN PERCENT

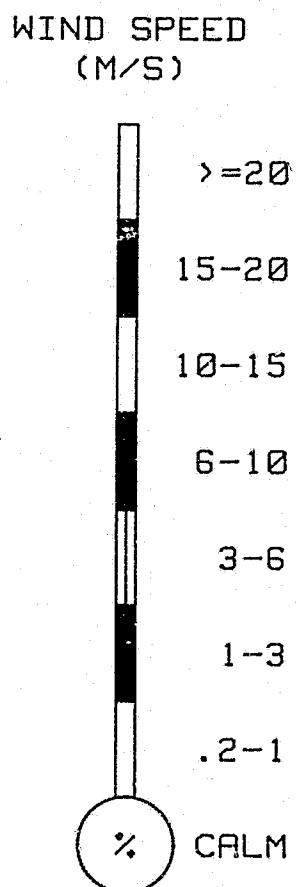
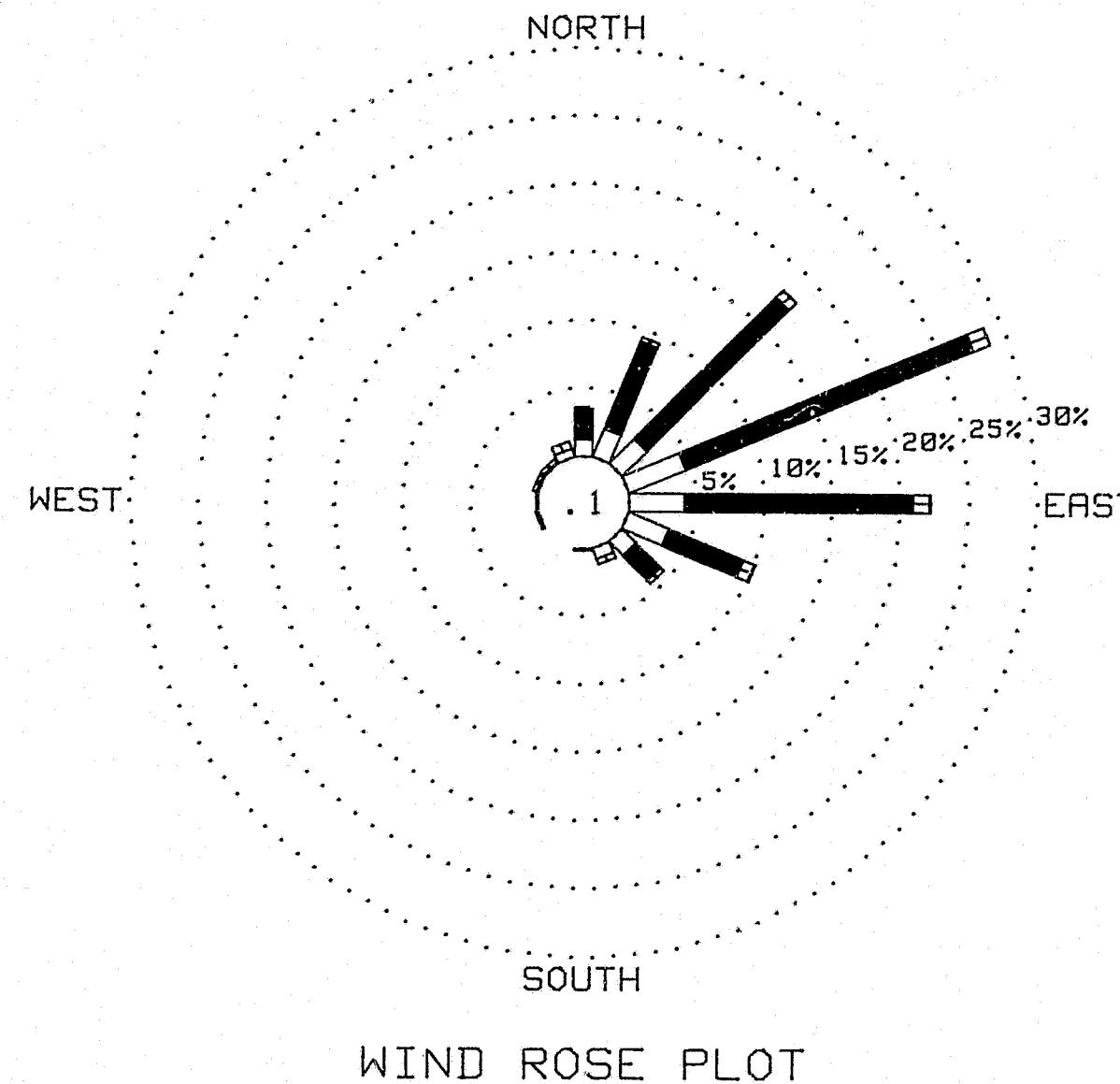
1430 VALID WIND OBSERVATIONS USED TO DEVELOP FREQUENCY SUMMARY

1488 WIND OBSERVATIONS WOULD HAVE BEEN CORRECT FOR 30 MINUTE DATA.

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

00276

R&M CONSULTANTS, INC.  
SUSITNA HYDROELECTRIC PROJECT  
GLACIER WEATHER STATION  
December, 1983



## R &amp; M CONSULTANTS, INC.

## SUSITNA HYDROELECTRIC PROJECT

HOURLY SOLAR RADIATION SUMMARY FOR GLACIER WEATHER STATION  
DATA TAKEN DURING December, 1983

SOLAR RADIATION VALUES MEASURED IN MILLIWATTS PER SQUARE CENTIMETER

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	Avg
1	0	0	0	0	0	0	0	0	1	3	3	3	1	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	1	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	2	2	1	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	***
5	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	1	2	2	2	2	1	1	1	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0	0	1	2	2	2	2	1	1	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0	0	0	1	3	2	2	2	2	1	1	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0	0	0	1	2	2	2	1	0	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0	1	1	2	1	1	0	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0	0	0	2	2	1	1	1	0	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0	0	1	2	2	2	2	1	1	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0	1	2	3	2	2	2	1	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	1	2	2	2	2	2	1	1	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	1	1	2	2	2	2	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0	0	1	2	2	1	1	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0
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
22	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0	0	0	0	1	1	2	1	1	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	2	2	2	2	2	1	0	0	0	0	0	0	0	0	0
25	0	0	0	0	0	0	0	0	0	0	1	2	2	2	2	2	1	0	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0	0	0	0	1	2	2	2	2	2	1	0	0	0	0	0	0	0	0
27	0	0	0	0	0	0	0	0	0	0	1	2	2	2	2	2	1	0	0	0	0	0	0	0	0
28	0	0	0	0	0	0	0	0	0	0	1	2	2	2	2	2	1	0	0	0	0	0	0	0	0
29	0	0	0	0	0	0	0	0	0	0	1	2	2	2	2	1	1	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	1	2	2	2	2	1	1	0	0	0	0	0	0	0	0
31	0	0	0	0	0	0	0	0	0	0	0	0	1	2	2	1	0	0	0	0	0	0	0	0	0

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

## R &amp; M CONSULTANTS, INC.

## SUSITNA HYDROELECTRIC PROJECT

OBSERVATION SUMMARY FOR GLACIER WEATHER STATION  
DATA TAKEN DURING December, 1983

PARAMETER	NUMBER OF USABLE OBSERVATIONS	PERCENT OF TOTAL OBSERVATIONS
TEMPERATURE	1488	100
WIND SPEED	1488	100
WIND DIRECTION	1430	96
PEAK GUST	1488	100
RELATIVE HUMIDITY	1142	77
PRECIPITATION	0	0
SOLAR RADIATION	1488	100
DEW POINT	1142	77

THERE ARE 1488 POSSIBLE OBSERVATIONS THIS MONTH FOR EACH PARAMETER.  
THE DATA RECORDING INTERVAL IS 30 MINUTES.

THE FOLLOWING ADJUSTMENTS HAVE BEEN MADE TO THIS MONTH'S DATA:

1. RH -12 RH Points
2. Solar -1 mW/cm<sup>2</sup>

Additional comments on this month's data:

1. Intermittent wind direction data lost due to frozen wind vane.

No precipitation data for January

(See INTERPRETATION OF DATA).

## R &amp; M CONSULTANTS, INC.

## SUSITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR GLACIER WEATHER STATION  
DATA TAKEN DURING January, 1984

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
DEG C	DEG C	%	M/S	DEG C	%	M/S	DEG C	DEG C	%	M/S	DEG C	%
			MW			MW				MW		MW

0300	-7.6	-12.5	68	046	1.7	058	3.2	0	0300	-2.6	****	94	079	1.0	059	3.2	0	0300	-3.3	-5.8	83	118	3.2	125	10.2	0
0600	-6.7	-12.4	64	056	1.3	064	2.5	0	0600	-3.1	****	95	137	.8	088	2.5	0	0600	-3.6	-7.0	77	154	4.6	149	15.2	0
0900	-5.3	-12.5	57	069	1.5	061	5.1	0	0900	-3.0	-6.3	78	091	2.7	083	6.3	0	0900	-4.4	-6.7	84	133	5.7	143	15.2	0
1200	-3.7	-7.5	75	062	1.4	030	5.1	1	1200	-4.3	-4.7	97	347	.7	089	3.8	1	1200	-3.3	-7.3	74	124	3.1	105	9.5	1
1500	-2.9	-4.8	87	042	1.8	051	4.4	0	1500	-4.1	-5.5	90	026	1.7	051	3.8	1	1500	-4.6	-6.8	85	093	3.3	090	6.3	0
1800	-2.5	-3.8	91	051	1.6	040	3.2	0	1800	-3.6	-7.0	77	102	1.0	089	8.3	0	1800	-3.6	-10.0	61	094	4.7	090	9.5	0
2100	-2.9	-3.2	98	067	2.2	085	6.3	0	2100	-4.4	-6.1	88	094	.5	110	7.6	0	2100	-3.8	-15.2	41	081	4.5	089	10.2	0
2400	-2.2	-4.1	87	022	1.4	000	3.2	0	2400	-3.7	-7.3	76	097	4.4	107	8.3	0	2400	-5.1	-10.1	68	099	4.0	104	7.6	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
DEG C	DEG C	%	M/S	DEG C	%	M/S	DEG C	DEG C	%	M/S	DEG C	%
			MW			MW				MW		MW

0300	-6.7	-7.8	92	033	1.0	046	3.2	0	0300	-22.9	-27.3	67	074	1.1	102	4.4	0	0300	-17.2	****	80	264	.9	271	5.1	0
0600	-8.9	-10.3	90	023	1.9	006	5.1	0	0600	-18.9	-31.9	31	066	1.8	037	4.4	0	0600	-16.3	-21.0	67	094	1.7	037	5.7	0
0900	-17.5	-19.7	83	079	1.6	098	7.0	0	0900	-16.9	-32.3	25	046	2.2	034	4.4	0	0900	-16.2	-24.0	51	082	1.6	076	4.4	0
1200	-21.1	-23.8	79	030	2.1	025	12.7	2	1200	-17.7	-33.0	25	049	1.4	089	5.1	2	1200	-15.4	-24.0	48	074	1.4	079	4.4	1
1500	-21.5	-24.3	78	041	1.9	104	5.7	0	1500	-18.5	-23.1	67	062	1.4	020	3.8	0	1500	-15.9	-19.5	74	107	2.1	100	5.1	0
1800	-22.6	-25.5	77	007	2.2	016	4.4	0	1800	-17.3	-23.4	59	095	2.2	098	5.1	0	1800	-14.1	-17.6	75	037	1.4	035	4.4	0
2100	-22.3	-25.2	77	030	1.6	018	4.4	0	2100	-16.7	****	78	072	1.0	350	3.2	0	2100	-13.8	-16.4	81	057	.9	051	2.5	0
2400	-21.3	-25.9	66	039	1.5	016	5.1	0	2400	-15.2	-19.9	67	083	.9	056	4.4	0	2400	-12.1	****	72	057	.6	021	2.5	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
DEG C	DEG C	%	M/S	DEG C	%	M/S	DEG C	DEG C	%	M/S	DEG C	%
			MW			MW				MW		MW

0300	-11.1	-15.1	72	063	1.5	052	3.8	0	0300	-5.8	-22.8	25	067	2.0	054	5.7	0	0300	-3.9	-20.7	26	061	1.4	071	3.8	0
0600	-11.9	-16.6	68	057	1.0	075	2.5	0	0600	-5.1	-22.6	24	083	1.8	061	3.8	0	0600	-5.7	-21.8	27	071	1.9	076	4.4	0
0900	-11.7	-15.7	72	072	1.3	071	3.8	0	0900	-3.1	-21.9	22	063	1.5	049	4.4	0	0900	-1.1	-22.4	18	073	2.3	071	6.3	0
1200	-8.2	****	60	064	1.2	048	4.4	1	1200	-7.2	****	30	038	1.1	049	3.2	2	1200	-3.8	-22.5	22	068	1.8	098	7.0	2
1500	-7.7	-17.1	47	071	1.2	052	3.2	0	1500	-5.2	-21.8	26	063	1.2	050	3.8	1	1500	-5.6	-20.2	31	086	1.5	045	7.0	1
1800	-8.1	-21.0	35	071	1.2	075	2.5	0	1800	-5.4	-21.2	28	082	1.5	080	2.5	0	1800	-6.0	-19.5	34	085	1.4	102	4.4	0
2100	-6.7	-21.1	31	065	1.3	043	3.8	0	2100	-5.8	-20.7	30	047	1.4	051	3.2	0	2100	-4.8	-7.7	80	059	1.5	030	4.4	0
2400	-6.0	-21.7	28	072	1.6	077	4.4	0	2400	-4.0	-20.4	27	071	1.5	100	3.8	0	2400	-3.3	-5.0	88	070	1.7	065	5.1	0

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

## R &amp; M CONSULTANTS, INC.

## SUSITNA HYDRO ELECTRIC PROJECT

THREE HOUR SUMMARY FOR GLACIER WEATHER STATION  
DATA TAKEN DURING January, 1984

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
DEG C	DEG C	%	DEG C	DEG C	%	DEG C	DEG C	DIR.	SPD.	DIR.	DIR.	GUST RAD
			M/S	M/S	MW			M/S	M/S	M/S	M/S	MW

0300	-3.0	-9.4	61	090	2.6	089	4.4	0 0300	-3.8	-4.9	92	107	3.8	116	9.5	0 0300	-5.0	-8.1	79	093	6.1	093	10.8	0
0600	-3.1	-10.4	57	076	1.6	058	5.1	0 0600	-1.5	-8.2	60	076	2.7	097	8.3	0 0600	-4.3	-6.3	86	108	7.7	121	12.7	0
0900	-2.0	-9.4	57	081	4.0	101	10.2	0 0900	-3.8	-6.4	82	104	6.4	109	13.3	0 0900	-2.7	-5.2	83	098	7.3	096	12.7	0
1200	-5.0	-7.9	80	169	3.2	130	10.8	4 1200	-6.8	-7.1	98	155	4.6	172	15.9	2 1200	-1.8	-4.8	80	115	10.1	116	16.5	1
1500	-5.3	-6.6	91	315	1.0	270	7.0	0 1500	-6.5	-11.0	70	078	1.5	104	7.6	1 1500	-1.3	-5.3	74	117	9.4	121	19.0	0
1800	-5.6	-7.3	88	101	3.6	083	10.2	0 1800	-6.3	-12.0	64	094	5.8	109	10.8	0 1800	-5	-5.1	71	121	11.0	120	17.8	0
2100	-1.6	-7.5	64	115	6.1	106	15.2	0 2100	-5.9	-9.6	75	100	6.8	125	15.9	0 2100	.6	-5.8	62	109	8.7	118	16.5	0
2400	-1.5	-8.0	61	109	5.2	110	12.7	0 2400	-6.0	-8.4	83	126	4.3	155	10.8	0 2400	.1	-6.1	63	114	8.2	118	19.7	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.	GUST	RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST
DEG C	DEG C	%	DEG C	DEG C	%	DEG C	DEG C	DIR.	SPD.	DIR.	DIR.	GUST RAD
			M/S	M/S	MW			M/S	M/S	M/S	M/S	MW

0300	-1.6	-3.2	89	116	5.5	100	15.9	0 0300	-3.7	-7.8	73	075	1.4	089	3.2	0 0300	-4.5	*****	95	335	1.3	340	3.2	0
0600	-1.6	-2.6	93	205	4.0	216	14.6	0 0600	-2.1	-12.5	45	072	1.8	060	3.8	0 0600	-6.8	-7.8	93	037	1.5	355	3.8	0
0900	-2.5	-3.6	92	190	3.9	180	12.7	0 0900	-1.8	-12.0	46	051	1.9	084	3.8	0 0900	-6.4	-7.2	94	066	1.2	087	3.2	0
1200	-1.8	-4.2	84	159	5.9	148	15.2	2 1200	-1.8	-6.3	71	078	1.4	084	3.2	2 1200	-4.1	-8.0	74	051	1.3	016	3.8	2
1500	-3.3	-3.9	96	196	2.5	161	10.2	0 1500	-.6	-5.2	71	075	1.5	053	3.2	1 1500	-3.2	-11.7	52	065	1.4	071	3.2	1
1800	-3.8	-4.4	96	245	2.4	230	9.5	0 1800	-1.6	*****	93	068	1.4	085	3.2	0 1800	-2.8	-12.3	48	064	1.4	092	3.8	0
2100	-4.5	-5.1	96	068	1.2	081	3.2	0 2100	-2.2	-2.5	98	012	.5	020	3.8	0 2100	-3.3	*****	41	071	1.4	060	3.2	0
2400	-5.0	-6.9	87	065	1.5	056	4.4	0 2400	-3.8	-4.2	97	287	1.7	265	4.4	0 2400	-3.4	-15.8	38	049	1.2	039	2.5	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
DEG C	DEG C	%	DEG C	DEG C	%	DEG C	DEG C	DIR.	SPD.	DIR.	DIR.	GUST RAD
			M/S	M/S	MW			M/S	M/S	M/S	M/S	MW

0300	-3.3	-16.4	36	035	1.5	039	3.8	0 0300	-4.2	-16.9	37	066	1.5	030	3.8	0 0300	-10.6	-13.4	80	049	1.5	098	4.4	0
0600	-4.0	-15.1	42	064	1.1	032	1.9	0 0600	-5.3	-16.9	40	042	1.0	039	3.2	0 0600	-9.8	*****	91	018	.5	337	1.9	0
0900	-4.1	-15.2	42	086	1.7	058	3.8	0 0900	-6.1	-16.5	44	060	1.2	087	3.8	0 0900	-10.1	-11.6	89	058	1.0	102	3.2	0
1200	-4.8	-16.8	39	067	1.5	032	3.8	3 1200	-4.9	-14.8	46	036	.9	081	3.8	3 1200	-10.9	*****	81	059	.6	054	1.9	4
1500	-4.6	-16.9	38	056	1.3	050	3.8	1 1500	-8.2	*****	58	053	1.2	057	3.8	1 1500	-10.7	*****	83	086	1.1	055	2.5	1
1800	-4.4	-16.7	38	083	1.3	110	3.2	0 1800	-6.7	-14.7	53	071	1.6	094	5.1	0 1800	-11.9	-13.9	85	088	.9	037	3.2	0
2100	-2.5	-16.0	35	061	2.2	071	6.3	0 2100	-7.5	-15.2	54	051	1.4	064	3.2	0 2100	-13.0	*****	87	061	.8	096	3.2	0
2400	-4.8	-16.8	39	066	1.6	079	4.4	0 2400	-7.7	-14.7	57	078	1.3	065	3.2	0 2400	-13.3	*****	87	012	.7	006	1.9	0

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

## R &amp; M CONSULTANTS, INC.

## SUSITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR GLACIER WEATHER STATION  
DATA TAKEN DURING January, 1984

DAY 19

DAY 20

DAY 21

HOUR	DEW	WIND	WIND GUST MAX.	POINT	NDNG	TEMP.	RH	DIR.	SPD.	DIR.	GUST	RAD.	POINT	NDNG	TEMP.	RH	DIR.	SPD.	DIR.	GUST	RAD.	DEG C	DEG C	% DEG.	M/S	MW	DEG C	DEG C	% DEG.	M/S	MW
0300	-15.0	-17.3	83	023	1.6	083	3.8	0	0300	-10.4	-17.1	58	071	1.5	066	4.4	0	0300	-16.0	-19.7	73	082	1.7	066	4.4	0					
0600	-14.3	-16.8	81	040	1.3	019	3.8	0	0600	-12.1	-18.3	60	071	2.1	061	4.4	0	0600	-16.3	-19.8	74	069	1.7	063	3.8	0					
0900	-13.3	*****	78	054	.8	102	2.5	0	0900	-12.1	-18.5	59	071	1.4	095	3.8	0	0900	-15.9	-19.6	73	072	1.1	047	2.5	0					
1200	-11.6	-15.6	72	027	.9	337	2.5	3	1200	-11.8	-18.2	59	076	1.5	075	3.2	3	1200	-16.0	-19.7	73	085	1.6	079	4.4	3					
1500	-15.1	*****	77	103	.9	111	2.5	1	1500	-12.8	-18.5	62	080	1.1	071	3.8	2	1500	-17.5	*****	76	353	.2	063	1.9	1					
1800	-12.2	-16.2	72	032	.2	185	3.2	0	1800	-13.3	-18.1	67	043	1.8	051	4.4	0	1800	-19.2	-22.6	74	041	1.2	010	4.4	0					
2100	-11.2	-16.6	64	078	1.2	082	3.8	0	2100	-14.0	-18.4	69	042	.7	022	3.2	0	2100	-19.5	-23.9	68	043	1.0	024	3.2	0					
2400	-10.7	-16.9	60	059	1.2	075	3.2	0	2400	-14.8	-19.0	70	070	1.2	050	3.8	0	2400	-21.4	-27.3	59	001	1.4	316	5.7	0					

DAY 22

DAY 23

DAY 24

HOUR	DEW	WIND	WIND GUST MAX.	POINT	NDNG	TEMP.	RH	DIR.	SPD.	DIR.	GUST	RAD.	POINT	NDNG	TEMP.	RH	DIR.	SPD.	DIR.	GUST	RAD.	DEG C	DEG C	% DEG.	M/S	MW	DEG C	DEG C	% DEG.	M/S	MW
0300	-22.6	-29.6	53	048	.9	112	3.2	0	0300	-24.3	-33.4	43	101	3.5	109	7.6	0	0300	-23.6	-33.0	42	070	1.2	076	2.5	0					
0600	-22.7	-30.3	50	064	1.3	065	4.4	0	0600	-26.0	-34.2	46	074	1.9	093	4.4	0	0600	-23.4	-33.0	41	060	1.3	033	3.2	0					
0900	-23.1	-31.8	45	124	1.7	116	4.4	0	0900	-27.8	-35.0	50	038	1.5	015	5.7	0	0900	-24.3	-33.9	41	048	1.2	030	3.2	0					
1200	-22.9	-32.3	42	117	2.2	123	5.7	3	1200	-24.8	-33.8	43	066	1.6	067	3.8	4	1200	-22.7	*****	34	067	1.1	060	2.5	4					
1500	-23.4	-32.8	42	122	2.9	134	8.3	2	1500	-24.4	-33.0	45	041	1.2	008	3.8	2	1500	-22.4	-35.0	31	062	1.1	028	3.2	2					
1800	-23.6	-33.0	42	100	2.5	115	9.5	0	1800	-25.3	-33.8	45	063	1.6	063	4.4	0	1800	-23.0	-35.5	31	059	1.1	066	3.2	0					
2100	-23.6	-33.2	41	109	3.3	126	8.3	0	2100	-24.3	-32.9	45	048	1.6	066	3.8	0	2100	-22.1	-34.7	31	058	1.1	033	2.5	0					
2400	-24.7	-33.5	44	104	3.9	101	7.0	0	2400	-24.3	-32.9	45	064	1.3	056	3.8	0	2400	-23.4	*****	31	059	.9	095	2.5	0					

DAY 25

DAY 26

DAY 27

HOUR	DEW	WIND	WIND GUST MAX.	POINT	NDNG	TEMP.	RH	DIR.	SPD.	DIR.	GUST	RAD.	POINT	NDNG	TEMP.	RH	DIR.	SPD.	DIR.	GUST	RAD.	DEG C	DEG C	% DEG.	M/S	MW	DEG C	DEG C	% DEG.	M/S	MW
0300	-24.4	*****	32	073	1.2	033	3.2	0	0300	-14.5	-29.1	28	055	1.6	089	5.1	0	0300	-14.7	-25.1	41	070	1.5	073	4.4	0					
0600	-24.4	-36.4	32	060	1.1	061	4.4	0	0600	-15.2	-19.3	71	074	1.1	064	3.2	0	0600	-14.2	-29.2	27	067	2.0	081	4.4	0					
0900	-23.9	-35.7	33	067	1.1	092	3.2	0	0900	-16.2	*****	86	092	.8	115	2.5	0	0900	-13.2	-37.5	11	064	2.1	056	4.4	1					
1200	-21.2	-34.2	30	067	1.4	045	3.8	4	1200	-14.2	*****	77	079	.5	042	2.5	6	1200	-11.2	-32.0	16	072	1.8	059	5.1	7					
1500	-20.7	-33.8	30	076	1.4	069	3.8	2	1500	-15.2	*****	78	076	.6	112	1.9	3	1500	-10.7	-31.6	16	066	1.6	050	4.4	5					
1800	-20.2	-33.7	29	072	1.5	050	3.8	0	1800	-16.3	-18.7	82	063	.6	113	2.5	0	1800	-10.8	-33.9	13	081	1.2	068	2.5	0					
2100	-18.5	-33.7	25	058	1.6	038	3.8	0	2100	-17.7	-19.8	84	068	1.0	036	2.5	0	2100	-12.5	*****	20	037	.8	011	2.5	0					
2400	-16.0	-32.0	24	061	1.8	079	4.4	0	2400	-16.4	-20.4	71	072	1.2	078	2.5	0	2400	-15.5	-28.2	33	111	.								

## R &amp; M CONSULTANTS, INC.

## SUSITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR GLACIER WEATHER STATION  
DATA TAKEN DURING January, 1984

DAY 28

DAY 29

DAY 30

HOUR	DEW	WIND	WIND GUST MAX.	POINT	NDNG TEMP.	RH	DIR.	SPD.	DIR.	GUST	RAD	POINT	NDNG TEMP.	RH	DIR.	SPD.	DIR.	GUST	RAD	POINT	NDNG TEMP.	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	MW		DEG C	DEG C	%	DEG.	M/S	MW	
0300	-16.3	-26.6	41	040	1.3	088	2.5	0	0300	-8.4	-12.7	71	082	5.5	080	10.8	0	0300	-6.2	-6.9	95	157	3.5	135	15.2	0						
0600	-18.3	-27.1	46	054	1.3	040	3.8	0	0600	-7.5	-11.5	73	089	6.4	090	12.1	0	0600	-7.0	****	95	256	2.8	255	6.3	0						
0900	-19.8	-29.0	44	062	1.1	041	2.5	0	0900	-5.8	-10.7	68	107	7.7	119	13.3	0	0900	-7.3	-8.0	95	213	.3	198	3.2	0						
1200	-19.0	-30.7	35	079	1.5	104	3.8	7	1200	-6.6	-9.0	83	186	1.1	151	10.8	3	1200	-6.7	****	94	119	.7	095	2.5	3						
1500	-16.0	-33.3	21	065	1.9	062	5.1	3	1500	-6.4	-9.1	81	032	.8	060	3.2	3	1500	-6.6	****	85	075	.8	071	2.5	1						
1800	-15.3	-31.8	23	079	1.8	058	5.1	0	1800	-6.1	-9.3	78	148	1.3	166	4.4	0	1800	-7.5	****	93	352	.7	066	1.9	0						
2100	-12.7	-18.3	63	062	1.7	068	5.7	0	2100	-6.7	-7.5	94	049	.8	104	4.4	0	2100	-7.7	****	92	093	.5	085	1.9	0						
2400	-9.9	-14.0	72	079	3.6	087	8.3	0	2400	-4.9	-7.8	80	107	4.1	129	13.3	0	2400	-7.6	****	94	063	.3	084	1.3	0						

DAY 31

HOUR	DEW	WIND	WIND GUST MAX.	POINT	NDNG TEMP.	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	MW			
0300	-8.4	-9.4	93	202	.5	166	3.8	0																			
0600	-9.4	-10.3	93	263	1.4	221	3.8	0																			
0900	-10.0	****	94	305	.8	288	1.9	0																			
1200	-10.4	-11.3	93	305	.9	301	2.5	2																			
1500	-11.1	****	92	258	1.9	246	4.4	2																			
1800	-12.8	-14.0	91	242	.9	234	3.2	0																			
2100	-14.1	****	87	318	1.4	317	3.2	0																			
2400	-15.2	****	86	319	1.1	319	1.9	0																			

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

## R &amp; M CONSULTANTS, INC.

## SUSIETNA HYDROELECTRIC PROJECT

MONTHLY SUMMARY FOR GLACIER WEATHER STATION  
DATA TAKEN DURING January, 1984

DAY	TEMP.			RES.		RES.		AVG.	MAX.	MAX.	MEAN			DAY'S	
	MAX. DEG C	MIN. DEG C	MEAN DEG C	WIND DIR.	WIND SPD. M/S	WIND DIR. M/S	WIND DIR. M/S	GUST DIR. M/S	GUST P'VAL DIR. Z	P'VAL RH	MEAN DEG C	MEAN MM	SOLAR WH/SQM	ENERGY DAY	
1	-1.2	-8.9	-5.1	052	1.6	1.8	085	6.3	NE	76	-8.3	****	20	1	
2	-2.2	-5.0	-3.6	085	1.3	2.1	089	8.3	E	88	-5.4	****	50	2	
3	-2.9	-5.1	-4.0	113	3.8	4.4	149	15.2	E	71	-8.7	****	30	3	
4	-5.5	-22.8	-14.2	034	1.6	2.2	025	12.7	NNE	80	-19.6	****	50	4	
5	-15.2	-23.2	-19.2	060	1.4	1.7	089	5.1	ENE	52	-26.8	****	80	5	
6	-12.1	-17.2	-14.7	077	1.0	1.6	037	5.7	E	67	-20.6	****	20	6	
7	-5.4	-12.3	-8.9	067	1.3	1.4	048	4.4	ENE	51	-17.7	****	40	7	
8	-3.1	-7.2	-5.2	066	1.4	1.6	054	5.7	ENE	26	-21.8	****	80	8	
9	-1.1	-7.3	-4.2	071	1.7	1.8	098	7.0	ENE	37	-18.2	****	95	9	
10	.9	-6.3	-3.6	106	2.9	3.8	106	15.2	E	70	-8.3	****	90	10	
11	-.8	-7.1	-4.0	107	4.2	5.2	172	15.9	E	78	-8.3	****	95	11	
12	1.2	-5.8	-2.3	111	8.5	8.6	118	19.7	ESE	74	-6.1	****	40	12	
13	.2	-5.0	-2.4	166	2.3	3.7	100	15.9	E	89	-4.1	****	60	13	
14	-.3	-4.7	-2.5	059	1.0	1.6	265	4.4	ENE	71	-7.3	****	90	14	
15	-2.2	-7.3	-4.8	050	1.2	1.4	355	3.8	ENE	69	-9.8	****	70	15	
16	-2.0	-6.1	-4.1	065	1.5	1.7	071	6.3	ENE	39	-16.1	****	110	16	
17	-3.7	-9.3	-6.5	059	1.2	1.5	094	5.1	ENE	48	-15.6	****	115	17	
18	-7.0	-13.7	-10.4	058	.8	1.0	098	4.4	NE	80	-13.3	****	120	18	
19	-10.3	-15.3	-12.8	051	.9	1.3	083	3.8	NE	74	-16.5	****	105	19	
20	-10.4	-14.8	-12.6	066	1.4	1.5	066	4.4	ENE	62	-18.0	****	155	20	
21	-14.8	-21.4	-18.1	058	1.1	1.5	316	5.7	ENE	71	-21.5	****	135	21	
22	-21.2	-24.7	-23.0	106	2.2	2.4	115	9.5	ESE	46	-31.6	****	145	22	
23	-23.8	-27.8	-25.8	068	1.6	1.9	109	7.6	ENE	45	-33.6	****	165	23	
24	-22.0	-25.0	-23.5	060	1.1	1.2	033	3.2	ENE	36	-34.2	****	175	24	
25	-15.6	-25.0	-20.3	067	1.4	1.5	061	4.4	ENE	29	-34.6	****	195	25	
26	-12.6	-17.7	-15.2	071	.9	1.1	089	5.1	ENE	61	-22.3	****	225	26	
27	-9.9	-16.6	-13.3	070	1.4	1.6	059	5.1	ENE	23	-31.2	****	390	27	
28	-9.9	-20.1	-15.0	068	1.7	1.9	087	8.3	ENE	40	-27.5	****	300	28	
29	-4.8	-9.4	-7.1	098	3.1	3.9	119	13.3	E	79	-10.0	****	170	29	
30	-5.0	-7.9	-6.5	170	.4	1.6	135	15.2	SE	92	-7.7	****	115	30	
31	-7.7	-15.2	-11.5	281	.9	1.3	246	4.4	NW	92	-12.2	****	120	31	
MONTH	1.2	-27.8	-10.4	087	1.6	2.2	118	19.7	ENE	61	-17.3	****	3650		

GUST VEL. AT MAX, GUST MINUS 2 INTERVALS 15.2

GUST VEL. AT MAX, GUST MINUS 1 INTERVAL 14.6

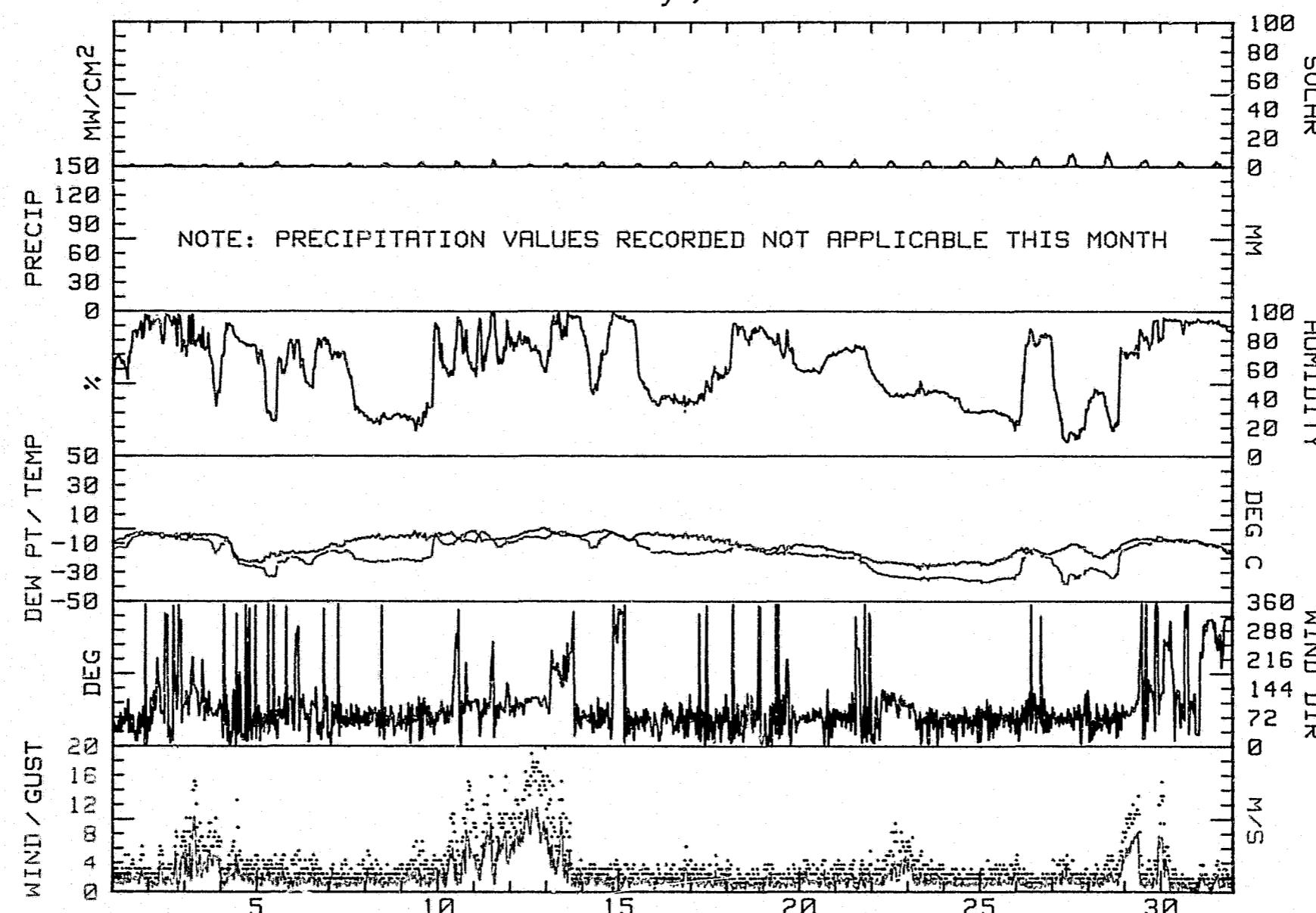
GUST VEL. AT MAX, GUST PLUS 1 INTERVAL 14.0

GUST VEL. AT MAX, GUST PLUS 2 INTERVALS 11.4

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 INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

R&M CONSULTANTS, INC.  
SUSITNA HYDROELECTRIC PROJECT  
GLACIER WEATHER STATION  
January, 1984



## R &amp; M CONSULTANTS, INC.

## SUBSTITUTION HYDRO ELECTRIC PROJECT

WIND FREQUENCY SUMMARY FOR GLACIER WEATHER STATION  
DATA TAKEN DURING January, 1984

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		
	1.0	3.0	6.0	10.0	15.0	20.0			
N	.74	3.49	.07	0.00	0.00	0.00	0.00	0.00	4.30
NNE	1.55	7.26	.34	0.00	0.00	0.00	0.00	0.00	9.14
NE	2.02	11.96	.47	0.00	0.00	0.00	0.00	0.00	14.45
ENE	1.88	19.62	1.48	.13	0.00	0.00	0.00	0.00	23.12
E	1.01	13.24	3.76	1.75	0.00	0.00	0.00	0.00	19.76
ESE	2.02	4.64	2.35	2.76	.87	0.00	0.00	0.00	12.63
SE	1.08	1.81	.67	.60	.07	0.00	0.00	0.00	4.23
SSE	.20	.40	.34	.60	.02	0.00	0.00	0.00	1.61
S	.07	.54	.40	.07	0.00	0.00	0.00	0.00	1.08
SSW	.20	.54	.34	.07	0.00	0.00	0.00	0.00	1.14
SW	.20	.67	.20	.13	0.00	0.00	0.00	0.00	1.21
WSW	.40	.54	.34	0.00	0.00	0.00	0.00	0.00	1.28
W	.27	.87	.20	0.00	0.00	0.00	0.00	0.00	1.34
WNW	.27	.67	0.00	0.00	0.00	0.00	0.00	0.00	.94
NW	.81	1.14	0.00	0.00	0.00	0.00	0.00	0.00	1.95
NNW	.34	1.21	.07	0.00	0.00	0.00	0.00	0.00	1.61
CALM									.20
TOTAL	13.04	68.62	11.02	6.12	1.01	0.00	0.00	100.00	

NOTE: ALL FREQUENCIES ARE EXPRESSED IN PERCENT

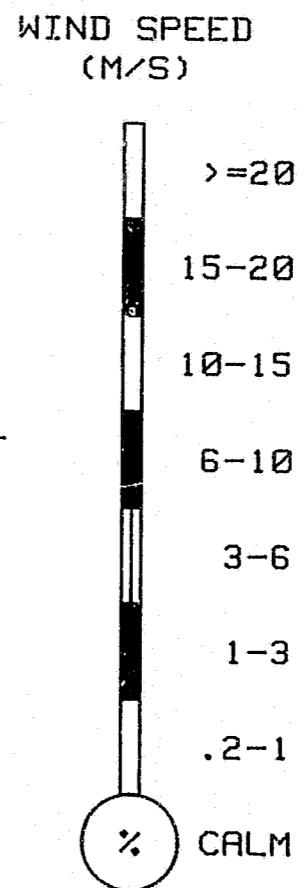
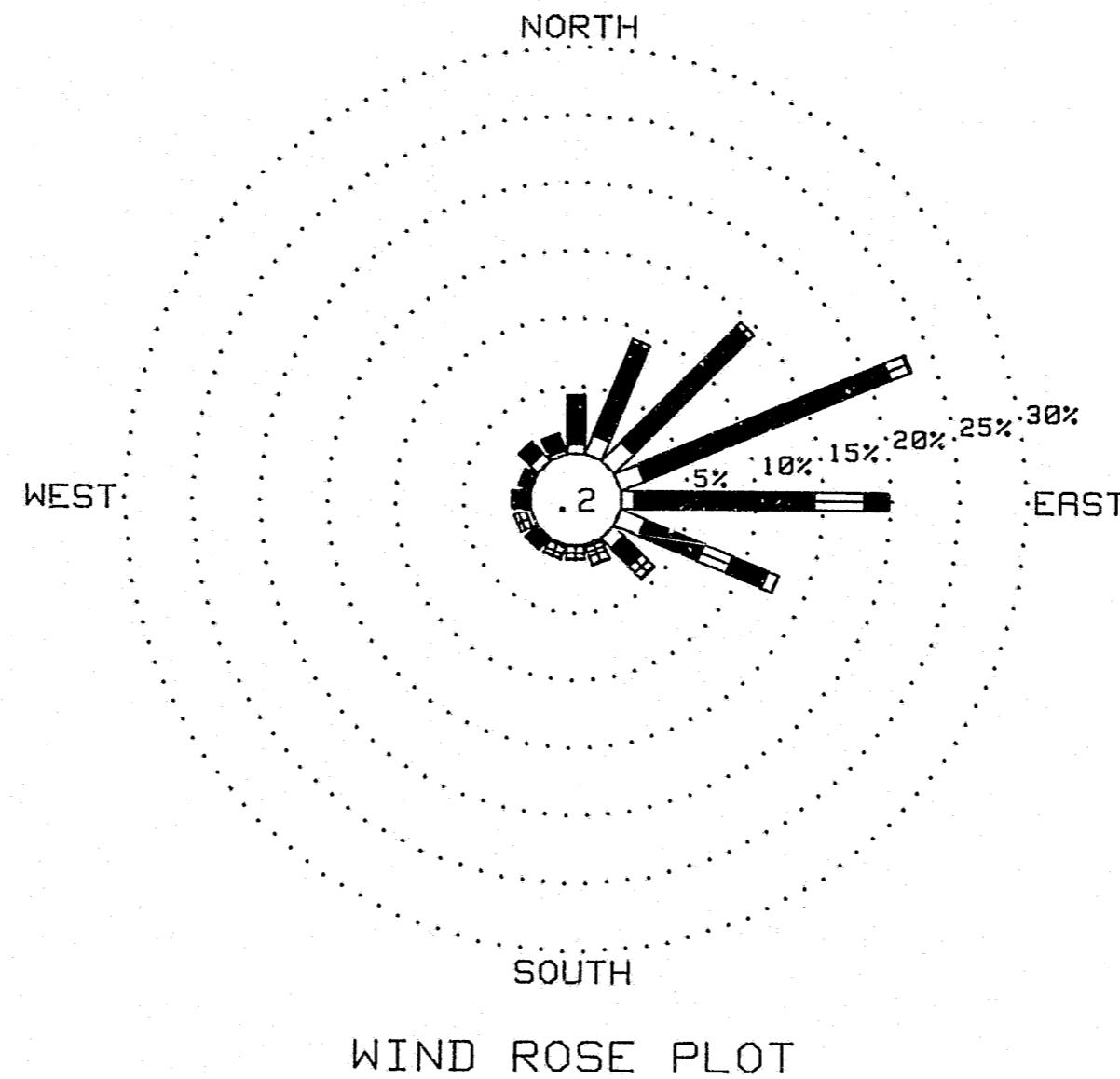
1488 VALID WIND OBSERVATIONS USED TO DEVELOP FREQUENCY SUMMARY

1488 WIND OBSERVATIONS WOULD HAVE BEEN CORRECT FOR 30 MINUTE DATA.

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

00276

R&M CONSULTANTS, INC.  
SUSITNA HYDROELECTRIC PROJECT  
GLACIER WEATHER STATION  
January, 1984



## R &amp; M CONSULTANTS, INC.

## SUSITNA HYDROELECTRIC PROJECT

HOURLY SOLAR RADIATION SUMMARY FOR GLACIER WEATHER STATION  
DATA TAKEN DURING January, 1984

SOLAR RADIATION VALUES MEASURED IN MILLIWATTS PER SQUARE CENTIMETER

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	Avg
1	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	
2	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	
3	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	
4	0	0	0	0	0	0	0	0	0	0	2	2	2	0	0	0	0	0	0	0	0	0	0	0	
5	0	0	0	0	0	0	0	0	0	1	2	3	2	1	0	0	0	0	0	0	0	0	0	0	
6	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	
7	0	0	0	0	0	0	0	0	0	0	0	1	2	2	2	0	0	0	0	0	0	0	0	0	
8	0	0	0	0	0	0	0	0	0	0	0	1	2	2	2	1	0	0	0	0	0	0	0	0	
9	0	0	0	0	0	0	0	0	0	0	0	1	2	3	2	1	1	0	0	0	0	0	0	0	
10	0	0	0	0	0	0	0	0	0	0	0	1	4	3	2	1	1	1	0	0	0	0	0	0	
11	0	0	0	0	0	0	0	0	0	0	0	0	2	4	3	3	1	1	0	0	0	0	0	0	
12	0	0	0	0	0	0	0	0	0	0	0	0	1	2	2	2	1	1	0	0	0	0	0	0	
13	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	2	1	1	0	0	0	0	0	0	
14	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	2	2	1	1	0	0	0	0	0	
15	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	2	2	1	1	0	0	0	0	0	
16	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	3	3	2	2	2	2	2	2	2	
17	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	3	3	2	2	2	2	2	2	2	
18	0	0	0	0	0	0	0	0	0	0	0	0	0	1	4	3	3	3	2	2	2	2	2	2	
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	3	3	2	2	2	2	2	2	
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	4	3	3	3	2	2	2	2	2	
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	2	2	2	2	2	2	2	2	
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	2	2	2	2	2	2	2	
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	4	4	4	4	4	4	4	4	
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	2	2	2	2	2	2	2	
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	2	2	2	2	2	2	2	
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5	5	5	5	5	5	5	5	
27	0	0	0	0	0	0	0	0	0	0	1	2	2	2	2	3	3	3	3	3	3	3	3	3	
28	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2	2	2	2	2	2	2	
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	3	3	3	3	3	3	3	3	
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	
31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	2	2	2	2	2	2	2	

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

## R &amp; M CONSULTANTS, INC.

## SUSITNA HYDROELECTRIC PROJECT

OBSERVATION SUMMARY FOR GLACIER WEATHER STATION  
DATA TAKEN DURING January, 1984

PARAMETER	NUMBER OF USABLE OBSERVATIONS	PERCENT OF TOTAL OBSERVATIONS
TEMPERATURE	1488	100
WIND SPEED	1488	100
WIND DIRECTION	1488	100
PEAK GUST	1488	100
RELATIVE HUMIDITY	1291	87
PRECIPITATION	0	0
SOLAR RADIATION	1488	100
DEW POINT	1291	87

THERE ARE 1488 POSSIBLE OBSERVATIONS THIS MONTH FOR EACH PARAMETER.  
THE DATA RECORDING INTERVAL IS 30 MINUTES.

THE FOLLOWING ADJUSTMENTS HAVE BEEN MADE TO THIS MONTH'S DATA:

1. RH -7 RH Points
2. Solar -1 mW/cm<sup>2</sup>

No precipitation data for February

(See INTERPRETATION OF DATA).

## R &amp; M CONSULTANTS, INC.

## SUSSEX TINA HYDRO ELECTRIC PROJECT

THREE HOUR SUMMARY FOR GLACIER WEATHER STATION  
DATA TAKEN DURING February, 1984

DAY 01

DAY 02

DAY 03

HOUR	DEW	WIND	WIND GUST MAX.	DIR.	HR	DEW	WIND	WIND GUST MAX.	DIR.	HR	DEW	WIND	WIND GUST MAX.	DIR.			
NDNG TEMP.	POINT RH	SPD.	DIR.	GUST	RAD	NDNG TEMP.	POINT RH	SPD.	DIR.	GUST	RAD	NDNG TEMP.	POINT RH	SPD.	DIR.		
DEG C	DEG C	%	DEG.	M/S	MW	DEG C	DEG C	%	DEG.	M/S	MW	DEG C	DEG C	%	DEG.	M/S	MW

0300	-15.2	-17.3	84	043	.9	078	3.8	0	0300	-13.0	-14.6	88	070	.7	051	2.5	0	0300	-16.8	****	25	079	1.0	061	2.5	0
0600	-15.2	-20.3	65	072	1.5	055	3.2	0	0600	-18.1	-20.0	85	318	1.2	319	2.5	0	0600	-15.2	-30.9	25	072	1.0	031	3.2	0
0900	-13.4	-20.7	54	072	1.7	067	3.8	0	0900	-20.2	-22.3	83	013	1.3	029	3.8	0	0900	-14.4	-24.6	42	090	1.4	062	3.8	0
1200	-11.5	-18.5	56	085	1.3	068	3.2	6	1200	-20.0	-22.0	84	040	.5	129	3.2	5	1200	-10.6	****	58	075	1.1	069	3.2	6
1500	-10.7	****	70	048	.7	058	2.5	3	1500	-20.6	****	61	308	.9	289	2.5	5	1500	-8.7	-16.3	54	067	1.2	049	2.5	3
1800	-12.2	-14.2	85	078	1.1	039	3.2	0	1800	-20.8	****	74	057	1.3	088	3.8	0	1800	-8.4	-10.8	83	063	1.1	102	3.8	0
2100	-13.4	-16.1	80	047	1.1	088	4.4	0	2100	-19.6	-25.0	62	061	.8	044	1.9	0	2100	-6.1	-8.8	81	064	3.0	094	8.9	0
2400	-12.7	****	90	088	.8	071	3.8	0	2400	-17.8	-31.3	30	074	1.2	050	4.4	0	2400	-6.6	****	94	023	1.6	031	9.5	0

DAY 04

DAY 05

DAY 06

HOUR	DEW	WIND	WIND GUST MAX.	DIR.	HR	DEW	WIND	WIND GUST MAX.	DIR.	HR	DEW	WIND	WIND GUST MAX.	DIR.			
NDNG TEMP.	POINT RH	SPD.	DIR.	GUST	RAD	NDNG TEMP.	POINT RH	SPD.	DIR.	GUST	RAD	NDNG TEMP.	POINT RH	SPD.	DIR.		
DEG C	DEG C	%	DEG.	M/S	MW	DEG C	DEG C	%	DEG.	M/S	MW	DEG C	DEG C	%	DEG.	M/S	MW

0300	-4.8	-5.5	95	298	.5	215	3.2	0	0300	-10.7	-12.2	89	076	.8	359	3.2	0	0300	-13.4	-15.0	88	227	1.5	229	12.7	0
0600	-4.7	****	96	286	.9	246	2.5	0	0600	-10.3	-12.5	84	110	.5	359	8.3	0	0600	-13.3	-16.0	80	056	1.4	358	4.4	0
0900	-2.7	-8.7	63	153	2.8	137	14.6	0	0900	-11.6	****	76	125	2.7	115	8.3	0	0900	-14.8	****	89	350	.5	032	1.9	0
1200	-5.8	-9.0	78	108	7.3	134	15.9	5	1200	-11.0	-16.6	63	071	1.2	128	4.4	4	1200	-13.7	****	67	343	.5	281	4.4	7
1500	-6.7	-10.9	72	104	7.0	103	11.4	3	1500	-11.8	****	77	115	1.1	092	4.4	3	1500	-14.4	-21.5	55	067	1.5	075	4.4	7
1800	-8.0	-9.5	89	151	7.0	155	18.4	0	1800	-11.2	-16.5	65	063	1.6	070	4.4	0	1800	-13.9	-24.4	41	077	2.0	076	4.4	0
2100	-11.4	-12.9	89	205	3.9	168	12.7	0	2100	-10.9	-16.0	66	049	1.2	105	5.1	0	2100	-13.4	-24.8	38	068	2.5	080	6.3	0
2400	-11.0	-12.2	91	322	1.2	335	5.1	0	2400	-10.9	****	92	048	1.0	023	4.4	0	2400	-10.9	-23.2	36	053	2.0	053	4.4	0

DAY 07

DAY 08

DAY 09

HOUR	DEW	WIND	WIND GUST MAX.	DIR.	HR	DEW	WIND	WIND GUST MAX.	DIR.	HR	DEW	WIND	WIND GUST MAX.	DIR.			
NDNG TEMP.	POINT RH	SPD.	DIR.	GUST	RAD	NDNG TEMP.	POINT RH	SPD.	DIR.	GUST	RAD	NDNG TEMP.	POINT RH	SPD.	DIR.		
DEG C	DEG C	%	DEG.	M/S	MW	DEG C	DEG C	%	DEG.	M/S	MW	DEG C	DEG C	%	DEG.	M/S	MW

0300	-9.2	-24.9	27	074	3.2	070	7.0	0	0300	-14.2	-21.5	54	085	3.5	088	8.9	0	0300	-17.9	-30.0	34	061	1.6	047	3.8	0
0600	-8.8	-21.6	35	075	3.9	069	7.6	0	0600	-15.8	-18.0	83	134	1.2	121	7.6	0	0600	-18.1	-29.0	38	070	1.2	085	3.2	0
0900	-9.3	-15.2	62	079	4.6	086	7.6	0	0900	-16.6	-20.3	73	113	.8	262	3.2	0	0900	-17.9	-29.2	37	073	1.6	062	3.2	0
1200	-11.3	-13.3	85	013	.3	084	6.3	13	1200	-16.3	-24.1	51	076	2.1	094	4.4	13	1200	-16.2	-29.8	30	062	1.7	055	3.8	10
1500	-14.8	-17.1	83	196	4.0	202	9.5	7	1500	-16.0	-26.6	40	058	1.6	049	3.8	9	1500	-14.3	****	18	080	.9	061	3.8	6
1800	-15.5	-21.9	58	110	4.3	119	12.1	0	1800	-18.1	-29.0	38	061	1.2	054	3.2	0	1800	-17.7	-31.5	29	069	1.2	047	2.5	0
2100	-16.3	-24.3	50	074	3.6	074	7.0	0	2100	-18.1	-29.9	35	078	1.8	076	4.4	0	2100	-16.8	-31.8	31	078	1.2	053	3.2	0
2400	-14.6	-25.6	39	073	4.2	077	8.9	0	2400	-18.2	-30.6	33	071	1.6	065	3.8	0	2400	-18.2	****	32	060	1.0	059	3.2	0

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

## R &amp; M CONSULTANTS, INC.

## SUSITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR GLACIER WEATHER STATION  
DATA TAKEN DURING February, 1984

DAY 10

DAY 11

DAY 12

HOUR	DEW	WIND	WIND GUST MAX.	POINT	NDNG TEMP.	RH	DIR.	SPD.	DIR.	GUST	RAD	POINT	NDNG TEMP.	RH	DIR.	SPD.	DIR.	GUST	RAD	POINT	NDNG TEMP.	RH	DIR.	SPD.	DIR.	GUST	RAD		
	DEG C	DEG C	% DEG.	M/S	DEG C	DEG C	% DEG.	M/S	DEG C	DEG C	% DEG.	M/S	DEG C	DEG C	% DEG.	M/S	DEG C	DEG C	% DEG.	M/S	DEG C	DEG C	% DEG.	M/S	DEG C	DEG C	% DEG.	M/S	MW

0300	-19.1	-30.8	35	053	.7	034	1.9	0	0300	-13.6	-20.9	54	061	1.4	072	3.2	0	0300	-9.4	-15.3	62	055	.7	100	2.5	0	
0600	-20.0	-29.7	42	042	1.0	019	3.2	0	0600	-11.3	-18.6	55	050	1.4	048	3.2	0	0600	-10.1	-15.8	63	066	1.3	064	3.8	0	
0900	-20.3	-28.7	47	080	1.3	080	3.2	0	0900	-10.5	-18.7	51	061	2.1	061	4.4	0	0900	-9.7	-16.8	56	078	1.4	096	3.2	0	
1200	-18.4	-28.5	41	077	1.9	087	5.1	9	1200	-9.1	-21.3	37	065	1.7	059	4.4	11	1200	-6.9	-19.0	38	068	1.9	067	3.8	12	
1500	-15.7	-28.4	33	050	1.5	036	4.4	17	1500	-8.8	-24.1	28	043	.9	013	2.5	13	1500	-8.7	-20.3	39	056	1.2	091	3.8	8	
1800	-16.4	-25.4	46	084	1.9	085	5.1	0	1800	-9.5	-23.3	32	065	1.3	056	3.2	0	1800	-7.9	-20.5	36	058	1.4	049	3.2	0	
2100	-16.1	-24.4	49	047	1.5	075	4.4	0	2100	-9.5	-21.9	36	035	1.8	022	3.8	0	2100	-9.3	-21.7	36	073	2.0	075	5.1	0	
2400	-14.3	-23.0	48	047	1.7	056	3.8	0	2400	-10.2	-16.5	60	075	1.3	085	3.2	0	2400	-8.4	-20.9	36	083	.9	097	1.9	0	

DAY 13

DAY 14

DAY 15

HOUR	DEW	WIND	WIND GUST MAX.	POINT	NDNG TEMP.	RH	DIR.	SPD.	DIR.	GUST	RAD	POINT	NDNG TEMP.	RH	DIR.	SPD.	DIR.	GUST	RAD	POINT	NDNG TEMP.	RH	DIR.	SPD.	DIR.	GUST	RAD		
	DEG C	DEG C	% DEG.	M/S	DEG C	DEG C	% DEG.	M/S	DEG C	DEG C	% DEG.	M/S	DEG C	DEG C	% DEG.	M/S	DEG C	DEG C	% DEG.	M/S	DEG C	DEG C	% DEG.	M/S	DEG C	DEG C	% DEG.	M/S	MW

0300	-7.9	-20.5	36	069	1.1	070	3.8	0	0300	-4.6	****	66	***	***	***	4.4	0	0300	-9.5	-18.0	50	103	2.1	103	5.1	0	
0600	-7.3	-19.3	38	068	1.3	071	3.8	0	0600	-6.2	****	88	***	***	***	1.9	0	0600	-10.9	-19.3	50	***	****	***	4.4	0	
0900	-6.7	-18.8	38	063	1.5	066	3.8	0	0900	-7.4	****	93	***	***	***	3.8	0	0900	-10.0	-19.0	48	***	****	***	4.4	1	
1200	-4.0	****	30	073	1.5	068	3.2	19	1200	-6.9	-9.2	84	***	***	***	5.7	2	1200	-9.0	-20.9	38	100	2.0	***	3.2	22	
1500	-3.2	****	27	078	.9	100	2.5	16	1500	-7.1	-10.9	74	101	3.5	104	7.6	3	1500	-8.5	-20.1	39	102	1.5	101	3.8	10	
1800	-4.8	-15.0	45	063	1.0	062	5.1	0	1800	-7.7	-11.5	74	109	2.5	104	7.0	0	1800	-8.9	-19.6	42	***	****	***	5.7	0	
2100	-5.0	-14.6	47	***	***	***	2.5	0	2100	-8.3	****	72	112	2.0	099	5.7	0	2100	-7.8	-20.1	37	103	1.2	***	3.8	0	
2400	-4.3	-12.7	52	***	***	***	3.8	0	2400	-9.2	-16.6	55	096	1.7	095	3.8	0	2400	-7.8	-11.6	74	105	2.2	105	5.1	0	

DAY 16

DAY 17

DAY 18

HOUR	DEW	WIND	WIND GUST MAX.	POINT	NDNG TEMP.	RH	DIR.	SPD.	DIR.	GUST	RAD	POINT	NDNG TEMP.	RH	DIR.	SPD.	DIR.	GUST	RAD	POINT	NDNG TEMP.	RH	DIR.	SPD.	DIR.	GUST	RAD		
	DEG C	DEG C	% DEG.	M/S	DEG C	DEG C	% DEG.	M/S	DEG C	DEG C	% DEG.	M/S	DEG C	DEG C	% DEG.	M/S	DEG C	DEG C	% DEG.	M/S	DEG C	DEG C	% DEG.	M/S	DEG C	DEG C	% DEG.	M/S	MW

0300	-5.5	-10.6	67	110	3.4	114	11.4	0	0300	-3.1	-9.8	60	109	5.7	117	16.5	0	0300	-8.0	-13.0	67	122	4.6	113	12.7	0	
0600	-8.4	-12.5	72	176	3.4	154	12.1	0	0600	-3.9	-10.1	62	097	4.5	094	12.7	0	0600	-8.7	-13.0	71	121	5.6	133	10.2	0	
0900	-8.4	-14.4	62	120	5.7	146	13.3	1	0900	-3.8	-9.0	67	121	6.0	129	13.3	1	0900	-8.4	-13.8	65	113	3.3	106	10.2	2	
1200	-7.9	-15.6	54	092	5.1	109	8.9	12	1200	-4.0	-8.8	69	125	1.4	141	15.9	10	1200	-8.2	-13.8	64	118	4.6	113	11.4	18	
1500	-7.0	-15.0	53	095	3.8	115	8.3	9	1500	-4.6	****	82	119	2.5	115	10.8	4	1500	-8.4	-13.8	65	112	5.4	117	12.1	9	
1800	-8.6	-12.9	71	024	1.5	025	5.1	0	1800	-5.7	-8.0	84	142	.8	124	5.1	0	1800	-8.3	-13.7	65	095	3.4	107	10.2	0	
2100	-5.9	-13.3	56	039	2.3	035	5.1	0	2100	-6.8	-9.1	84	118	3.3	110	7.0	0	2100	-7.7	-15.0	56	102	4.7	105	8.9	0	
2400	-5.0	-8.1	79	050	2.3	072	7.6	0	2400	-8.0	-12.1	72	107	5.3	097	8.9	0	2400	-8.1	-14.5	60	080	4.5	080	8.3	0	

\*\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*\*

## R &amp; M CONSULTANTS, INC.

## SUSITNA HYDRO ELECTRIC PROJECT

THREE HOUR SUMMARY FOR GLACIER WEATHER STATION  
DATA TAKEN DURING February, 1984

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	DEG C	% DEG.	M/S MW	NDNG TEMP., POINT RH DIR., SPD., DIR., GUST RAD	DEG C	% DEG.	M/S MW	NDNG TEMP., POINT RH DIR., SPD., DIR., GUST RAD	DEG C	% DEG.	M/S MW

0300	-7.1	-15.1	53	066	3.7	070	8.9	0 0300	-23.2	-26.4	75	334	1.4	353	4.4	0 0300	-14.6	-19.0	69	092	1.1	096	3.8	0
0600	-7.9	-16.8	49	059	2.9	074	7.0	0 0600	-24.5	****	74	344	.9	347	5.1	0 0600	-13.0	-18.5	63	094	2.6	079	5.7	0
0900	-8.2	****	38	072	1.7	089	5.1	0 0900	-24.6	-27.7	75	352	1.7	350	5.7	1 0900	-13.6	-17.5	72	086	1.7	100	7.0	1
1200	-13.4	-16.6	77	055	1.4	043	4.4	11 1200	-22.9	-26.1	75	168	.8	233	4.4	10 1200	-11.8	-19.5	53	053	1.4	052	3.2	7
1500	-17.7	-20.9	76	025	1.2	346	5.1	9 1500	-16.3	-21.1	66	127	1.1	146	3.8	7 1500	-11.0	****	39	041	1.3	048	4.4	10
1800	-20.1	-22.9	78	334	2.2	343	5.7	0 1800	-14.6	****	83	128	.7	133	2.5	0 1800	-12.5	-19.1	58	068	1.5	061	3.8	0
2100	-22.0	-24.9	77	337	1.2	042	4.4	0 2100	-13.6	****	84	130	.8	127	1.9	0 2100	-12.0	-19.2	55	075	1.6	056	3.8	0
2400	-20.5	-23.5	77	301	1.1	311	4.4	0 2400	-13.7	****	85	090	.4	064	1.9	0 2400	-10.9	-17.5	58	069	2.3	072	5.7	0

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	DEG C	% DEG.	M/S MW	NDNG TEMP., POINT RH DIR., SPD., DIR., GUST RAD	DEG C	% DEG.	M/S MW	NDNG TEMP., POINT RH DIR., SPD., DIR., GUST RAD	DEG C	% DEG.	M/S MW

0300	-10.7	-15.1	70	070	1.3	037	4.4	0 0300	-10.8	-13.0	84	098	.8	062	2.5	0 0300	-12.0	-16.0	72	111	1.6	105	5.7	0
0600	-10.3	-14.0	74	061	1.4	085	3.8	0 0600	-11.0	-12.9	86	096	1.2	110	3.2	0 0600	-10.6	-14.5	73	077	.8	105	5.1	0
0900	-10.1	-13.4	77	060	1.0	061	3.2	0 0900	-10.4	****	81	081	.3	037	2.5	0 0900	-10.7	-14.1	76	072	1.2	119	3.2	1
1200	-7.7	****	59	060	1.2	042	3.2	6 1200	-9.2	-15.3	61	065	.9	061	2.5	6 1200	-9.6	****	63	106	.8	112	2.5	5
1500	-9.4	-13.7	71	351	.7	359	2.5	5 1500	-9.9	****	61	084	1.3	090	3.2	3 1500	-10.1	****	74	032	.5	070	1.9	5
1800	-10.1	****	89	066	.5	040	1.9	0 1800	-10.9	-14.6	74	071	1.4	073	3.8	0 1800	-11.3	****	86	187	.4	264	1.9	0
2100	-10.8	****	87	338	.5	258	1.9	0 2100	-10.7	-15.1	70	052	1.5	044	3.8	0 2100	-11.4	-13.3	86	112	.6	028	2.5	0
2400	-10.5	-12.7	84	052	.7	065	1.9	0 2400	-11.1	-17.3	60	085	1.7	115	5.1	0 2400	-11.0	****	84	076	.8	063	2.5	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	DEG C	% DEG.	M/S MW	NDNG TEMP., POINT RH DIR., SPD., DIR., GUST RAD	DEG C	% DEG.	M/S MW	NDNG TEMP., POINT RH DIR., SPD., DIR., GUST RAD	DEG C	% DEG.	M/S MW

0300	-10.9	****	86	050	.6	057	2.5	0 0300	-9.7	-16.6	57	075	1.4	068	2.5	0 0300	-12.4	-22.0	45	057	1.0	071	2.5	0
0600	-10.8	****	86	014	.5	014	1.3	0 0600	-8.9	-16.8	53	077	1.5	067	4.4	0 0600	-12.3	-21.4	47	052	.9	044	1.9	0
0900	-10.1	****	83	*** ***	***	1.3	1	0 0900	-7.5	-18.3	42	080	1.7	100	3.2	1 0900	-12.9	-21.9	47	067	.8	356	2.5	3
1200	-8.4	-13.2	68	035	1.0	026	2.5	5 1200	-5.1	-21.7	26	063	1.7	068	4.4	14 1200	-10.1	****	36	058	.8	098	2.5	18
1500	-8.4	****	63	024	1.6	024	2.5	3 1500	-2.6	****	17	082	1.0	090	2.5	16 1500	****	****	**	*** ***	*** ***	*** ***	*** ***	*** ***
1800	-9.6	-12.6	79	051	1.1	035	2.5	0 1800	-8.0	-21.2	34	018	1.0	357	3.2	0 1800	****	****	**	*** ***	*** ***	*** ***	*** ***	*** ***
2100	-9.8	-12.3	82	076	.8	082	2.5	0 2100	-8.4	****	33	084	1.3	082	3.2	0 2100	****	****	**	*** ***	*** ***	*** ***	*** ***	*** ***
2400	-9.9	-14.1	71	078	1.0	050	1.9	0 2400	-10.5	-20.2	45	045	1.2	025	3.2	0 2400	****	****	**	*** ***	*** ***	*** ***	*** ***	*** ***

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

## R &amp; M CONSULTANTS, INC.

## SUSITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR GLACIER WEATHER STATION  
DATA TAKEN DURING February, 1984

DAY 28

DAY 29

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	MW	DEG C	DEG C	%	DEG. M/S	MW	DEG. M/S	MW

0300	*****	*****	**	***	****	***	****	***	0300	*****	*****	**	***	****	***	***	***	***	***	***	***
0600	*****	*****	**	***	****	***	****	***	0600	*****	*****	**	***	****	***	***	***	***	***	***	***
0900	*****	*****	**	***	****	***	****	***	0900	*****	*****	**	***	****	***	***	***	***	***	***	***
1200	*****	*****	**	***	****	***	****	***	1200	*****	*****	**	***	****	***	***	***	***	***	***	***
1500	*****	*****	**	***	****	***	****	***	1500	*****	*****	**	***	****	***	***	***	***	***	***	***
1800	*****	*****	**	***	****	***	****	***	1800	*****	*****	**	***	****	***	***	***	***	***	***	***
2100	*****	*****	**	***	****	***	****	***	2100	*****	*****	**	***	****	***	***	***	***	***	***	***
2400	*****	*****	**	***	****	***	****	***	2400	*****	*****	**	***	****	***	***	***	***	***	***	***

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

## R &amp; M CONSULTANTS, INC.

## SUSITNA HYDROELECTRIC PROJECT

MONTHLY SUMMARY FOR GLACIER WEATHER STATION  
DATA TAKEN DURING February, 1984

DAY	MAX. TEMP. DEG C	MIN. TEMP. DEG C	MEAN TEMP. DEG C	RES. DIR. DEG	RES. SPD. M/S	AVG. WIND SPD. M/S	MAX. GUST DIR. DEG	MAX. GUST P'VAL SPD. M/S	P'VAL DIR. Z	MEAN RH %	MEAN DP DEG C	DAY'S PRECIP MM	SOLAR ENERGY WH/SQM
1	-10.0	-15.5	-12.8	068	1.1	1.3	088	4.4	ENE	72	-17.6	****	245 1
2	-12.2	-22.0	-17.1	031	.7	1.2	050	4.4	NW	76	-21.8	****	255 2
3	-5.9	-17.8	-11.9	065	1.4	1.7	031	9.5	ENE	58	-18.7	****	290 3
4	-2.3	-11.1	-6.9	135	2.6	4.2	155	18.4	ESE	85	-9.2	****	255 4
5	-10.1	-12.1	-11.1	086	1.1	1.7	359	8.3	NNE	75	-14.7	****	305 5
6	-10.8	-14.8	-12.8	061	1.0	1.7	229	12.7	ENE	59	-20.3	****	455 6
7	-8.7	-16.4	-12.6	090	2.7	3.8	119	12.1	ENE	53	-20.9	****	525 7
8	-14.1	-18.7	-16.4	081	1.6	2.0	088	8.9	ENE	50	-24.9	****	630 8
9	-14.3	-18.9	-16.6	069	1.3	1.4	047	3.8	ENE	33	-30.4	****	485 9
10	-14.3	-20.6	-17.5	062	1.4	1.6	087	5.1	E	43	-27.3	****	720 10
11	-7.4	-13.6	-10.5	057	1.5	1.5	061	4.4	ENE	46	-20.5	****	790 11
12	-6.1	-14.0	-10.1	067	1.3	1.5	075	5.1	ENE	46	-18.6	****	640 12
13	-1.6	-9.9	-5.8	069	1.2	1.3	***	5.1	ENE	40	-17.8	****	970 13
14	-4.2	-9.2	-6.7	105	2.4	1.7	104	7.6	E	72	-11.3	****	200 14
15	-6.6	-10.9	-8.8	103	1.8	2.0	***	5.7	ESE	45	-18.9	****	975 15
16	-5.0	-8.7	-6.9	099	2.7	3.7	146	13.3	NE	63	-12.9	****	800 16
17	-2.5	-8.0	-5.3	113	3.6	4.3	117	16.5	ESE	73	-9.1	****	435 17
18	-7.7	-9.6	-8.7	109	4.4	4.7	113	12.7	ESE	67	-13.4	****	820 18
19	-6.7	-22.0	-14.4	037	1.4	2.2	070	8.9	NE	61	-19.7	****	880 19
20	-13.4	-26.7	-20.1	046	.3	1.3	350	5.7	SE	74	-25.8	****	555 20
21	-8.9	-14.6	-11.8	074	1.6	1.8	100	7.0	ENE	60	-19.0	****	575 21
22	-7.7	-11.1	-9.4	052	.8	1.0	037	4.4	ENE	72	-14.2	****	395 22
23	-8.5	-12.1	-10.3	078	1.1	1.3	115	5.1	ENE	71	-14.8	****	290 23
24	-8.9	-12.2	-10.6	092	.7	1.1	105	5.7	ESE	74	-14.8	****	365 24
25	-7.8	-11.3	-9.6	054	.8	.8	057	2.5	NE	74	-13.1	****	230 25
26	-2.6	-11.5	-7.1	068	1.3	1.5	067	4.4	ENE	41	-19.3	****	935 26
27	-10.1	-14.3	-12.2	058	.8	1.0	071	2.5	E	47	-21.8	****	1010 27
28	****	****	****	***	****	****	***	***	***	**	****	****	***** 28
29	****	****	****	***	****	****	***	***	***	**	****	****	***** 29
MONTH	-1.6	-26.7	-11.2	085	1.4	2.0	155	18.4	ENE	60	-18.2	****	15030

GUST VEL., AT MAX., GUST MINUS 2 INTERVALS 16.5

GUST VEL., AT MAX., GUST MINUS 1 INTERVAL 17.1

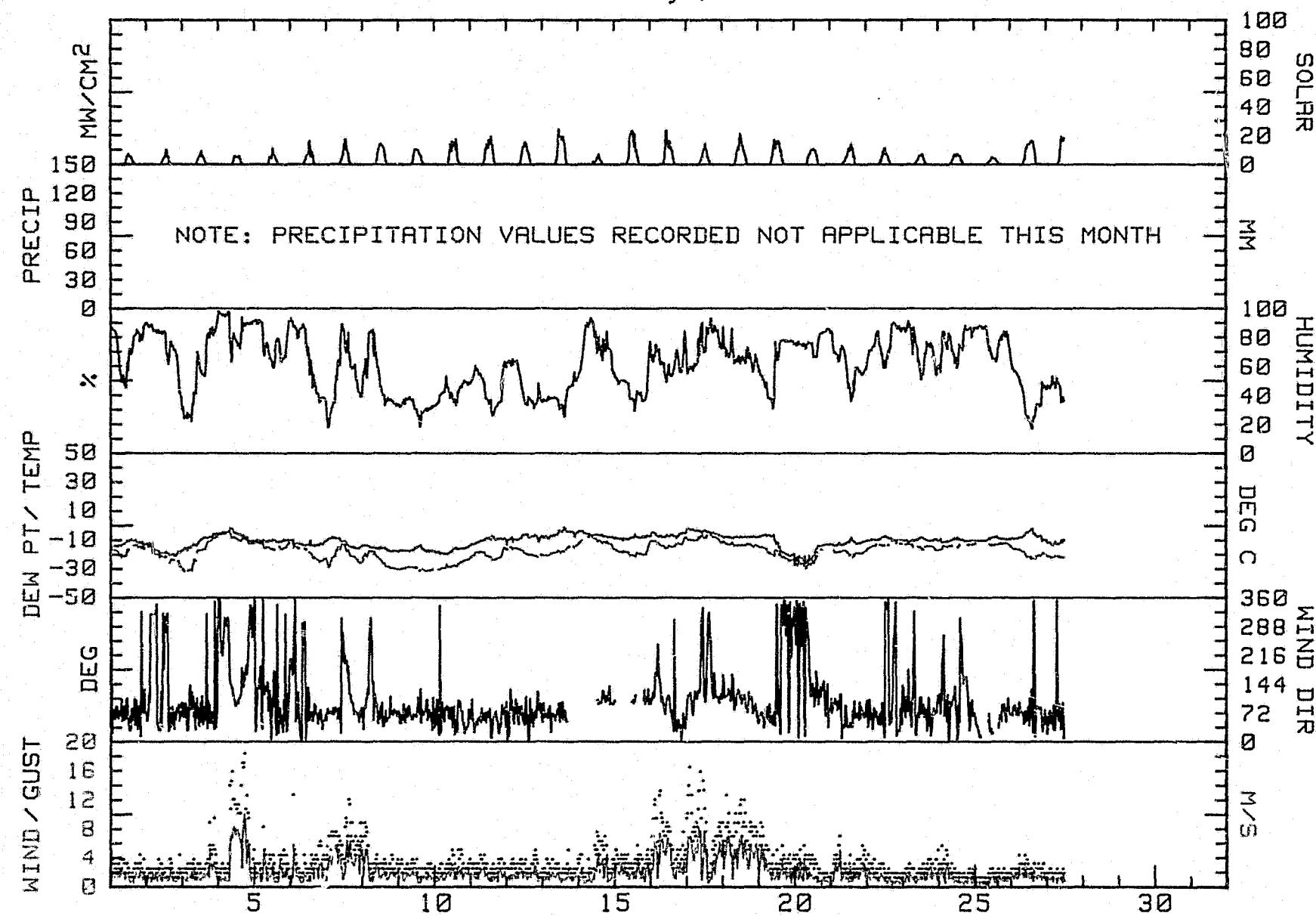
GUST VEL., AT MAX., GUST PLUS 1 INTERVAL 10.8

GUST VEL., AT MAX., GUST PLUS 2 INTERVALS 6.3

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 INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

R&M CONSULTANTS, INC.  
SUSITNA HYDROELECTRIC PROJECT  
GLACIER WEATHER STATION  
February, 1984



## R &amp; M CONSULTANTS, INC.

## SUSITNA HYDROELECTRIC PROJECT

WIND FREQUENCY SUMMARY FOR GLACIER WEATHER STATION  
DATA TAKEN DURING February, 1984

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	.59	2.03	.17	0.00	0.00	0.00	0.00	0.00	2.79
NNE	2.20	5.24	.08	0.00	0.00	0.00	0.00	0.00	7.52
NE	2.79	11.91	.59	0.00	0.00	0.00	0.00	0.00	15.29
ENE	3.46	17.57	2.87	.08	0.00	0.00	0.00	0.00	23.99
E	3.04	11.23	3.55	.59	0.00	0.00	0.00	0.00	18.41
ESE	1.44	5.66	4.22	1.94	0.00	0.00	0.00	0.00	13.26
SE	1.60	1.69	.68	.93	0.00	0.00	0.00	0.00	4.90
SSE	.59	.51	.25	.34	.08	0.00	0.00	0.00	1.77
S	.25	.84	.42	.17	0.00	0.00	0.00	0.00	1.69
SSW	.51	.17	.17	.17	0.00	0.00	0.00	0.00	1.01
SW	.34	.42	.08	0.00	0.00	0.00	0.00	0.00	.84
WSW	.34	.42	.17	0.00	0.00	0.00	0.00	0.00	.93
W	.34	.93	0.00	0.00	0.00	0.00	0.00	0.00	1.27
WNW	.51	.68	0.00	0.00	0.00	0.00	0.00	0.00	1.18
NW	1.18	1.77	0.00	0.00	0.00	0.00	0.00	0.00	2.96
NNW	.42	1.44	.25	0.00	0.00	0.00	0.00	0.00	2.11
CALM									.09
TOTAL	19.59	62.50	13.51	4.22	.08	0.00	0.00	0.00	100.00

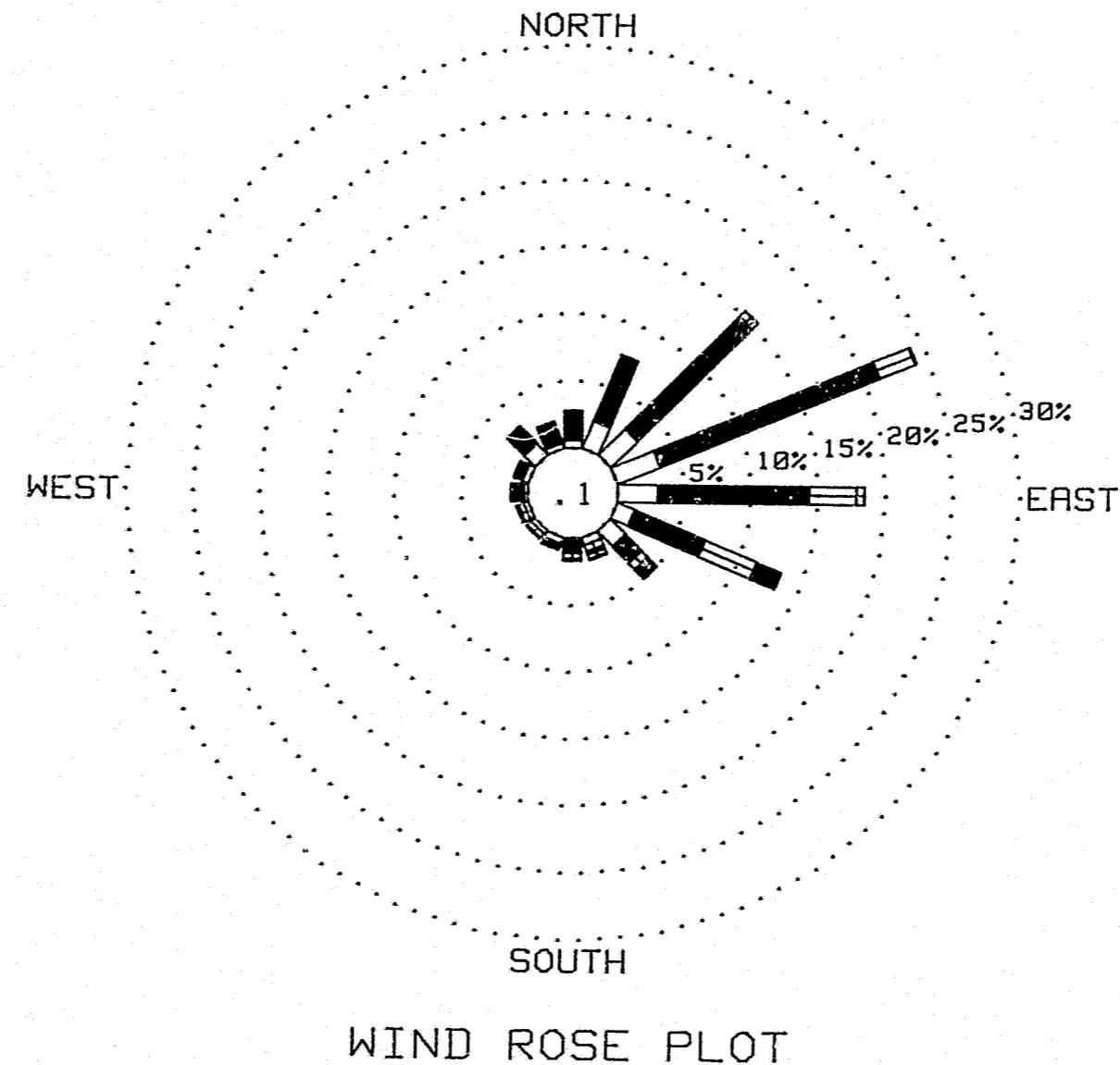
NOTE: ALL FREQUENCIES ARE EXPRESSED IN PERCENT

1184 VALID WIND OBSERVATIONS USED TO DEVELOP FREQUENCY SUMMARY

1392 WIND OBSERVATIONS WOULD HAVE BEEN CORRECT FOR 30 MINUTE DATA.

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

R&M CONSULTANTS, INC.  
SUSITNA HYDROELECTRIC PROJECT  
GLACIER WEATHER STATION  
February, 1984



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## R &amp; M CONSULTANTS, INC.

## SUSITNA HYDROELECTRIC PROJECT

HOURLY SOLAR RADIATION SUMMARY FOR GLACIER WEATHER STATION  
 DATA TAKEN DURING February, 1984

SOLAR RADIATION VALUES MEASURED IN MILLIWATTS PER SQUARE CENTIMETER

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	Avg	
1	0	0	0	0	0	0	0	0	1	2	6	7	5	4	2	0	0	0	0	0	0	0	0	0	1	
2	0	0	0	0	0	0	0	0	0	2	4	5	10	5	1	0	0	0	0	0	0	0	0	0	0	
3	0	0	0	0	0	0	0	0	1	4	6	9	6	4	2	0	0	0	0	0	0	0	0	0	0	
4	0	0	0	0	0	0	0	0	0	1	4	6	5	6	4	1	0	0	0	0	0	0	0	0	0	
5	0	0	0	0	0	0	0	0	0	1	5	5	9	6	4	2	0	0	0	0	0	0	0	0	0	
6	0	0	0	0	0	0	0	0	0	2	4	7	11	11	8	4	1	1	0	0	0	0	0	0	0	
7	0	0	0	0	0	0	0	0	0	2	4	10	14	14	8	2	1	1	0	0	0	0	0	0	0	
8	0	0	0	0	0	0	0	0	0	1	9	12	14	13	10	4	4	1	0	0	0	0	0	0	0	
9	0	0	0	0	0	0	0	0	0	2	7	10	10	9	7	2	2	0	0	0	0	0	0	0	0	
10	0	0	0	0	0	0	0	0	0	2	11	10	15	15	14	5	5	0	0	0	0	0	0	0	0	
11	0	0	0	0	0	0	0	0	0	3	11	13	15	15	16	7	2	0	0	0	0	0	0	0	0	
12	0	0	0	0	0	0	0	0	0	2	8	12	15	14	9	6	1	0	0	0	0	0	0	0	0	
13	0	0	0	0	0	0	0	0	0	3	11	22	19	17	18	8	1	0	0	0	0	0	0	0	0	
14	0	0	0	0	0	0	0	0	0	1	2	2	4	6	4	2	1	0	0	0	0	0	0	0	0	
15	0	0	0	0	0	0	0	0	0	1	4	17	22	23	17	10	0	0	0	0	0	0	0	0	0	
16	0	0	0	0	0	0	0	0	0	1	4	19	18	12	14	10	4	1	0	0	0	0	0	0	0	
17	0	0	0	0	0	0	0	0	0	1	2	4	9	12	10	5	2	0	0	0	0	0	0	0	0	
18	0	0	0	0	0	0	0	0	0	1	6	11	14	20	13	10	6	2	0	0	0	0	0	0	0	
19	0	0	0	0	0	0	0	0	0	1	6	14	14	15	16	12	3	0	0	0	0	0	0	0	0	
20	0	0	0	0	0	0	0	0	0	1	5	7	10	10	11	8	5	1	0	0	0	0	0	0	0	
21	0	0	0	0	0	0	0	0	0	1	2	4	6	11	11	12	4	0	0	0	0	0	0	0	0	
22	0	0	0	0	0	0	0	0	0	0	2	4	8	11	7	6	3	1	0	0	0	0	0	0	0	
23	0	0	0	0	0	0	0	0	0	0	2	3	6	6	7	4	2	1	0	0	0	0	0	0	0	
24	0	0	0	0	0	0	0	0	0	1	3	6	6	7	6	3	1	0	0	0	0	0	0	0	0	
25	0	0	0	0	0	0	0	0	0	1	2	3	4	5	4	4	2	1	0	0	0	0	0	0	0	
26	0	0	0	0	0	0	0	0	0	1	4	10	13	14	15	16	14	8	1	0	0	0	0	0	0	
27	0	0	0	0	0	0	0	0	2	14	18	17	17	17	17	17	17	17	17	17	17	17	17	17	2	
28	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
29	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

## R &amp; M CONSULTANTS, INC.

## SUSITNA HYDROELECTRIC PROJECT

OBSERVATION SUMMARY FOR GLACIER WEATHER STATION  
DATA TAKEN DURING February, 1984

PARAMETER	NUMBER OF USABLE OBSERVATIONS	PERCENT OF TOTAL OBSERVATIONS
TEMPERATURE	1272	91
WIND SPEED	1272	91
WIND DIRECTION	1184	85
PEAK GUST	1272	91
RELATIVE HUMIDITY	1009	72
PRECIPITATION	0	0
SOLAR RADIATION	1272	91
DEW POINT	1009	72

THERE ARE 1392 POSSIBLE OBSERVATIONS THIS MONTH FOR EACH PARAMETER.  
THE DATA RECORDING INTERVAL IS 30 MINUTES.

THE FOLLOWING ADJUSTMENTS HAVE BEEN MADE TO THIS MONTH'S DATA:

1. RH -7 RH Points
2. Solar -1 mW/CM<sup>2</sup>

Additional comments on this month's data:

1. No data after 2/27. Weather wizard not functioning.
2. Intermittent wind direction data lost due to frozen wind vane.

6  
7  
2  
0  
0

No Data for March  
(See INTERPRETATION OF DATA)

No Data for April  
(See INTERPRETATION OF DATA)

## R &amp; M CONSULTANTS, INC.

## GLACIER NATIONAL HYDROLOGIC CENTER PROJECT

HOURLY PRECIPITATION SUMMARY FOR GLACIER WEATHER STATION  
DATA TAKEN DURING May, 1984

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	****	****	****	****	****	****	****	****	****	****	****	****	****	****	****	****	****	****	****	****	****	****	****	****	1	
2	****	****	****	****	****	****	****	****	****	****	****	****	****	****	****	****	****	****	****	****	****	****	****	****	2	
3	****	****	****	****	****	****	****	****	****	****	****	****	****	****	****	****	****	****	****	****	****	****	****	****	3	
4	****	****	****	****	****	****	****	****	****	****	****	****	****	****	****	****	****	****	****	****	****	****	****	****	4	
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	5	
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	6	
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	7	
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	8	
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	9	
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	10	
11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	.8	0.0	.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11	
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	12	
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	13	
14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	
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	15	
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	16	
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	17	
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	18	
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	19	
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	0.0	20	
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	21	
22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.8	4.0	1.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	22	
23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	23	
24	0.0	.4	0.0	0.0	.2	0.0	.2	.4	.4	.4	.4	.4	.4	0.0	.2	0.0	.2	0.0	0.0	0.0	.2	0.0	0.0	0.0	0.0	24
25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.4	.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	25	
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	26	
27	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.2	.4	1.8	.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	27
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	28	
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	29	
30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.2	.4	.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	30
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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	31	

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

R & M CONSULTANTS, INC.

## SUSTAINABLE HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR GLACIER WEATHER STATION  
DATA TAKEN DURING May, 1984

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 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

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 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	*****	*****	**	***	***	***	***	***	0300	-5.1	-15.3	45	076	1.6	045	3.2	0	0300	-4.9	-12.3	56	061	1.3	062	2.5	0
0600	*****	*****	**	***	***	***	***	***	0600	-5.2	*****	**	057	1.2	038	3.8	3	0600	-5.0	-12.9	54	063	1.2	066	2.5	3
0900	-1.2	*****	30	006	.2	006	3.8	57	0900	-3.4	-12.1	51	056	1.6	059	3.2	57	0900	-1.5	-12.9	42	062	1.3	070	3.2	51
1200	3.3	*****	39	092	.3	050	3.8	47	1200	1.4	*****	32	075	1.2	052	3.2	72	1200	2.0	*****	31	094	1.3	107	3.8	74
1500	3.1	-12.5	31	030	.5	089	5.7	65	1500	.2	*****	33	108	.5	050	1.9	66	1500	.9	*****	30	324	.4	317	1.9	67
1800	-.9	-12.9	40	061	1.4	063	4.4	19	1800	-1.7	*****	38	143	.9	140	2.5	30	1800	-.9	*****	37	087	.2	025	1.9	31
2100	-4.7	*****	**	121	1.4	102	5.1	0	2100	-4.3	*****	62	140	.5	157	2.5	0	2100	-3.0	-11.5	52	082	1.0	041	3.2	0
2400	-4.7	-16.7	39	041	1.2	346	3.2	0	2400	-4.5	-11.3	59	070	1.2	054	2.5	0	2400	-3.2	-14.7	41	056	1.1	058	2.5	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 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	-3.8	-14.1	45	057	1.3	060	3.2	0	0300	-1.6	-11.8	46	051	1.9	062	7.0	0	0300	-6	-8.3	56	054	1.2	052	3.2	0
0600	-3.3	-14.2	43	047	1.3	048	3.8	4	0600	-2.1	-12.5	45	049	3.3	065	7.6	4	0600	-1	-8.3	54	064	1.6	062	3.2	5
0900	-2.1	-16.4	33	056	1.6	066	4.4	51	0900	-3	-13.2	36	043	2.5	042	5.7	51	0900	2.2	-8.9	44	044	1.4	042	3.2	51
1200	2.1	-18.0	21	043	1.5	042	4.4	73	1200	2.2	-8.9	44	082	4.7	086	8.9	73	1200	7.2	*****	28	042	1.2	038	2.5	74
1500	2.0	-16.1	25	061	1.5	060	6.3	66	1500	5.9	-8.9	34	056	2.7	087	8.3	66	1500	6.6	*****	31	108	.6	137	2.5	66
1800	1.2	-11.7	38	082	2.1	087	6.3	50	1800	4.1	*****	38	352	1.4	018	5.1	30	1800	3.4	*****	38	142	.5	137	1.9	31
2100	-1.2	-12.0	44	059	2.6	076	6.3	1	2100	.9	-7.6	53	038	1.1	037	4.4	1	2100	.1	*****	66	045	.7	037	1.9	1
2400	-1.9	-11.8	47	055	2.7	048	7.0	0	2400	-2	-7.7	57	048	1.9	053	5.7	0	2400	0.0	-5.8	65	061	1.1	077	3.2	0

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

## R &amp; M CONSULTANTS, INC.

## SUSITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR GLACIER WEATHER STATION  
DATA TAKEN DURING May, 1984

DAY 10

DAY 11

DAY 12

HOUR	DEW	WIND	WIND GUST MAX.	POINT	NDNG TEMP.	RH	DIR.	SPD.	DIR.	GUST	RAD	POINT	NDNG TEMP.	RH	DIR.	SPD.	DIR.	GUST	RAD	POINT	NDNG TEMP.	RH	DIR.	SPD.	DIR.	GUST	RAD
	DEG C	DEG C	%	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	MW
0300	-2.6	-6.9	72	052	1.0	042	2.5	0	0300	-5.5	-6.5	93	322	.9	093	3.8	0	0300	-9.0	-18.8	45	048	2.2	051	5.7	0	
0600	-1.6	-7.1	66	057	1.5	044	3.8	4	0600	-6.2	-12.1	63	042	.8	123	2.5	5	0600	-8.1	-19.1	41	069	1.5	065	3.8	5	
0900	-1.7	-7.3	61	087	1.6	110	5.1	51	0900	-1.2	****	50	049	.8	053	1.9	20	0900	-4.5	-17.8	35	061	1.1	054	3.2	52	
1200	4.1	****	37	165	.6	086	3.2	74	1200	-2.9	-15.1	39	119	1.5	128	4.4	58	1200	5.0	****	18	135	.5	067	1.9	79	
1500	5.3	****	32	348	.1	325	1.9	67	1500	-1.8	-18.0	28	154	1.1	162	3.2	75	1500	2.5	****	18	324	.6	349	2.5	67	
1800	1.5	-7.8	50	199	.5	236	3.2	24	1800	-1.4	-19.5	24	185	1.2	170	3.8	32	1800	-2.2	-16.1	34	145	.8	125	3.8	32	
2100	-1.7	-2.6	94	336	.1	280	3.8	1	2100	-7.2	-17.5	44	135	.7	130	2.5	1	2100	-2.2	-13.5	42	068	1.2	043	3.8	1	
2400	-4.0	-5.9	87	075	.7	081	3.2	0	2400	-7.3	-18.4	41	099	1.6	104	5.1	0	2400	-2.0	-11.6	48	057	1.5	061	3.8	0	

DAY 13

DAY 14

DAY 15

HOUR	DEW	WIND	WIND GUST MAX.	POINT	NDNG TEMP.	RH	DIR.	SPD.	DIR.	GUST	RAD	POINT	NDNG TEMP.	RH	DIR.	SPD.	DIR.	GUST	RAD	POINT	NDNG TEMP.	RH	DIR.	SPD.	DIR.	GUST	RAD
	DEG C	DEG C	%	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	MW
0300	-2.7	-10.7	54	067	1.3	051	3.8	0	0300	-2.2	-10.0	55	064	1.0	061	3.2	0	0300	2.8	-10.9	36	065	1.4	066	3.8	0	
0600	-2.5	-10.8	53	061	.8	031	2.5	5	0600	-1.3	-9.4	54	058	1.2	064	2.5	10	0600	3.0	-8.8	42	071	2.7	077	4.4	6	
0900	-1.1	-11.3	46	041	1.4	039	3.8	39	0900	1.4	-9.9	43	077	1.3	035	3.2	50	0900	4.7	-8.2	39	072	3.5	060	6.3	51	
1200	2.6	****	30	346	.7	006	1.9	74	1200	2.7	-11.4	35	059	1.0	037	3.2	75	1200	8.9	****	26	144	1.9	115	5.7	81	
1500	1.6	-12.7	34	019	1.2	030	2.5	66	1500	3.0	-13.4	29	125	.7	174	2.5	68	1500	6.8	-10.6	28	233	.7	173	5.1	71	
1800	-.5	****	44	023	1.2	024	2.5	28	1800	5.3	****	30	095	1.0	040	2.5	33	1800	5.9	-11.8	27	179	.7	100	4.4	33	
2100	-1.4	-9.8	53	058	1.7	039	3.8	1	2100	2.1	-13.4	31	055	1.7	060	4.4	2	2100	3.6	-11.3	33	064	3.3	067	6.3	2	
2400	-2.0	-9.2	58	077	1.3	094	2.5	0	2400	1.3	-9.7	44	059	1.7	051	4.4	0	2400	3.8	-12.3	30	065	3.9	058	7.6	0	

DAY 16

DAY 17

DAY 18

HOUR	DEW	WIND	WIND GUST MAX.	POINT	NDNG TEMP.	RH	DIR.	SPD.	DIR.	GUST	RAD	POINT	NDNG TEMP.	RH	DIR.	SPD.	DIR.	GUST	RAD	POINT	NDNG TEMP.	RH	DIR.	SPD.	DIR.	GUST	RAD
	DEG C	DEG C	%	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	MW
0300	2.9	-14.8	26	057	4.7	056	8.9	0	0300	4.0	-8.8	39	064	1.6	076	3.8	0	0300	.5	-4.9	67	075	1.4	093	6.3	0	
0600	3.6	-16.2	22	061	4.1	060	9.5	11	0600	3.7	-10.1	36	055	1.5	053	3.8	4	0600	1.2	-7.9	51	338	.4	107	5.7	5	
0900	5.8	****	20	091	1.6	080	5.7	52	0900	8.2	-9.4	28	056	1.4	056	3.2	54	0900	.6	****	44	323	.7	298	2.5	29	
1200	9.0	****	19	133	.7	145	3.2	74	1200	9.7	-8.5	27	070	1.2	069	3.8	78	1200	4.9	-3.4	55	119	.6	144	2.5	76	
1500	5.8	-12.8	25	027	1.1	020	3.8	62	1500	10.5	-8.8	25	077	2.2	101	5.7	69	1500	6.5	-							

## R &amp; M CONSULTANTS, INC.

## SUSITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR GLACIER WEATHER STATION  
DATA TAKEN DURING May, 1984

DAY 19

DAY 20

DAY 21

HOUR	DEW	WIND	WIND GUST MAX.	POINT	NDNG TEMP.	RH	DIR.	SPD.	DIR.	GUST	RAD	POINT	NDNG TEMP.	RH	DIR.	SPD.	DIR.	GUST	RAD	POINT	NDNG TEMP.	RH	DIR.	SPD.	DIR.	GUST	RAD			
	DEG C	DEG C	%	DEG	M/S	DEG	M/S	MW	DEG	DEG C	%	DEG	M/S	DEG	M/S	MW	DEG	DEG C	%	DEG	M/S	DEG	M/S	MW	DEG	DEG C	%	DEG	M/S	MW
0300	2.1	.6	90	045	1.8	023	4.4	0	0300	3.5	*****	59	067	2.1	077	6.3	0	0300	2.7	-2.4	69	032	1.0	063	2.5	0				
0600	2.7	.6	86	037	2.5	045	5.7	6	0600	3.8	-4.7	54	064	1.7	073	4.4	3	0600	2.6	-1.5	74	055	1.0	027	2.5	?				
0900	6.0	-3.4	51	062	1.6	058	3.8	58	0900	6.4	-5.4	43	058	1.2	076	3.2	54	0900	6.0	-3.1	52	091	1.3	067	3.2	70				
1200	7.7	-7.7	33	089	1.0	046	3.8	29	1200	10.2	-6.3	31	032	1.2	048	3.8	76	1200	10.0	*****	41	026	.3	354	2.5	80				
1500	6.7	-6.4	39	066	1.3	033	4.4	46	1500	8.8	-6.7	33	049	1.3	060	3.8	63	1500	8.4	*****	41	034	.6	359	1.9	70				
1800	6.6	-1.5	56	100	3.6	079	8.9	40	1800	7.8	-6.5	36	065	1.1	127	3.2	34	1800	7.4	-2.9	48	058	1.4	083	4.4	15				
2100	4.5	-1.3	66	072	1.8	073	4.4	1	2100	5.9	*****	50	065	1.4	076	3.8	1	2100	2.8	-5.1	56	342	.8	245	4.4	2				
2400	4.4	-3.1	58	064	1.9	068	4.4	0	2400	5.5	-3.3	53	048	1.3	027	3.8	0	2400	1.0	*****	**	317	1.4	270	5.1	0				

DAY 22

DAY 23

DAY 24

HOUR	DEW	WIND	WIND GUST MAX.	POINT	NDNG TEMP.	RH	DIR.	SPD.	DIR.	GUST	RAD	POINT	NDNG TEMP.	RH	DIR.	SPD.	DIR.	GUST	RAD	POINT	NDNG TEMP.	RH	DIR.	SPD.	DIR.	GUST	RAD			
	DEG C	DEG C	%	DEG	M/S	DEG	M/S	MW	DEG	DEG C	%	DEG	M/S	DEG	M/S	MW	DEG	DEG C	%	DEG	M/S	DEG	M/S	MW	DEG	DEG C	%	DEG	M/S	MW
0300	0.0	*****	**	285	.7	264	1.9	0	0300	3.7	*****	**	057	1.9	064	8.9	0	0300	.9	*****	**	039	.7	007	2.5	0				
0600	-1	*****	**	***	***	***	1.9	1	0600	3.9	*****	**	048	1.5	019	3.8	4	0600	.3	*****	**	235	.5	250	2.5	5				
0900	6.4	*****	**	355	.8	346	1.9	53	0900	4.6	*****	**	053	1.0	067	2.5	31	0900	1.3	*****	**	284	.9	257	3.2	27				
1200	3.6	*****	**	110	.6	104	3.8	83	1200	8.1	*****	**	353	1.5	341	3.8	58	1200	3.6	*****	**	299	.8	273	1.9	48				
1500	4.5	*****	**	335	.6	240	3.2	74	1500	7.7	*****	**	122	2.6	101	6.3	60	1500	1.7	*****	**	300	1.0	261	3.2	35				
1800	5.6	*****	**	112	2.0	133	5.7	39	1800	8.1	*****	**	105	1.8	118	5.1	38	1800	1.0	*****	**	322	1.2	293	2.5	15				
2100	3.4	*****	**	056	1.1	032	3.8	1	2100	3.1	*****	**	345	1.3	003	5.1	2	2100	1.6	*****	**	007	1.0	317	2.5	1				
2400	2.3	*****	**	072	1.2	063	4.4	0	2400	2.5	*****	**	070	1.8	096	4.4	0	2400	1.6	*****	**	050	1.1	027	3.8	0				

DAY 25

DAY 26

DAY 27

HOUR	DEW	WIND	WIND GUST MAX.	POINT	NDNG TEMP.	RH	DIR.	SPD.	DIR.	GUST	RAD	POINT	NDNG TEMP.	RH	DIR.	SPD.	DIR.	GUST	RAD	POINT	NDNG TEMP.	RH	DIR.	SPD.	DIR.	GUST	RAD			
	DEG C	DEG C	%	DEG	M/S	DEG	M/S	MW	DEG	DEG C	%	DEG	M/S	DEG	M/S	MW	DEG	DEG C	%	DEG	M/S	DEG	M/S	MW	DEG	DEG C	%	DEG	M/S	MW
0300	-6	*****	**	144	.3	274	3.2	0	0300	-3.0	*****	**	***	***	***	3.2	0	0300	-3.3	*****	**	274	1.0	232	5.1	0				
0600	-1.4	*****	**	300	1.6	253	4.4	3	0600	-1.9	*****	**	***	***	***	1.9	14	0600	-1.3	*****	**	267	1.3	236	5.1	11				
0900	-8	*****	**	324	1.0	017	3.8	14	0900	-6	*****	**	264	.8	253	1.9	30	0900	1.7	*****	**	272	.7	280	2.5	30				
1200	1.3	*****	**	318	1.3	337	3.2	52	1200	.1	*****	**	334	1.3	357	3.2	55	1200	3.6	*****	**	296	.8	319	3.8	82				
1500	1.9	*****	**	334	.5	154	3.2</																							

## R &amp; M CONSULTANTS, INC.

## SUSITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR GLACIER WEATHER STATION  
DATA TAKEN DURING May, 1984

DAY 28

DAY 29

DAY 30

HOUR	DEW	WIND	WIND GUST MAX.	POINT	NDNG TEMP.	RH	DIR.	SPD.	DIR.	GUST	RAD	POINT	NDNG TEMP.	RH	DIR.	SPD.	DIR.	GUST	RAD	POINT	NDNG TEMP.	RH	DIR.	SPD.	DIR.	GUST	RAD	
	DEG C	DEG C	%	DEG	M/S	MW		DEG C	DEG C	%	DEG	M/S	MW		DEG C	DEG C	%	DEG	M/S	MW		DEG C	DEG C	%	DEG	M/S	MW	
0300	-3.1	*****	**	066	.9	054	1.9	0	0300	-2.1	*****	**	080	.8	086	2.5	0	0300	-2.6	*****	**	***	***	***	1.9	0		
0600	-2.8	*****	**	062	1.3	041	3.2	4	0600	-1.6	*****	**	067	1.1	037	2.5	6	0600	-1.7	*****	**	***	***	***	2.5	10		
0900	.3	*****	**	080	.9	143	3.2	57	0900	.9	*****	**	042	1.0	040	2.5	50	0900	.3	*****	**	112	1.1	138	3.2	67		
1200	1.6	*****	**	117	.6	194	2.5	79	1200	.1	*****	**	347	1.2	287	7.0	53	1200	2.7	*****	**	101	.8	173	3.8	79		
1500	6.8	*****	**	029	.9	042	3.8	72	1500	1.4	*****	**	219	1.4	170	4.4	52	1500	4.6	*****	**	013	1.2	349	3.2	75		
1800	3.0	*****	**	265	.8	278	3.2	39	1800	-.8	*****	**	260	1.3	251	10.8	16	1800	3.1	*****	**	010	1.2	029	3.2	24		
2100	0.0	*****	**	124	1.1	114	4.4	2	2100	-1.7	*****	**	254	1.0	228	2.5	7	2100	.9	*****	**	004	.9	342	3.8	3		
2400	-.9	*****	**	048	1.1	030	3.2	0	2400	-2.4	*****	**	123	1.7	131	3.8	0	2400	.5	*****	**	080	1.9	140	5.1	0		

DAY 31

HOUR DEW WIND WIND GUST MAX.  
NDNG TEMP. POINT RH DIR. SPD. DIR. GUST RAD  
DEG C DEG C % DEG. M/S MW

0300	.3	*****	**	056	1.3	073	3.8	0
0600	.2	*****	**	045	1.1	030	2.5	7
0900	1.1	*****	**	044	.7	193	3.2	75
1200	3.7	*****	**	252	.5	177	3.8	84
1500	4.7	*****	**	168	1.9	166	5.1	80
1800	3.7	*****	**	316	1.0	323	8.3	27
2100	0.0	*****	**	041	3.4	027	11.4	6
2400	1.7	*****	**	062	1.9	019	8.9	0

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

## E2 &amp; M CONSULTANTS, INC.

## SISUSSITNA HYDRO ELECTRIC PROJECT PROGRESS

MONTHLY SUMMARY FOR GLACIER WEATHER STATION  
DATA TAKEN DURING May, 1984

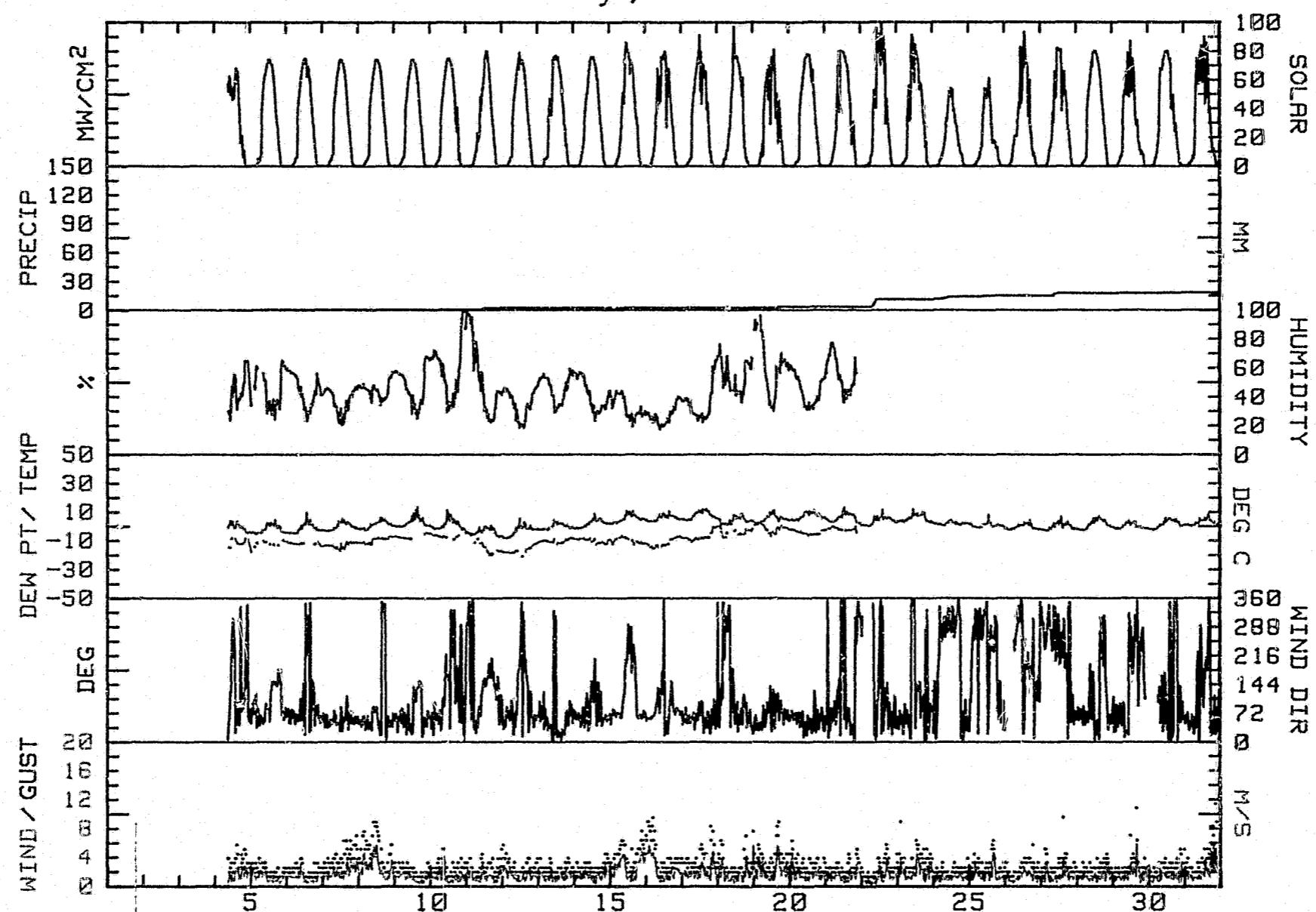
DAY	MAX. TEMP., DEG C			MIN. TEMP., DEG C			MEAN TEMP., DEG C			RES. WIND DIR.		RES. WIND SPD. M/S		AVG. WIND SPD. M/S	MAX. WIND DIR.	GUST SPD. M/S	P'VAL %	MAX. RH %	MEAN DP DEG C	MEAN PRECIP MM	DAY'S SOLAR ENERGY WH/SDM	
	MAX.	MIN.	MEAN	WIND DIR.	SPD.	M/S	MAX.	WIND DIR.	SPD. M/S	DIR.	SPD. M/S	RH %	DP DEG C	PRECIP MM								
1	*****	*****	*****	***	***	***	***	***	***	***	***	**	***	***	***	***	***	***	***	***	1	
2	*****	*****	*****	**	***	***	***	***	***	***	***	**	***	***	***	***	***	***	***	***	2	
3	*****	*****	*****	***	***	***	***	***	***	***	***	**	***	***	***	***	***	***	***	***	3	
4	3.8	-5.2	-1.7	071	.8	1.6	089	5.7	E	44	-12.2	0.0	7858	4								
5	4.3	-6.2	-1.0	079	.9	1.2	038	3.8	ENE	51	-12.5	.4	6705	5								
6	9.2	-5.4	1.9	067	.9	1.1	107	3.8	ENE	49	-12.7	0.0	6615	6								
7	4.7	-4.1	.3	059	1.8	1.9	048	7.0	NE	37	-13.9	0.0	6615	7								
8	5.9	-3.2	1.4	053	2.3	2.5	086	8.9	NE	45	-10.2	0.0	6650	8								
9	13.2	-8.8	6.2	060	.9	1.1	052	3.2	ENE	55	-7.8	0.0	6770	9								
10	11.0	-4.0	3.5	079	.5	1.1	110	5.1	NE	64	-6.9	0.0	6895	10								
11	.1	-8.0	-4.0	113	.6	1.3	104	5.1	SE	53	-14.1	2.0	5965	11								
12	5.0	-9.2	-2.1	064	.9	1.4	051	5.7	ENE	39	-17.2	0.0	6950	12								
13	4.1	-2.9	.6	045	1.1	1.3	051	3.8	NNE	47	-10.9	0.0	6815	13								
14	8.5	-2.2	3.2	069	1.1	1.3	060	4.4	ENE	41	-10.8	0.0	7075	14								
15	10.4	1.5	6.0	078	1.8	2.5	058	7.6	ENE	34	-10.5	0.0	7020	15								
16	10.4	2.8	6.6	070	2.0	2.2	060	9.5	ENE	28	-12.1	0.0	7080	16								
17	11.8	3.7	7.8	061	1.6	1.8	021	8.3	ENE	34	-8.1	0.0	7075	17								
18	8.5	.5	4.5	059	1.0	1.5	020	7.6	NE	57	-4.3	0.0	6575	18								
19	10.9	1.8	6.4	069	1.8	2.1	079	8.9	ENE	63	-2.1	1.0	6520	19								
20	10.9	3.4	7.2	058	1.4	1.5	077	6.3	ENE	44	-5.0	0.0	7275	20								
21	12.8	1.0	6.9	034	.7	1.3	270	5.1	NE	58	-2.5	0.0	7230	21								
22	11.2	-.2	5.5	077	.7	1.1	133	5.7	NNE	**	*****	7.8	7200	22								
23	11.9	2.3	7.1	064	1.2	1.9	064	8.9	NE	**	*****	0.0	7370	23								
24	3.7	0.0	1.9	331	.6	1.1	027	3.8	NW	**	*****	3.0	3960	24								
25	7.9	-1.5	3.2	291	.6	1.5	227	6.3	NW	**	*****	.8	3955	25								
26	3.7	-3.0	.4	226	.2	1.2	223	5.7	S	**	*****	0.0	6130	26								
27	6.3	-3.6	1.4	260	.5	1.3	210	9.5	NNW	**	*****	2.6	6810	27								
28	6.8	-3.2	1.8	071	.6	1.2	114	4.4	ENE	**	*****	0.0	7670	28								
29	3.6	-2.4	.6	317	.1	1.5	251	10.8	E	**	*****	0.0	5975	29								
30	5.7	-3.3	1.2	055	.9	1.3	140	5.1	N	**	*****	.6	7610	30								
31	8.4	-.3	4.1	052	.9	2.0	027	11.4	NE	**	*****	0.0	7395	31								
MONTH	13.2	-9.2	2.9	061	.9	1.5	027	11.4	ENE	46	-9.6	18.2	187763									

GUST VEL. AT MAX. GUST MINUS 2 INTERVALS 5.7  
 GUST VEL. AT MAX. GUST MINUS 1 INTERVAL 4.4  
 GUST VEL. AT MAX. GUST PLUS 1 INTERVAL 8.9  
 GUST VEL. AT MAX. GUST PLUS 2 INTERVALS 3.2

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 INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

R&M CONSULTANTS, INC.  
SUSITNA HYDROELECTRIC PROJECT  
GLACIER WEATHER STATION  
May, 1984



## R &amp; M CONSULTANTS, INC.

## SUSITNA HYDROELECTRIC PROJECT

WIND FREQUENCY SUMMARY FOR GLACIER WEATHER STATION  
DATA TAKEN DURING May, 1984

DIRECTION	VELOCITY (M/S)								TOTAL
	0-2	1-0	3-0	6-0	10-0	15-0	20-0	OR GREATER	
	TO	TO	TO	TO	TO	TO	TO		
1-0	3-0	6-0	10-0	15-0	20-0	20-0	20-0		
N	1.17	3.12	0.00	0.00	0.00	0.00	0.00	0.00	4.28
NNE	3.12	7.09	.55	0.00	0.00	0.00	0.00	0.00	10.75
NE	2.18	15.42	1.09	0.00	0.00	0.00	0.00	0.00	18.69
ENE	3.12	17.06	3.12	0.00	0.00	0.00	0.00	0.00	23.29
E	1.87	6.00	1.01	0.00	0.00	0.00	0.00	0.00	8.88
ESE	1.17	3.43	.70	0.00	0.00	0.00	0.00	0.00	5.30
SE	2.49	1.79	.47	0.00	0.00	0.00	0.00	0.00	4.75
SSE	1.32	1.87	.31	0.00	0.00	0.00	0.00	0.00	3.50
S	.70	2.10	.08	0.00	0.00	0.00	0.00	0.00	2.88
SSW	.86	1.17	.08	0.00	0.00	0.00	0.00	0.00	2.10
SW	.78	1.01	.39	0.00	0.00	0.00	0.00	0.00	2.18
WSW	.39	1.01	.31	0.00	0.00	0.00	0.00	0.00	1.71
W	.78	1.48	0.00	0.00	0.00	0.00	0.00	0.00	2.26
WNW	1.32	1.32	0.00	0.00	0.00	0.00	0.00	0.00	2.65
NW	1.17	1.87	.08	0.00	0.00	0.00	0.00	0.00	3.12
NNW	.86	2.80	0.00	0.00	0.00	0.00	0.00	0.00	3.66
CALM								0.00	
TOTAL	23.29	68.54	8.18	0.00	0.00	0.00	0.00	0.00	100.00

NOTE: ALL FREQUENCIES ARE EXPRESSED IN PERCENT

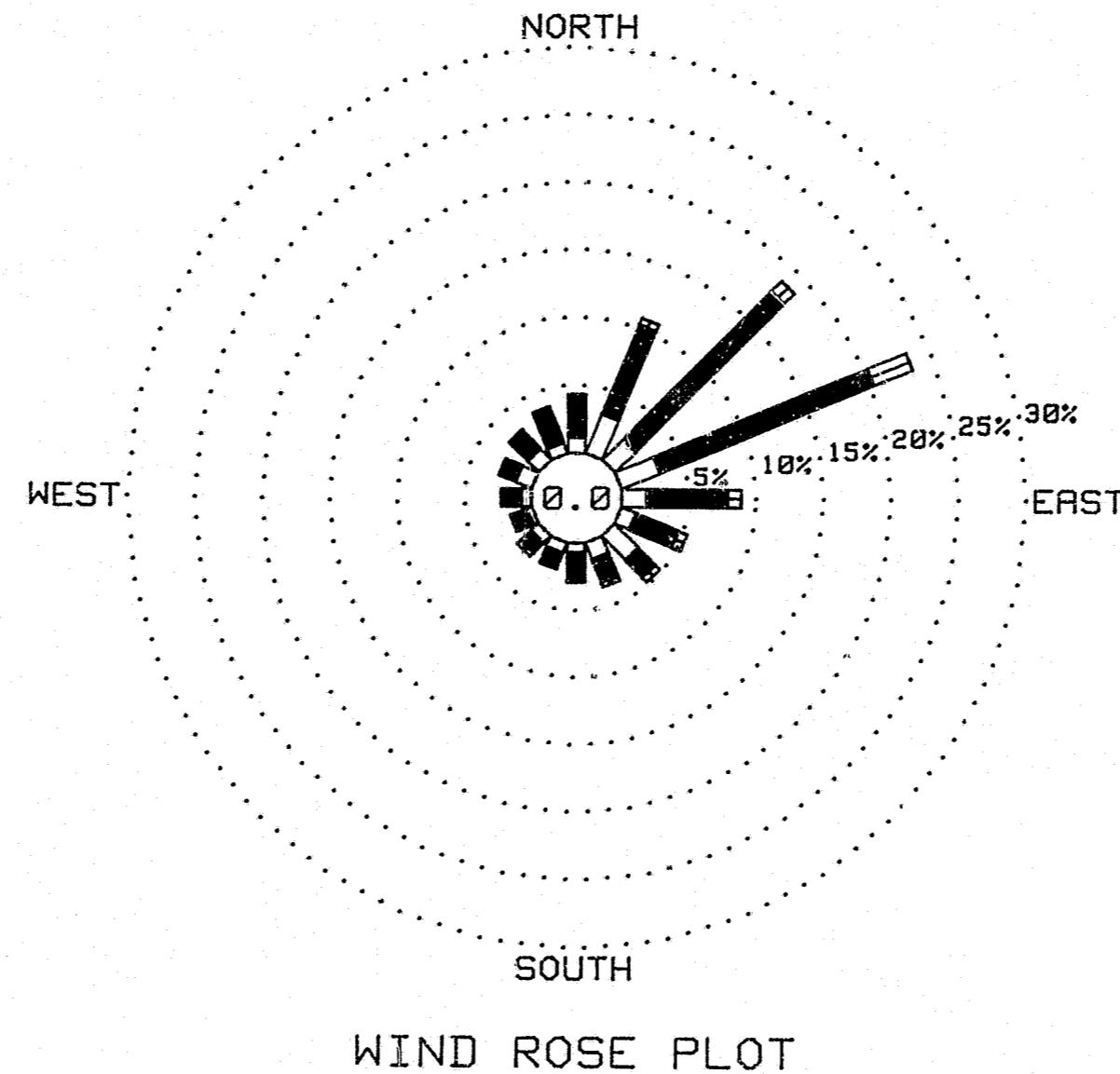
1284 VALID WIND OBSERVATIONS USED TO DEVELOP FREQUENCY SUMMARY

1488 WIND OBSERVATIONS WOULD HAVE BEEN CORRECT FOR 30 MINUTE DATA.

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

00276

R&M CONSULTANTS, INC.  
SUSITNA HYDROELECTRIC PROJECT  
GLACIER WEATHER STATION  
May, 1984



## R &amp; M CONSULTANTS, INC.

## SUSTAINA HYDRO ELECTRIC PROJECT

HOURLY SOLAR RADIATION SUMMARY FOR GLACIER WEATHER STATION  
DATA TAKEN DURING MAY, 1984

SOLAR RADIATION VALUES MEASURED IN MILLIWATTS PER SQUARE CENTIMETER

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	Avg
1	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	22
2	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	23
3	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	23
4	***	***	***	***	***	***	***	***	57	57	55	52	50	55	67	62	42	18	15	9	2	0	0	0	22
5	0	0	0	0	1	4	5	23	52	62	68	72	74	72	68	60	48	34	20	10	1	0	0	0	26
6	0	0	0	0	1	3	6	22	48	59	67	73	75	68	69	61	48	36	21	10	1	0	0	0	28
7	0	0	0	0	1	4	6	23	48	59	66	72	74	72	67	60	48	34	20	10	2	0	0	0	28
8	0	0	0	0	2	4	6	23	48	59	67	72	74	72	68	60	48	34	21	10	2	0	0	0	28
9	0	0	0	0	2	4	6	28	48	59	67	73	74	73	68	60	49	35	22	10	2	0	0	0	28
10	0	0	0	0	2	4	7	33	48	59	68	73	75	73	69	61	51	29	34	7	2	0	0	0	29
11	0	0	0	0	1	4	9	17	19	36	44	56	71	78	78	65	52	36	22	12	2	0	0	0	25
12	0	0	0	0	2	4	7	35	49	60	69	73	74	74	69	61	50	36	22	12	2	0	0	0	29
13	0	0	0	0	3	5	7	35	43	44	74	75	76	75	68	61	48	35	20	12	2	0	0	0	28
14	0	0	0	0	2	8	15	33	47	55	68	74	76	75	70	62	51	37	23	12	3	0	0	0	29
15	0	0	0	0	2	5	10	21	41	47	72	84	80	70	73	65	53	39	30	11	3	1	0	0	29
16	0	0	0	1	4	9	20	36	60	51	61	75	77	78	45	67	52	38	24	11	3	1	0	0	30
17	0	0	0	0	2	4	6	38	52	62	69	76	72	62	71	63	59	42	22	10	3	0	0	0	29
18	0	0	0	0	3	5	11	18	27	45	63	87	76	76	71	63	53	44	13	6	3	0	0	0	27
19	0	0	0	1	2	8	11	40	57	66	58	49	74	72	64	42	29	43	24	15	2	1	0	0	27
20	0	0	0	1	2	3	5	40	52	63	71	76	78	77	69	63	54	39	23	14	2	1	0	0	30
21	0	0	0	1	3	8	14	24	55	47	77	80	79	76	71	63	50	29	20	22	6	0	0	0	30
22	0	0	0	1	2	1	4	9	42	44	68	80	87	87	80	77	55	43	25	15	3	1	0	0	30
23	0	0	0	1	2	4	6	38	44	58	90	72	82	78	68	56	54	42	29	15	3	1	0	0	31
24	0	0	0	0	2	5	8	13	23	32	42	50	53	46	38	30	23	15	10	8	2	1	0	0	17
25	0	0	0	0	1	3	5	8	13	30	47	53	48	59	48	24	17	17	12	10	3	1	0	0	16
26	0	0	0	1	3	10	18	21	26	40	62	49	75	91	72	54	47	24	12	8	4	1	0	0	26
27	0	0	0	0	2	8	15	20	34	66	57	82	81	81	43	59	52	43	25	16	6	1	0	0	28
28	0	0	0	1	2	4	6	42	55	65	71	79	80	78	74	65	55	43	29	17	6	1	0	0	32
29	0	0	0	1	3	6	9	42	51	57	75	51	69	69	59	34	30	17	11	9	8	1	0	0	25
30	0	0	0	1	4	8	18	45	68	69	75	78	80	79	75	42	45	31	27	14	6	2	0	0	32
31	0	0	0	2	3	5	7	35	72	62	69	82	70	75	62	84	48	34	15	12	7	2	0	0	31

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

R & M CONSULTANTS, INC.  
SUSITNA HYDROELECTRIC PROJECT

OBSERVATION SUMMARY FOR GLACIER WEATHER STATION  
DATA TAKEN DURING May, 1984

PARAMETER	NUMBER OF USABLE OBSERVATIONS	PERCENT OF TOTAL OBSERVATIONS
TEMPERATURE	1326	89
WIND SPEED	1325	89
WIND DIRECTION	1284	86
PEAK GUST	1325	89
RELATIVE HUMIDITY	632	42
PRECIPITATION	1326	89
SOLAR RADIATION	1326	89
DEW POINT	632	42

THERE ARE 1488 POSSIBLE OBSERVATIONS THIS MONTH FOR EACH PARAMETER.  
THE DATA RECORDING INTERVAL IS 30 MINUTES.

THE FOLLOWING ADJUSTMENTS HAVE BEEN MADE TO THIS MONTH'S DATA:

1. Solar -1 mW/cm<sup>2</sup>

Additional comments on this month's data:

1. Station reinstalled on 5/4. No data prior to this date.
2. RH data suspected to be poor all month due to bad oscillator, but have been published as indicative of true RH. All RH data invalid after 5/23. Many erratic values have been deleted prior to this date also.

## R &amp; M CONSULTANTS, INC.

## GLACIER HYDRO ELECTRIC PROJECT

HOURLY PRECIPITATION SUMMARY FOR GLACIER WEATHER STATION  
DATA TAKEN DURING June, 1984

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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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		
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	0.0	0.0	0.0	2		
3	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	0.2	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	3	
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	0.0	4	
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	0.0	5	
6	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.6	0.8	1.0	1.4	1.6	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6	
7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	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	0.0	0.2	7	
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	0.0	8	
9	0.0	.8	2.2	0.0	0.0	0.0	0.0	0.0	2.8	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	0.0	0.6	9	
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	0.0	10	
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	0.0	11	
12	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	0.4	2.2	0.0	0.4	1.6	1.6	0.0	12	
13	.6	1.2	2.4	1.4	.6	.4	.2	0.0	0.0	0.0	2.0	0.0	.2	.6	.2	.2	0.0	.2	.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	13
14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	.4	2.4	2.0	0.0	14	
15	3.2	3.6	3.8	4.0	1.8	1.6	0.0	1.2	3.0	3.2	2.6	2.6	2.0	2.0	1.4	1.2	1.6	.6	.8	2.0	2.8	3.8	4.2	4.8	0.0	15	
16	1.2	1.2	.6	1.2	.8	1.8	1.4	2.2	1.2	1.6	.8	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	16	
17	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	
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	0.0	18	
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	0.0	19	
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	0.0	0.0	20	
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	0.0	21	
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	1.2	2.2	0.0	.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	22	
23	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0	0.0	.2	.6	0.0	0.0	23	
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	0.0	24	
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	0.0	25	
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	0.0	26	
27	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	27	
28	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	28	
29	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	29	
30	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	30	

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

## R &amp; M CONSULTANTS, INC.

## SUSITNA HYDRO ELECTRIC PROJECT

THREE HOUR SUMMARY FOR GLACIER WEATHER STATION  
DATA TAKEN DURING June, 1984

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	.3	*****	**	080	1.6	080	7.0	0 0300	2.6	*****	**	039	3.0	039	8.3	0 0300	4.1	*****	**	067	1.6	079	3.8	0
0600	1.0	*****	**	028	1.8	045	6.3	20 0600	2.2	*****	**	052	2.2	043	5.1	5 0600	4.3	*****	**	067	1.6	092	3.8	10
0900	3.4	*****	**	121	2.4	106	7.0	61 0900	5.5	*****	**	101	1.2	093	3.8	63 0900	4.4	*****	**	073	2.0	040	5.1	40
1200	4.6	*****	**	136	4.4	151	10.2	81 1200	5.1	*****	**	011	1.3	321	10.8	86 1200	4.8	*****	**	009	2.3	328	8.3	57
1500	3.6	*****	**	156	3.6	222	8.3	72 1500	6.1	*****	**	141	3.4	118	7.0	72 1500	2.8	*****	**	121	2.7	101	7.6	21
1800	5.3	*****	**	052	.7	261	10.2	39 1800	7.0	*****	**	153	2.7	131	5.7	40 1800	6.0	*****	**	108	2.4	128	6.3	32
2100	2.9	*****	**	032	2.2	001	12.1	3 2100	5.1	*****	**	059	2.9	108	8.9	2 2100	2.8	*****	**	067	2.5	128	13.3	6
2400	2.8	*****	**	064	1.9	086	7.0	0 2400	3.8	*****	**	062	2.0	346	8.3	0 2400	3.9	*****	**	064	1.7	071	4.4	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	3.3	*****	**	034	2.6	032	6.3	0 0300	4.4	*****	**	067	1.9	057	5.1	0 0300	5.3	*****	**	070	2.7	057	7.0	0
0600	4.4	*****	**	077	1.6	085	3.8	18 0600	3.7	*****	**	061	1.5	049	3.8	4 0600	3.5	*****	**	072	.5	200	6.3	5
0900	4.6	*****	**	033	3.2	040	12.1	28 0900	5.9	*****	**	061	1.4	048	4.4	58 0900	1.0	*****	**	249	2.0	229	7.0	14
1200	5.4	*****	**	358	3.4	334	9.5	52 1200	7.9	*****	**	112	1.1	125	5.7	77 1200	2.6	*****	**	300	.8	278	4.4	42
1500	4.7	*****	**	014	4.0	346	10.8	61 1500	9.9	*****	**	147	2.6	186	5.1	60 1500	3.8	*****	**	214	1.0	191	3.2	33
1800	5.4	*****	**	008	4.2	350	10.8	30 1800	8.9	*****	**	191	1.2	150	4.4	40 1800	2.6	*****	**	198	1.5	236	3.8	19
2100	5.2	*****	**	095	2.1	010	10.2	5 2100	7.7	*****	**	108	1.5	158	4.4	2 2100	.9	*****	**	125	2.3	193	7.6	2
2400	4.3	*****	**	069	1.7	078	3.8	0 2400	7.7	*****	**	075	1.8	096	5.1	0 2400	-4	*****	**	258	1.8	249	6.3	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	1.7	*****	**	051	.9	026	3.8	0 0300	1.9	*****	**	023	1.4	347	3.2	0 0300	4.9	*****	**	077	2.2	085	7.0	0
0600	2.0	*****	**	062	1.1	039	2.5	5 0600	1.5	*****	**	047	1.1	095	2.5	5 0600	3.6	*****	**	030	.8	065	2.5	6
0900	3.8	*****	**	034	1.0	071	2.5	60 0900	3.5	*****	**	108	.4	163	2.5	58 0900	3.9	*****	**	098	1.2	044	5.1	14
1200	8.2	*****	**	316	.7	291	2.5	80 1200	7.0	*****	**	101	.7	181	3.8	79 1200	5.8	*****	**	096	1.1	130	3.8	58
1500	5.8	*****	**	089	1.1	127	4.4	34 1500	11.7	*****	**	004	.8	275	3.2	72 1500	7.8	*****	**	168	.6	100	5.1	74
1800	7.7	*****	**	027	.2	114	4.4	43 1800	10.5	*****	**	188	.9	168	5.1	43 1800	3.5	*****	**	267	1.5	269	5.1	25
2100	4.8	*****	**	056	.6	058	2.5	3 2100	7.2	*****	**	008	1.1	006	4.4	5 2100	3.9	*****	**	357	.3	062	4.4	5
2400	2.6	*****	**	006	1.2	346	3.8	0 2400	5.3	*****	**	035	1.0	056	3.8	0 2400	3.3	*****	**	033	.6	051	2.5	0

\*\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*\*

## R &amp; M CONSULTANTS, INC.

## SUSITNA HYDROCELL PROJECT

THREE HOUR SUMMARY FOR GLACIER WEATHER STATION  
DATA TAKEN DURING June, 1984

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.	GUST RAD											
DEG C	DEG C	%	DEG. M/S	MW	DEG C	DEG C	%	DEG. M/S	MW	DEG C	DEG C	%	DEG. M/S	MW												
0300	2.6	****	**	318	.5	346	1.9	0	0300	5.3	****	33	068	1.0	054	3.2	0	0300	5.6	-5.2	46	045	1.5	025	5.1	0
0600	1.9	****	**	054	.5	055	3.8	7	0600	6.2	****	28	054	1.2	043	3.8	12	0600	6.1	-10.3	30	036	2.6	038	5.1	6
0900	3.9	****	**	065	.9	072	3.2	16	0900	9.4	****	26	129	.8	122	4.4	51	0900	5.7	-3.7	51	095	1.5	064	3.8	26
1200	7.0	****	**	039	.9	038	3.8	81	1200	8.6	-11.5	23	110	1.4	072	6.3	82	1200	8.3	****	**	110	2.3	105	5.1	51
1500	10.2	****	**	177	1.2	161	4.4	80	1500	11.0	-13.2	17	102	2.4	133	7.0	81	1500	8.2	-0	56	142	2.3	164	5.1	48
1800	8.1	****	**	233	1.5	210	4.4	41	1800	9.8	-10.3	25	297	1.5	300	5.1	15	1800	7.1	****	**	161	1.8	173	4.4	19
2100	7.7	****	**	291	.6	222	3.2	6	2100	7.7	-2.4	49	035	1.6	029	5.7	10	2100	5.8	-2.8	54	044	1.5	000	3.8	6
2400	5.9	****	**	071	1.0	085	2.5	0	2400	7.1	.1	61	042	1.5	061	4.4	0	2400	4.6	****	82	074	.8	065	2.5	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.	GUST RAD											
DEG C	DEG C	%	DEG. M/S	MW	DEG C	DEG C	%	DEG. M/S	MW	DEG C	DEG C	%	DEG. M/S	MW												
0300	4.0	.4	77	071	1.2	052	3.2	0	0300	3.4	****	**	078	1.0	049	3.2	0	0300	2.9	.6	85	033	1.7	018	5.1	0
0600	3.9	****	81	054	1.0	048	3.2	17	0600	4.1	****	**	056	1.6	026	3.8	7	0600	1.5	-4	87	046	1.0	063	3.8	4
0900	3.9	1.3	83	235	.8	178	1.9	30	0900	7.7	1.8	66	089	1.1	047	2.5	90	0900	1.8	****	73	354	.8	342	3.2	20
1200	3.8	1.5	85	271	.9	284	1.9	21	1200	6.7	****	**	130	2.2	147	6.3	52	1200	3.8	****	58	357	1.2	352	3.2	47
1500	3.2	.6	83	257	.7	250	3.2	17	1500	9.8	-2.6	42	170	2.6	147	5.7	74	1500	4.3	****	**	040	.7	170	3.2	31
1800	4.6	-4.2	53	010	.8	312	3.8	15	1800	10.0	-3.1	40	166	3.2	154	5.7	47	1800	3.0	.1	81	109	1.0	095	3.2	23
2100	5.6	****	**	055	1.4	015	4.4	6	2100	6.5	****	**	070	.3	059	8.3	6	2100	2.4	.9	90	098	.7	058	3.2	1
2400	3.6	****	**	037	1.0	346	3.8	0	2400	3.6	-0	77	023	2.1	004	5.7	0	2400	2.0	1.4	96	082	1.2	073	4.4	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.	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD											
DEG C	DEG C	%	DEG. M/S	MW	DEG C	DEG C	%	DEG. M/S	MW	DEG C	DEG C	%	DEG. M/S	MW												
0300	2.4	1.7	95	092	1.3	083	3.8	0	0300	2.8	****	91	083	.8	118	2.5	0	0300	5.1	-4.0	52	062	1.4	.062	3.8	0
0600	1.9	****	91	025	1.0	089	2.5	7	0600	3.2	****	92	101	.7	046	1.9	7	0600	6.3	****	41	057	1.2	051	2.5	4
0900	1.7	****	86	337	.4	002	1.9	15	0900	5.1	2.1	81	153	1.1	156	2.5	33	0900	9.0	-4.7	38	089	.8	109	3.2	57
1200	2.9	-2.6	67	232	.9	231	3.2	49	1200	6.5	****	**	213	1.5	204	4.4	73	1200	10.7	-4.7	34	330	1.4	284	5.7	77
1500	3.8	-2.6	63	205	1.7	203	3.2	53	1500	8.7	.9	58	221	2.0	198	4.4	60	1500	12.7	-10.4	19	167	2.6	143	6.3	72
1800	3.7	-.1	76	197	2.1	193	3.8	24	1800	9.3	-3.7	40	164	2.4	145	6.3	40	1800	13.8	****	20	242	1.4	228	4.4	42
2100	3.2	****	88	2																						

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## R &amp; M CONSULTANTS, INC.

## SUSITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR GLACIER WEATHER STATION  
 DATA TAKEN DURING June, 1984

DAY 19

DAY 20

DAY 21

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	8.9	-1.3	49	051	1.3	091	4.4	0	0300	9.1	-3.6	41	059	1.5	076	4.4	0	0300	9.4	-3.0	42	061	1.1	069	2.5	0
0600	8.5	-1.6	49	058	1.3	051	3.8	4	0600	9.5	-3.5	40	073	1.3	105	3.8	3	0600	8.3	-2.4	47	048	1.3	067	2.5	4
0900	10.5	-2.6	40	097	.7	042	3.2	58	0900	12.1	-7.4	25	069	.6	068	3.8	57	0900	10.9	****	35	075	.6	108	2.5	56
1200	13.6	-9	37	111	.6	019	5.7	81	1200	13.8	-6.0	25	235	.9	185	4.4	77	1200	13.7	-5.1	27	204	1.8	184	4.4	77
1500	13.0	-4.3	30	179	2.6	140	7.0	68	1500	14.0	-8.7	20	200	2.4	229	5.7	76	1500	14.3	-7.2	22	156	2.5	159	5.7	75
1800	12.5	-5.2	29	217	1.9	168	5.1	33	1800	12.3	-4.1	32	232	2.0	222	7.0	42	1800	14.2	-8.5	20	134	1.4	160	5.1	41
2100	11.2	-2.7	38	042	1.6	080	7.6	5	2100	10.7	-5.5	32	205	.9	208	3.2	9	2100	12.2	-7.4	25	065	1.6	096	5.1	3
2400	10.3	-3.2	39	065	1.4	094	3.8	0	2400	9.7	****	40	050	1.2	076	3.2	0	2400	9.8	3.8	66	075	2.0	036	5.7	0

DAY 22

DAY 23

DAY 24

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	10.3	2.4	58	069	1.1	075	4.4	0	0300	8.5	3.6	71	052	1.4	065	3.2	0	0300	6.1	-1.1	60	030	1.3	043	3.2	0
0600	10.2	1.8	56	064	1.0	064	2.5	6	0600	9.3	5.3	76	080	2.3	093	4.4	4	0600	6.8	-2.4	52	036	.8	063	2.5	3
0900	12.7	-1.4	38	125	.7	163	3.8	57	0900	9.3	4.4	71	017	.7	002	3.8	34	0900	8.5	****	**	114	1.0	185	3.2	57
1200	12.7	-2.9	34	185	1.6	134	5.7	39	1200	11.9	.9	47	204	1.4	168	3.8	62	1200	10.3	2.9	60	186	2.1	180	4.4	78
1500	8.9	4.9	76	110	2.9	081	10.8	7	1500	10.4	3.0	60	232	.7	231	7.6	73	1500	13.2	-3.3	32	143	4.4	141	7.6	93
1800	10.3	5.5	72	063	3.7	064	7.6	17	1800	10.2	6.0	75	202	1.9	198	6.3	21	1800	12.8	-4.5	30	133	4.4	140	7.6	47
2100	11.4	-2.9	37	080	1.6	093	3.8	10	2100	7.7	****	**	195	.3	227	8.3	6	2100	10.7	-3.9	36	102	3.0	127	5.7	3
2400	10.1	.1	50	056	1.8	027	3.8	0	2400	6.7	1.9	71	081	1.6	093	5.1	0	2400	8.8	-2.2	46	078	3.2	082	5.7	0

DAY 25

DAY 26

DAY 27

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	7.6	-1.1	54	082	1.8	085	3.8	0	0300	12.0	-3.5	34	061	2.1	057	5.1	0	0300	****	****	**	***	***	***	***	***
0600	7.3	-1.1	55	066	1.7	071	4.4	3	0600	12.1	-3.4	34	049	2.8	045	5.7	0	0600	****	****	**	***	***	***	***	***
0900	9.1	-2.0	46	115	.8	171	3.8	57	0900	11.3	-3.0	37	082	2.4	093	7.6	27	0900	****	****	**	***	***	***	***	***
1200	10.1	-2.7	41	198	1.8	176	4.4	78	1200	12.2	-1.8	39	139	1.7	129	9.5	93	1200	****	****	**	***	***	***	***	***
1500	13.0	-3.9	31	193	2.7	239	7.6	72	1500	****	****	**	***	***	278	10.2	***	1500	****	****	**	***	***	***	***	***
1800	13.3	-7.5	23	176	3.2	169	8.9	42	1800	****	****	**	***	***	***	***	***	1800	****	****	**	***	***	***	***	***
2100	12.4	****	26	172</td																						

## R &amp; M CONSULTANTS, INC.

## SUSSEX TNA HYDRO ELECTRIC PROJECT

THREE HOUR SUMMARY FOR GLACIER WEATHER STATION  
DATA TAKEN DURING June, 1984

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.	M/S	MW	DEG C	%	DEG. M/S	DEG C	%	DEG.	M/S	MW	

0300 ****	****	**	***	***	***	***	***	0300 ****	****	***	***	***	0300 ****	****	***	***	***	***	***	***	***
0600 ****	****	**	***	***	***	***	***	0600 ****	****	**	***	***	0600 ****	****	***	***	***	***	***	***	***
0900 ****	****	**	***	***	***	***	***	0900 ****	****	**	***	***	0900 ****	****	***	***	***	***	***	***	***
1200 ****	****	**	***	***	***	***	***	1200 ****	****	**	***	***	1200 ****	****	***	***	***	***	***	***	***
1500 ****	****	**	***	***	***	***	***	1500 ****	****	**	***	***	1500 ****	****	***	***	***	***	***	***	***
1800 ****	****	**	***	***	***	***	***	1800 ****	****	**	***	***	1800 ****	****	***	***	***	***	***	***	***
2100 ****	****	**	***	***	***	***	***	2100 ****	****	**	***	***	2100 ****	****	***	***	***	***	***	***	***
2400 ****	****	**	***	***	***	***	***	2400 ****	****	**	***	***	2400 ****	****	***	***	***	***	***	***	***

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

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## R &amp; M CONSULTANTS, INC.

## SUSITNA HYDROELECTRIC PROJECT

MONTHLY SUMMARY FOR GLACIER WEATHER STATION  
 DATA TAKEN DURING June, 1984

DAY	MAX, TEMP., DEG C	MIN., TEMP., DEG C	MEAN TEMP., DEG C	RES. DIR. DEG	RES. WIND DIR. SPD. M/S	Avg. WIND SPD. M/S	Max. WIND DIR. SPD. M/S	Max. GUST SPD. M/S	P/VAL DIR. %	Mean RH	Mean DP DEG C	Day's PRECIP MM	Day's SOLAR ENERGY WH/SQM	
1	6.9	.3	3.6	102	1.6	2.8	001	12.1	SE	**	*****	0.0	8065	1
2	7.4	1.7	4.6	081	1.6	2.7	321	10.8	NE	**	*****	0.0	7965	2
3	9.9	1.1	5.5	075	1.8	2.5	128	13.3	ENE	**	*****	1.6	5425	3
4	6.8	2.6	4.7	030	2.5	3.2	040	12.1	NE	**	*****	0.0	6160	4
5	10.1	3.6	6.9	099	1.2	2.0	125	5.7	ENE	**	*****	0.0	7645	5
6	6.8	-.4	3.2	189	.4	2.1	193	7.6	W	**	*****	3.8	4335	6
7	8.5	-.1	4.2	041	.7	1.2	127	4.4	N	**	*****	1.0	7495	7
8	11.7	1.5	6.6	041	.6	1.4	168	5.1	NE	**	*****	0.0	7930	8
9	8.4	3.1	5.8	075	.5	1.5	085	7.0	NE	**	*****	3.6	5120	9
10	10.2	1.9	6.1	073	.1	1.2	161	4.4	E	**	*****	0.0	7580	10
11	11.4	5.0	8.2	068	.9	1.7	133	7.0	NE	31	-8.8	0.0	7005	11
12	9.4	4.6	7.0	090	1.2	2.0	025	5.1	ENE	48	-4.0	4.4	4965	12
13	5.8	2.8	4.3	030	.4	1.2	015	4.4	NE	75	-3	8.6	3015	13
14	10.4	2.8	6.5	117	1.1	2.1	059	8.3	S	58	-.9	5.0	7100	14
15	6.8	.7	3.8	047	.8	1.2	018	5.1	N	83	-.5	57.8	3480	15
16	5.1	1.6	3.4	188	.5	1.2	083	3.8	SSW	77	-.8	14.2	4830	16
17	10.7	2.5	6.6	171	.8	1.5	145	6.3	SSW	64	-.6	0.0	7425	17
18	13.8	4.8	9.3	100	.5	1.7	174	7.0	ENE	35	-6.0	0.0	7885	18
19	13.6	8.3	11.0	104	.6	2.0	080	7.6	NE	39	-2.8	0.0	7755	19
20	14.4	8.6	11.5	169	.3	1.7	222	7.0	NE	33	-5.0	0.0	7525	20
21	15.2	7.9	11.6	106	.9	1.8	159	5.7	ENE	32	-5.1	0.0	7765	21
22	15.3	8.9	12.1	085	1.4	2.1	081	10.8	ENE	50	.5	3.6	5110	22
23	11.9	5.7	8.8	114	.5	2.0	227	8.3	ENE	70	3.6	1.8	5720	23
24	13.2	5.9	9.6	118	1.9	2.6	141	7.6	SE	45	-2.3	0.0	7115	24
25	13.8	7.0	10.4	134	1.1	2.4	169	8.9	S	40	-3.1	0.0	7845	25
26	13.6	10.7	12.2	073	1.7	2.7	278	10.2	NE	36	-2.8	0.0	6403	26
27	*****	*****	*****	***	***	***	***	***	***	**	*****	***	*****	27
28	*****	*****	*****	***	***	***	***	***	***	**	*****	***	*****	28
29	*****	*****	*****	***	***	***	***	***	***	**	*****	***	*****	29
30	*****	*****	*****	***	***	***	***	***	***	**	*****	***	*****	30
MONTH	15.3	-.4	7.2	089	.8	1.9	128	13.3	ENE	49	-2.4	105.4	168663	

GUST VEL. AT MAX. GUST MINUS 2 INTERVALS 3.8

GUST VEL. AT MAX. GUST MINUS 1 INTERVAL 3.2

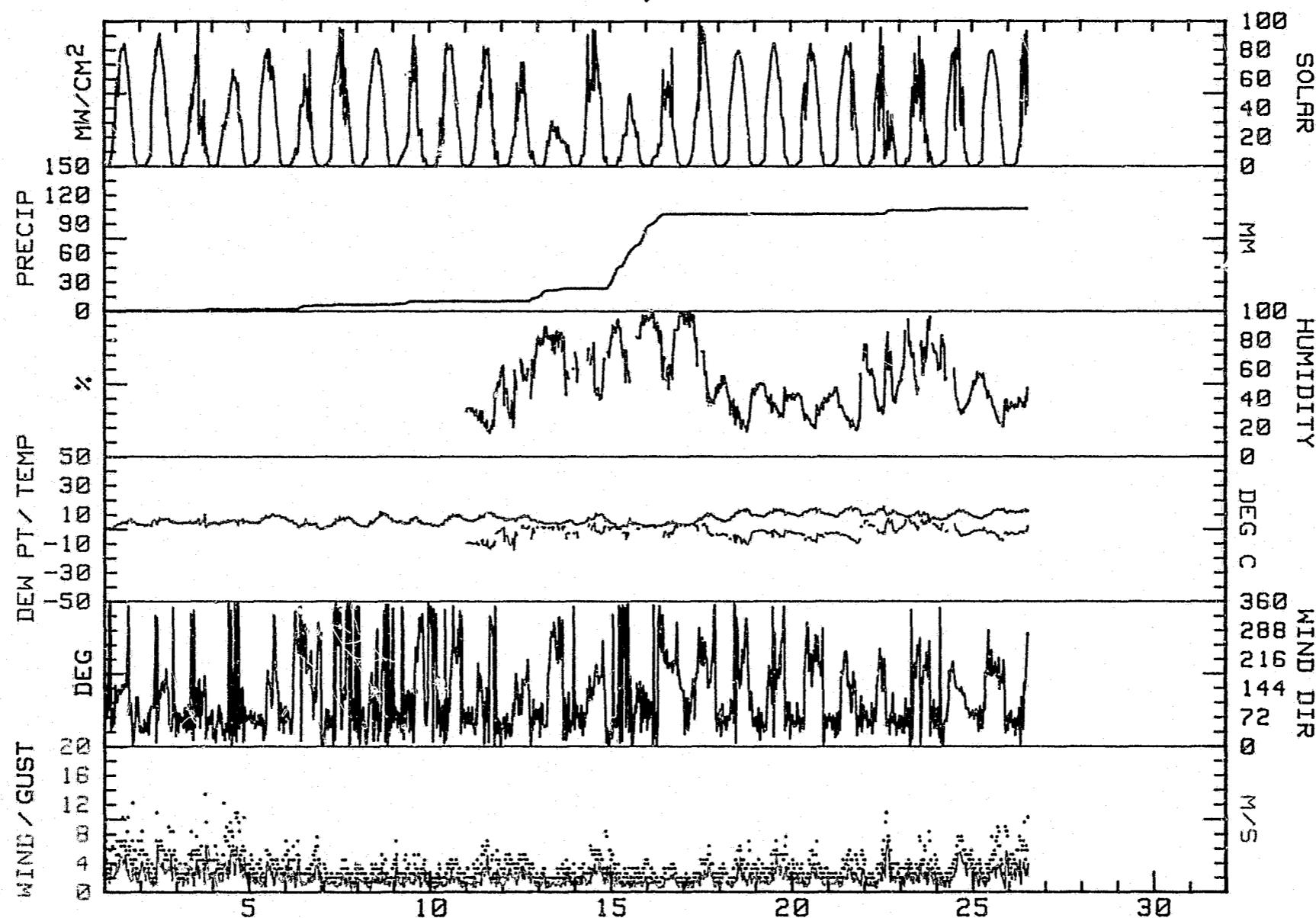
GUST VEL. AT MAX. GUST PLUS 1 INTERVAL 9.5

GUST VEL. AT MAX. GUST PLUS 2 INTERVALS 6.3

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 INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

R&M CONSULTANTS, INC.  
SUSITNA HYDROELECTRIC PROJECT  
GLACIER WEATHER STATION  
June, 1984



## R &amp; M CONSULTANTS, INC.

## SUSITNA HYDROELECTRIC PROJECT

WIND FREQUENCY SUMMARY FOR GLACIER WEATHER STATION  
DATA TAKEN DURING June, 1984

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		
	1.0	3.0	6.0	10.0	15.0	20.0			
N	1.22	3.18	.73	.08	0.00	0.00	0.00	0.00	5.22
NNE	1.22	4.82	.98	.08	0.00	0.00	0.00	0.00	7.10
NE	1.71	11.59	1.71	.08	0.00	0.00	0.00	0.00	15.10
ENE	1.71	12.33	1.14	.08	0.00	0.00	0.00	0.00	15.27
E	2.37	6.94	1.71	0.00	0.00	0.00	0.00	0.00	11.02
ESE	1.22	3.92	1.06	0.00	0.00	0.00	0.00	0.00	6.20
SE	.65	2.53	3.35	0.00	0.00	0.00	0.00	0.00	6.53
SSE	.24	3.18	2.53	0.00	0.00	0.00	0.00	0.00	5.96
S	.52	4.33	1.22	0.00	0.00	0.00	0.00	0.00	6.12
SSW	.16	5.31	.16	0.00	0.00	0.00	0.00	0.00	5.63
SW	.16	2.29	.49	0.00	0.00	0.00	0.00	0.00	2.94
WSW	.24	1.80	.08	0.00	0.00	0.00	0.00	0.00	2.12
W	.41	1.63	.33	0.00	0.00	0.00	0.00	0.00	2.37
WNW	.65	1.31	.08	0.00	0.00	0.00	0.00	0.00	2.04
NW	.98	1.06	0.00	.08	0.00	0.00	0.00	0.00	2.12
NNW	1.63	2.04	.49	0.00	0.00	0.00	0.00	0.00	4.16
CALM									.08
TOTAL	15.18	68.24	16.08	.41	0.00	0.00	0.00	0.00	100.00

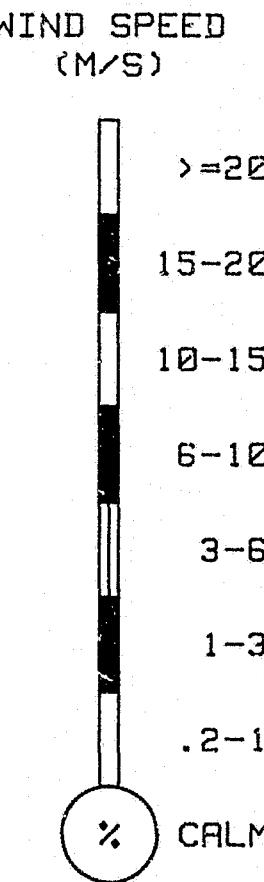
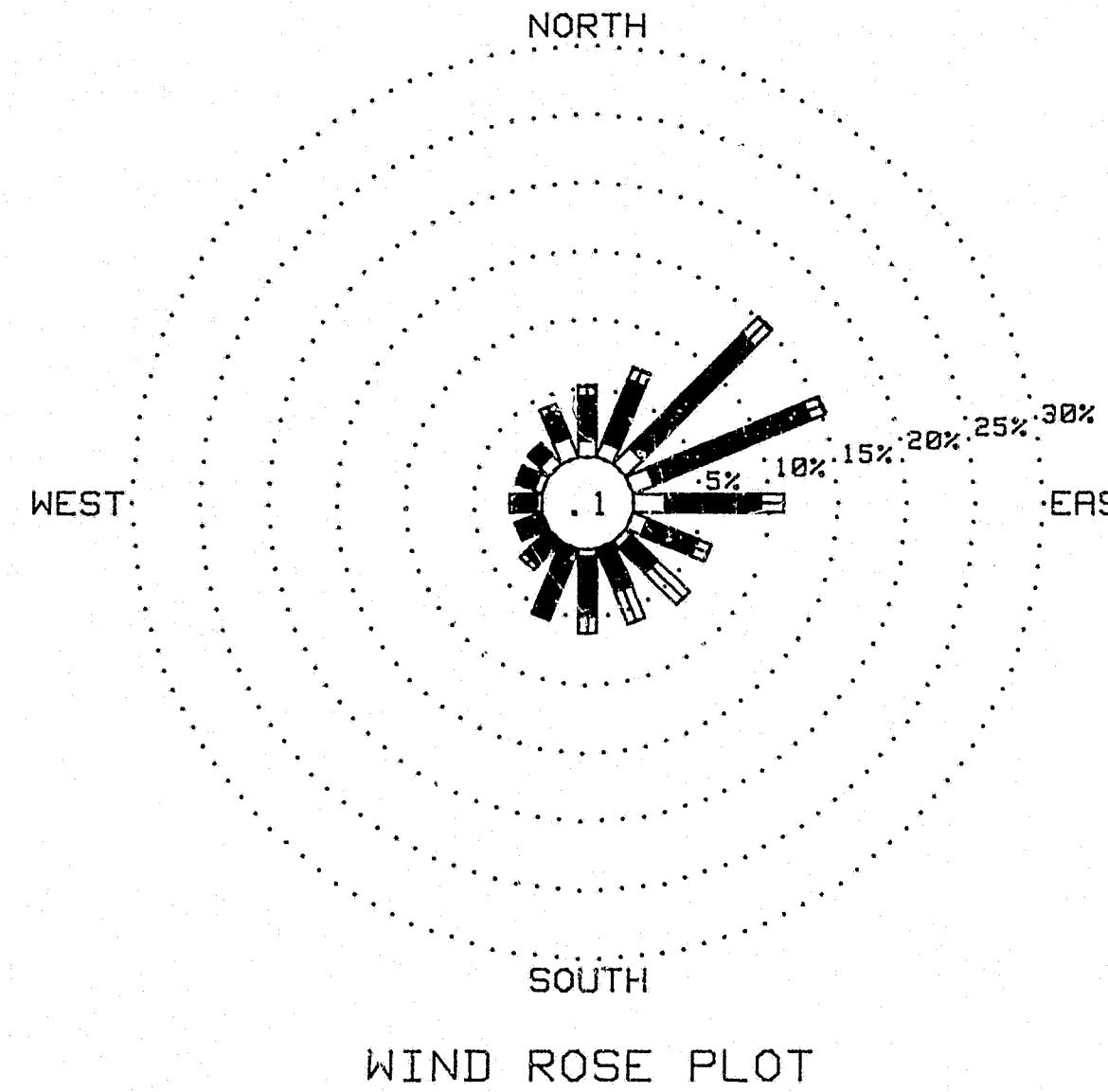
NOTE: ALL FREQUENCIES ARE EXPRESSED IN PERCENT

1225 VALID WIND OBSERVATIONS USED TO DEVELOP FREQUENCY SUMMARY

1440 WIND OBSERVATIONS WOULD HAVE BEEN CORRECT FOR 30 MINUTE DATA.

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

R&M CONSULTANTS, INC.  
SUSITNA HYDROELECTRIC PROJECT  
GLACIER WEATHER STATION  
June, 1984



## R &amp; M CONSULTANTS, INC.

## GULSTINNA HYDROELECTRIC PROJECT

HOURLY SOLAR RADIATION SUMMARY FOR GLACIER WEATHER STATION  
DATA TAKEN DURING June, 1984

SOLAR RADIATION VALUES MEASURED IN MILLIWATTS PER SQUARE CENTIMETER

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	Avg
1	0	0	0	2	6	15	26	40	60	56	74	80	80	83	75	66	56	43	29	15	4	2	0	0	34
2	0	0	0	1	3	5	7	47	60	67	78	83	90	82	74	65	52	37	27	16	6	1	0	0	33
3	0	0	0	2	6	10	12	17	34	40	41	55	67	67	60	35	38	23	27	13	7	2	0	0	23
4	0	0	0	3	9	17	25	25	29	34	40	51	58	64	60	55	55	34	33	20	7	2	0	0	26
5	0	0	0	2	3	4	8	43	56	65	73	77	73	79	60	67	58	44	30	19	7	2	0	0	32
6	0	0	0	1	3	5	10	10	12	29	42	42	54	52	44	33	53	28	11	6	3	1	0	0	18
7	0	0	0	1	2	4	12	50	58	66	74	79	72	82	64	50	40	44	30	17	7	2	0	0	31
8	0	0	0	2	4	5	15	45	56	65	73	78	80	78	71	66	57	47	29	21	6	1	0	0	33
9	0	0	0	2	5	7	9	11	14	21	47	55	75	74	78	43	22	23	16	5	5	3	0	0	21
10	0	0	0	1	2	7	18	24	16	54	79	83	80	82	81	66	57	45	31	22	11	2	0	0	32
11	0	0	0	2	4	11	22	35	50	43	58	73	71	79	79	58	50	33	20	8	9	1	0	0	29
12	0	0	0	1	2	6	13	19	23	48	41	48	69	58	60	44	30	15	7	8	8	0	0	0	21
13	0	0	0	1	4	13	14	21	29	28	26	23	23	21	19	17	16	16	12	12	8	3	1	0	13
14	0	0	0	2	5	7	15	31	73	45	56	55	73	76	76	63	55	47	22	6	5	1	0	0	30
15	0	0	0	0	2	5	6	13	21	22	25	40	46	44	33	30	23	23	12	5	2	1	0	0	15
16	0	0	0	3	6	7	7	12	14	22	55	46	47	50	56	43	59	25	18	11	5	2	0	0	20
17	0	0	0	1	3	6	12	25	33	43	71	62	90	92	85	68	57	45	33	12	6	2	0	0	31
18	0	0	0	1	2	4	19	43	54	63	73	77	79	78	74	66	57	45	33	19	4	2	0	0	33
19	0	0	0	1	3	4	19	44	55	65	73	80	84	79	72	61	58	34	31	8	6	2	0	0	32
20	0	0	0	1	2	3	18	43	55	37	57	77	82	75	77	69	57	45	33	14	8	2	0	0	31
21	0	0	0	1	2	4	18	43	54	63	72	77	81	77	75	61	46	48	32	20	5	2	0	0	32
22	0	0	0	1	3	7	10	44	54	44	58	67	81	10	10	26	18	19	31	19	12	2	0	0	21
23	0	0	0	1	5	4	8	41	44	61	61	53	69	45	55	68	21	19	8	7	6	1	0	0	24
24	0	0	0	2	3	3	17	43	54	64	76	78	53	80	83	55	28	51	13	9	5	1	0	0	30
25	0	0	0	1	2	3	15	43	53	64	72	78	79	78	74	66	58	46	31	18	7	1	0	0	33
26	0	0	0	1	2	5	13	16	50	82	83	64	***	***	***	***	***	***	***	***	***	***	***	***	13
27	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
28	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
29	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
30	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

R & M CONSULTANTS, INC.  
SUSITNA HYDROELECTRIC PROJECT

OBSERVATION SUMMARY FOR GLACIER WEATHER STATION  
DATA TAKEN DURING June, 1984

PARAMETER	NUMBER OF USABLE OBSERVATIONS	PERCENT OF TOTAL OBSERVATIONS
TEMPERATURE	1225	85
WTND SPEED	1225	85
WTND DIRECTION	1225	85
PEAK GUST	1225	85
RELATIVE HUMIDITY	564	39
PRECIPITATION	1225	85
SOLAR RADIATION	1225	85
DEW POINT	564	39

THERE ARE 1440 POSSIBLE OBSERVATIONS THIS MONTH FOR EACH PARAMETER.  
THE DATA RECORDING INTERVAL IS 30 MINUTES.

THE FOLLOWING ADJUSTMENTS HAVE BEEN MADE TO THIS MONTH'S DATA:

1. RH -25 RH Points
2. Solar -1 mW/cm<sup>2</sup>

Additional comments on this month's data:

1. No data after 6/26 due to weather wizard malfunction.
2. Recorded RH data invalid 6/1 - 6/11. RH data suspected to be poor 6/11 - 6/26, but have been published as indicative of true RH. Many erratic values have been deleted during this period.

No Data for July  
(See INTERPRETATION OF DATA)

No Data for August  
(See INTERPRETATION OF DATA)

## FEDERAL CLOUDSILL TRAVELERS, INC.

## SUBSTITUTIVE HYDROCHEMICAL PROJECT

HOURLY PRECIPITATION SUMMARY FOR GLACIER WEATHER STATION  
DATA TAKEN DURING SEPTEMBER, 1984

PRECIPITATION VALUES ARE IN MILLIMETERS

DATE	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	
1	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	1
2	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	2
3	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	3
4	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	4
5	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	5
6	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	6
7	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	7
8	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	8
9	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	9
10	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	10
11	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	11
12	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	12
13	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	13
14	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	14
15	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	15
16	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	16
17	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	17
18	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	18
19	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	19
20	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	20
21	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	21
22	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	0.0	0.0	0.0	0.0	0.0	0.0	22
23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	23
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	24
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	25
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	26
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	27
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	28
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	29
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	30

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

## R &amp; M CONSULTANTS, INC.

## SUSITTNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR GLACIER WEATHER STATION  
DATA TAKEN DURING September, 1984

DAY 01

DAY 02

DAY 03

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 C	M/S	MW		DEG C	DEG C	% DEG.	M/S	DEG C	M/S	MW		DEG C	DEG C	% DEG.	M/S	DEG C	M/S	MW

0300	*****	****	**	***	****	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
0600	*****	****	**	***	****	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
0900	*****	****	**	***	****	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
1200	*****	****	**	***	****	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
1500	*****	****	**	***	****	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
1800	*****	****	**	***	****	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
2100	*****	****	**	***	****	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
2400	*****	****	**	***	****	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***

DAY 04

DAY 05

DAY 06

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 C	M/S	MW		DEG C	DEG C	% DEG.	M/S	DEG C	M/S	MW		DEG C	DEG C	% DEG.	M/S	DEG C	M/S	MW

0300	*****	****	**	***	****	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
0600	*****	****	**	***	****	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
0900	*****	****	**	***	****	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
1200	*****	****	**	***	****	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
1500	*****	****	**	***	****	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
1800	*****	****	**	***	****	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
2100	*****	****	**	***	****	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
2400	*****	****	**	***	****	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***

DAY 07

DAY 08

DAY 09

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 C	M/S	MW		DEG C	DEG C	% DEG.	M/S	DEG C	M/S	MW		DEG C	DEG C	% DEG.	M/S	DEG C	M/S	MW

0300	*****	****	**	***	****	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
0600	*****	****	**	***	****	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
0900	*****	****	**	***	****	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
1200	*****	****	**	***	****	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
1500	*****	****	**	***	****	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
1800	*****	****	**	***	****	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
2100	*****	****	**	***	****	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
2400	*****	****	**	***	****	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

## R &amp; M CONSULTANTS, INC.

## SUSSEXINA HYDROCELL RECORDER INC PROJECT

THREE HOUR SUMMARY FOR GLACIER WEATHER STATION  
DATA TAKEN DURING September, 1984

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	DEG C	DEG C	% DEG, M/S DEG, M/S MW	NDNG TEMP, POINT RH DIR, SPD, DIR, GUST RAD	DEG C	DEG C	% DEG, M/S DEG, M/S MW	NDNG TEMP, POINT RH DIR, SPD, DIR, GUST RAD	DEG C	DEG C	% DEG, M/S DEG, M/S MW

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, GUST RAD	DEG C	DEG C	% DEG, M/S DEG, M/S MW	NDNG TEMP, POINT RH DIR, SPD, DIR, GUST RAD	DEG C	DEG C	% DEG, M/S DEG, M/S MW	NDNG TEMP, POINT RH DIR, SPD, DIR, GUST RAD	DEG C	DEG C	% DEG, M/S DEG, M/S MW

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, GUST RAD	DEG C	DEG C	% DEG, M/S DEG, M/S MW	NDNG TEMP, POINT RH DIR, SPD, DIR, GUST RAD	DEG C	DEG C	% DEG, M/S DEG, M/S MW	NDNG TEMP, POINT RH DIR, SPD, DIR, GUST RAD	DEG C	DEG C	% DEG, M/S DEG, M/S MW

0300	*****	*****	**	***	***	***	***	0300	*****	*****	**	***	***	***	***	***
0600	*****	*****	**	***	***	***	***	0600	*****	*****	**	***	***	***	***	***
0900	*****	*****	**	***	***	***	***	0900	*****	*****	**	***	***	***	***	***
1200	*****	*****	**	***	***	***	***	1200	*****	*****	**	***	***	***	***	***
1500	*****	*****	**	***	***	***	***	1500	*****	*****	**	***	***	***	***	***
1800	*****	*****	**	***	***	***	***	1800	*****	*****	**	***	***	***	***	***
2100	*****	*****	**	***	***	***	***	2100	*****	*****	**	***	***	***	***	***
2400	*****	*****	**	***	***	***	***	2400	*****	*****	**	***	***	***	***	***

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

## R &amp; M CONSULTANTS, INC.

## SUSITNA HYDRO ELECTRIC PROJECT

THREE HOUR SUMMARY FOR GLACIER WEATHER STATION  
DATA TAKEN DURING September, 1984

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 C	DEG C	%	DEG C	DEG C	DIR.	SPD.	M/S	M/S	MW	DEG C

0300	*****	****	**	***	***	***	***	0300	*****	****	**	***	***	0300	*****	****	**	***	***	***	***
0600	*****	****	**	***	***	***	***	0600	*****	****	**	***	***	0600	*****	****	**	***	***	***	***
0900	*****	****	**	***	***	***	***	0900	*****	****	**	***	***	0900	*****	****	**	***	***	***	***
1200	*****	****	**	***	***	***	***	1200	*****	****	**	***	***	1200	*****	****	**	***	***	***	***
1500	*****	****	**	***	***	***	***	1500	*****	****	**	***	***	1500	*****	****	**	***	***	***	***
1800	*****	****	**	***	***	***	***	1800	*****	****	**	***	***	1800	*****	****	**	***	***	***	***
2100	*****	****	**	***	***	***	***	2100	*****	****	**	***	***	2100	*****	****	**	***	***	***	***
2400	*****	****	**	***	***	***	***	2400	*****	****	**	***	***	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 C	DEG C	%	DEG C	DEG C	DIR.	SPD.	M/S	M/S	MW	DEG C

0300	*****	****	**	***	***	***	***	0300	2.9	-16.3	23	075	1.5	059	3.8	0	0300	3.7	-14.6	25	064	1.3	048	3.2	0	
0600	*****	****	**	***	***	***	***	0600	2.2	-15.9	25	074	1.2	059	2.5	0	0600	3.3	-18.2	19	074	1.9	057	4.4	0	
0900	*****	****	**	***	***	***	***	0900	1.5	-16.5	25	065	1.3	056	2.5	2	0900	3.4	-17.5	20	073	1.6	050	3.8	3	
1200	*****	****	**	***	***	***	***	1200	4.2	-14.7	24	081	1.4	105	3.2	42	1200	3.4	-14.0	27	081	1.2	124	5.1	18	
1500	*****	****	**	***	***	***	***	1500	6.9	*****	19	114	.9	150	3.8	43	1500	2.4	-7.8	47	088	1.1	134	4.4	28	
1800	5.9	-11.8	27	059	1.1	039	4.4	14	1800	3.3	*****	28	131	.8	136	3.8	4	1800	2.3	-5.3	57	047	1.6	036	3.2	8
2100	2.8	-14.0	28	071	1.6	052	4.4	0	2100	3.3	-14.0	27	064	1.2	071	3.2	0	2100	1.0	-3.5	72	078	1.5	149	3.2	0
2400	2.7	-13.3	30	056	1.7	051	4.4	0	2400	4.2	-14.2	25	081	1.3	081	2.5	0	2400	1.4	-4.0	67	071	1.9	049	3.8	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 C	DEG C	%	DEG C	DEG C	DIR.	SPD.	M/S	M/S	MW	DEG C

0300	2.4	-4.3	61	074	1.2	076	3.2	0	0300	.3	-3.9	73	058	1.6	039	3.8	0	0300	1.3	*****	69	066	1.2	050	2.5	0
0600	2.2	*****	61	082	1.3	075	3.8	0	0600	.7	-3.7	72	044	1.4	034	3.8	0	0600	1.8	-3.4	68	071	.9	063	3.2	0
0900	-.2	-3.4	79	334	.6	290	4.4	2	0900	1.3	-4.5	65	074	1.3	100	3.2	5	0900	1.8	*****	64	058	1.3	050	3.2	3
1200	2.6	-3.9	62	069	1.1	273	3.2	21	1200	.9	-4.5	67	046	1.2	336	3.8	17	1200	3.3	-5.4	53	086	.9	041	2.5	22
1500	2.7	*****	55	067	.8	027	3.8	25	1500	2.7	-5.7	54	094	.8	155	2.5	29	1500	4.3	*****	44	075	.9	043	2.5	24
1800	2.9	*****	58	076	.6	124	2.5	10	1800	2.1	-4.8	60	113	.8	048	3.2	6	1800	2.8	-7.8	46	092	1.0	150	3.8	5
2100	1.1	*****	73	071	.7	131	2.5	0	2100	1.9	*****	63	078	1.4	063	3.2	0	2100	1.5	-8.4	48	063	2.1	062	5.1	0
2400	.7	-3.7	72	051	1.7	032	5.1	0	2400	1.2	-3.8	69	050	.8	019	3.2	0	2400	1.6	-8.3	48	063	1.5	058	4.4	0

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

## R &amp; M CONSULTANTS, INC.

## SUSITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR GLACIER WEATHER STATION  
DATA TAKEN DURING September, 1984

DAY 28

DAY 29

DAY 30

HOUR	DEW	WIND	WIND GUST MAX.	POINT	DEW	WIND	WIND GUST MAX.	POINT	DEW	WIND	WIND GUST MAX.
NDNG TEMP.	DEG C	RH %	DIR. DEG	SPD. M/S	NDNG TEMP.	RH %	DIR. DEG	SPD. M/S	NDNG TEMP.	RH %	DIR. DEG
	X			MW		X				X	

0300	1.2	-8.1	50	069	1.6	056	3.8	0	0300	4.1	-1.0	69	065	1.3	038	3.2	0	0300	4.3	-3.5	57	076	3.3	119	8.9	0
0600	1.8	-9.3	44	068	1.3	063	3.2	0	0600	3.1	-2	79	055	1.4	053	6.3	0	0600	3.2	-2.9	64	084	3.9	074	7.6	0
0900	1.6	-8.9	46	069	1.6	062	5.1	2	0900	5.3	-3	70	074	3.5	071	9.5	1	0900	3.3	-4	95	075	1.6	094	5.1	2
1200	4.5	-8.7	38	082	1.6	134	4.4	36	1200	6.7	-3	61	071	3.3	090	8.3	20	1200	2.8	*****	77	325	.6	278	3.8	25
1500	4.9	-9.1	36	098	1.8	127	5.1	22	1500	6.7	-7	59	080	3.6	106	8.3	16	1500	4.0	-4.5	54	095	2.3	092	8.3	16
1800	5.4	-10.5	31	047	1.6	038	4.4	6	1800	5.1	-1	70	082	1.8	116	6.3	3	1800	3.9	-5.6	50	091	4.1	117	8.9	6
2100	4.5	-9.8	35	062	1.2	000	3.2	0	2100	5.9	*****	65	071	1.8	165	5.1	0	2100	3.4	-5.3	53	085	3.0	092	7.6	0
2400	2.6	*****	53	068	1.4	046	4.4	0	2400	4.9	-1.5	63	120	1.7	175	9.5	0	2400	*****	*****	**	***	***	069	5.1	***

\*\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*\*

## R &amp; M CONSULTANTS, INC.

## SUSITNA HYDRO ELECTRIC PROJECT

MONTHLY SUMMARY FOR GLACIER WEATHER STATION  
DATA TAKEN DURING September, 1984

DAY	TEMP.			WIND			RES.			AVG.	MAX.	MAX.			DAY'S	
	MAX. DEG C	MIN. DEG C	MEAN DEG C	DIR. DEG	SPD. M/S	SPD. M/S	DIR. DEG	SPD. M/S	DIR. DEG	GUST P'VAL	RH %	DP DEG C	PRECIP MM	SOLAR ENERGY WH/SQM	DAY	
1	*****	*****	*****	***	***	***	***	***	***	***	**	*****	***	*****	1	
2	*****	*****	*****	***	***	***	***	***	***	***	**	*****	***	*****	2	
3	*****	*****	*****	***	***	***	***	***	***	***	**	*****	***	*****	3	
4	*****	*****	*****	***	***	***	***	***	***	***	**	*****	***	*****	4	
5	*****	*****	*****	***	***	***	***	***	***	***	**	*****	***	*****	5	
6	*****	*****	*****	***	***	***	***	***	***	***	**	*****	***	*****	6	
7	*****	*****	*****	***	***	***	***	***	***	***	**	*****	***	*****	7	
8	*****	*****	*****	***	***	***	***	***	***	***	**	*****	***	*****	8	
9	*****	*****	*****	***	***	***	***	***	***	***	**	*****	***	*****	9	
10	*****	*****	*****	***	***	***	***	***	***	***	**	*****	***	*****	10	
11	*****	*****	*****	***	***	***	***	***	***	***	**	*****	***	*****	11	
12	*****	*****	*****	***	***	***	***	***	***	***	**	*****	***	*****	12	
13	*****	*****	*****	***	***	***	***	***	***	***	**	*****	***	*****	13	
14	*****	*****	*****	***	***	***	***	***	***	***	**	*****	***	*****	14	
15	*****	*****	*****	***	***	***	***	***	***	***	**	*****	***	*****	15	
16	*****	*****	*****	***	***	***	***	***	***	***	**	*****	***	*****	16	
17	*****	*****	*****	***	***	***	***	***	***	***	**	*****	***	*****	17	
18	*****	*****	*****	***	***	***	***	***	***	***	**	*****	***	*****	18	
19	*****	*****	*****	***	***	***	***	***	***	***	**	*****	***	*****	19	
20	*****	*****	*****	***	***	***	***	***	***	***	**	*****	***	*****	20	
21	*****	*****	*****	***	***	***	***	***	***	***	**	*****	***	*****	21	
22	7.4	1.9	4.7	063	1.6	1.7	039	4.4	NE	30	-12.8	0.0	592	22		
23	8.5	1.4	5.0	082	1.1	1.3	059	3.8	ENE	24	-15.4	0.0	2829	23		
24	4.3	.8	2.6	072	1.5	1.7	124	5.1	ENE	39	-11.4	0.0	1574	24		
25	5.1	-.4	2.4	064	.9	1.3	032	5.1	NE	67	-4.0	0.0	1896	25		
26	5.1	-.3	2.4	066	1.1	1.4	039	3.8	ENE	65	-4.4	0.0	2007	26		
27	5.8	.4	3.1	069	1.2	1.4	062	5.1	ENE	55	-6.1	0.0	1662	27		
28	7.7	.9	4.3	071	1.5	1.7	062	5.1	ENE	41	-9.0	0.0	2088	28		
29	7.7	2.2	5.0	077	2.2	2.6	071	9.5	ENE	67	-5.5	0.0	1151	29		
30	5.2	.3	2.8	083	2.5	3.0	119	8.9	E	65	-3.0	0.0	1419	30		
MONTH	8.5	-.4	3.6	074	1.5	1.8	071	9.5	ENE	51	-7.4	0.0	15219			

GUST VEL. AT MAX. GUST MINUS 2 INTERVALS 5.7

GUST VEL. AT MAX. GUST MINUS 1 INTERVAL 8.3

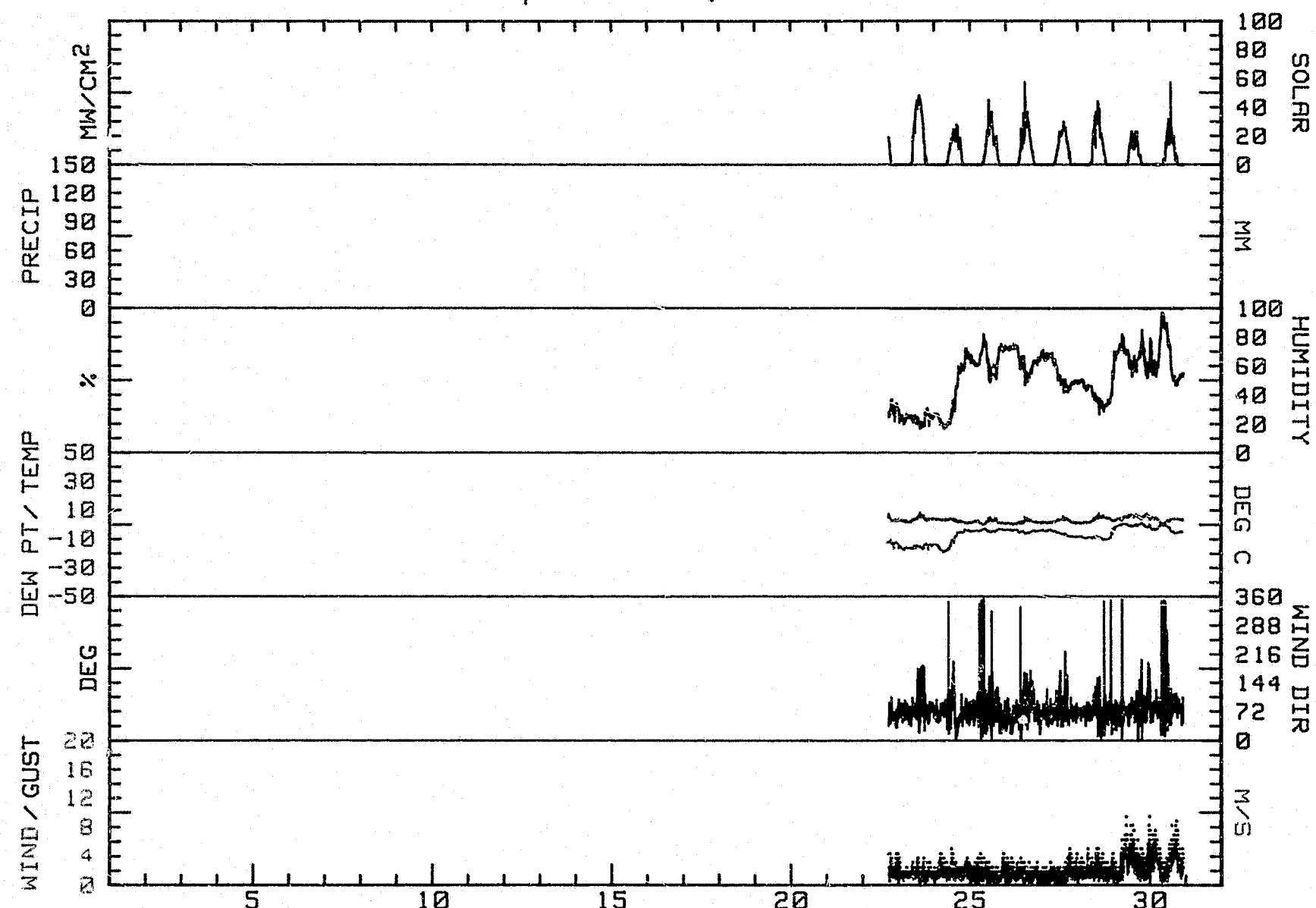
GUST VEL. AT MAX. GUST PLUS 1 INTERVAL 8.3

GUST VEL. AT MAX. GUST PLUS 2 INTERVALS 6.3

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 INTERPRETATION NOTES AT END OF MONTHLY REPORT\*\*\*

R&M CONSULTANTS, INC.  
SUSITNA HYDROELECTRIC PROJECT  
GLACIER WEATHER STATION  
September, 1984



## R &amp; M CONSULTANTS, INC.

## SUSITNA HYDROELECTRIC PROJECT

WIND FREQUENCY SUMMARY FOR GLACIER WEATHER STATION  
DATA TAKEN DURING September, 1984

DIRECTION	0.2	1.0	3.0	6.0	10.0	15.0	20.0	
	TO	TO	TO	TO	TO	TO	TO	OR
	1.0	3.0	6.0	10.0	15.0	20.0	GREATER	TOTAL
N	.21	1.10	.08	0.00	0.00	0.00	0.00	1.40
NNE	.51	4.36	.38	0.00	0.00	0.00	0.00	5.25
NE	3.09	15.50	1.31	0.00	0.00	0.00	0.00	19.90
ENE	8.76	23.12	4.70	.08	0.00	0.00	0.00	36.66
E	4.66	12.36	3.98	0.00	0.00	0.00	0.00	21.00
ESE	1.40	4.19	1.61	.04	0.00	0.00	0.00	7.24
SE	.04	2.92	.72	0.00	0.00	0.00	0.00	3.68
SSE	.04	1.52	.21	0.00	0.00	0.00	0.00	1.78
S	0.00	.80	.13	0.00	0.00	0.00	0.00	.93
SSW	0.00	.13	.04	0.00	0.00	0.00	0.00	.17
SW	0.00	.04	0.00	0.00	0.00	0.00	0.00	.04
WSW	0.00	.17	0.00	0.00	0.00	0.00	0.00	.17
W	0.00	.47	.04	0.00	0.00	0.00	0.00	.51
WNW	0.00	.25	0.00	0.00	0.00	0.00	0.00	.25
NW	0.00	.30	0.00	0.00	0.00	0.00	0.00	.30
NNW	0.00	.38	.04	0.00	0.00	0.00	0.00	.42
CALM								.30
TOTAL	18.71	67.61	13.25	.13	0.00	0.00	0.00	100.00

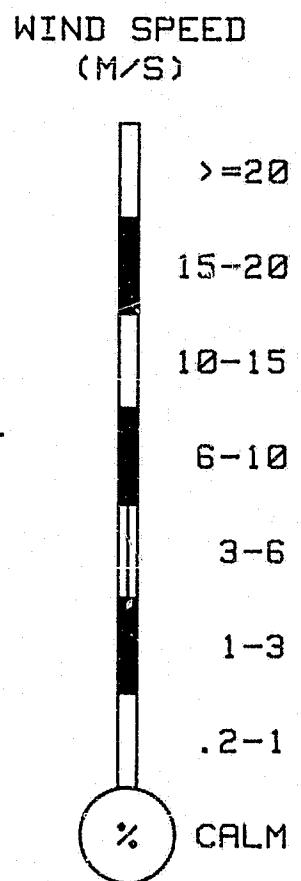
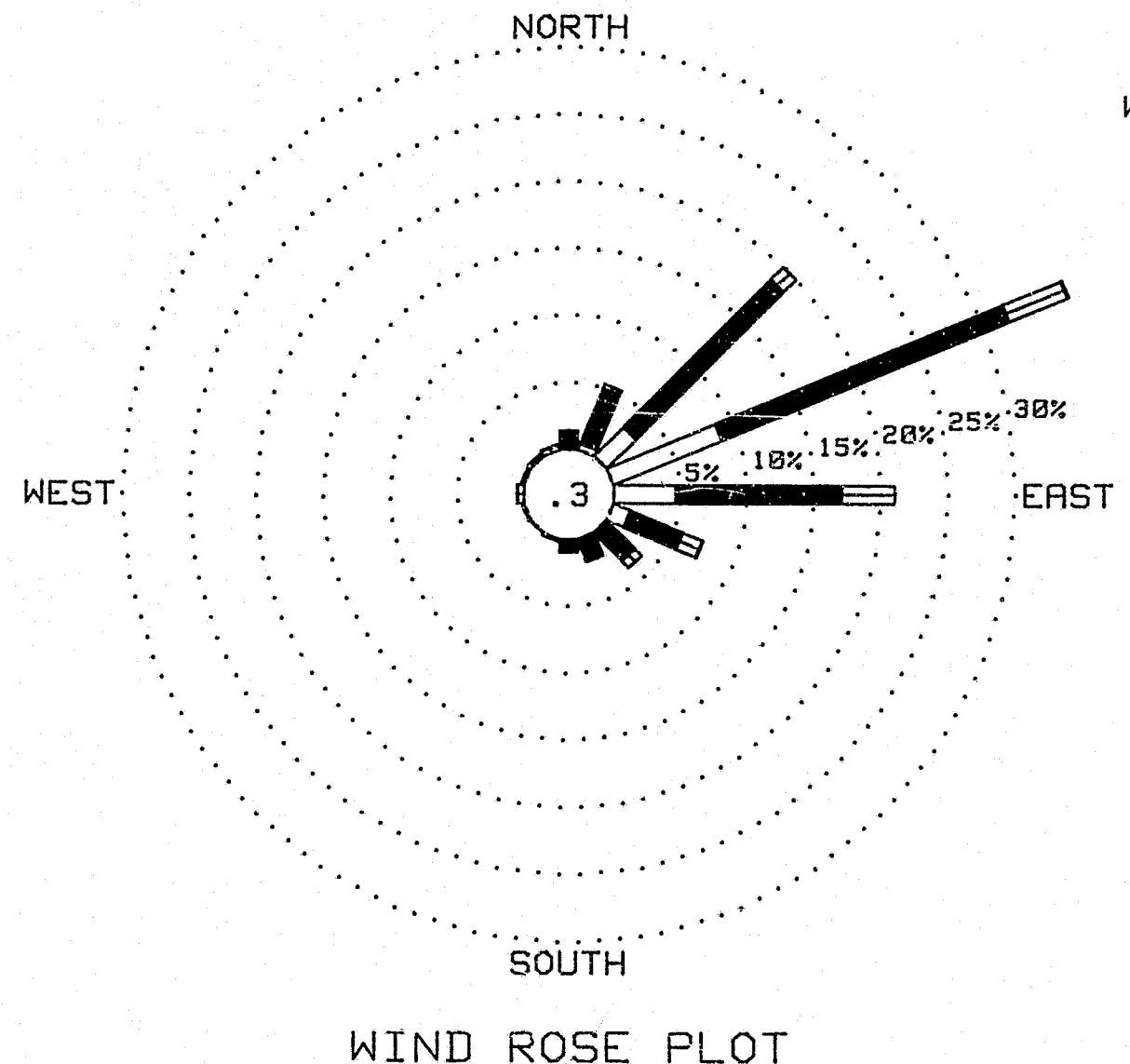
NOTE: ALL FREQUENCIES ARE EXPRESSED IN PERCENT

2362 VALID WIND OBSERVATIONS USED TO DEVELOP FREQUENCY SUMMARY

8640 WIND OBSERVATIONS WOULD HAVE BEEN CORRECT FOR 5 MINUTE DATA.

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

R&M CONSULTANTS, INC.  
SUSITNA HYDROELECTRIC PROJECT  
GLACIER WEATHER STATION  
September, 1984



## R &amp; M CONSULTANTS, INC.

## SUSIETINA HYDROELECTRIC PROJECT

HOURLY SOLAR RADIATION SUMMARY FOR GLACIER WEATHER STATION  
DATA TAKEN DURING September, 1984

SOLAR RADIATION VALUES MEASURED IN MILLIWATTS PER SQUARE CENTIMETER

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	Avg
1	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
2	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
3	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
4	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
5	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
6	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
7	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
8	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
9	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
10	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
11	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
12	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
13	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
14	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
15	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
16	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
17	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
18	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
19	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
20	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
21	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
22	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	16	7	0	0	0	1
23	0	0	0	0	0	0	0	1	11	26	35	43	42	45	38	28	12	4	0	0	0	0	0	0	12
24	0	0	0	0	0	0	0	2	7	12	17	21	23	21	23	15	15	4	0	0	0	0	0	0	7
25	0	0	0	0	0	0	0	2	5	13	21	31	32	31	18	15	15	6	1	0	0	0	0	0	8
26	0	0	0	0	0	0	0	2	11	17	23	32	32	33	24	15	9	3	0	0	0	0	0	0	8
27	0	0	0	0	0	0	0	2	6	12	19	21	23	26	24	17	11	5	0	0	0	0	0	0	7
28	0	0	0	0	0	0	0	1	9	22	28	34	38	30	21	15	8	3	0	0	0	0	0	0	9
29	0	0	0	0	0	0	0	0	4	12	19	17	12	18	19	8	5	1	0	0	0	0	0	0	5
30	0	0	0	0	0	0	0	0	3	10	20	22	21	22	18	10	6	2	0	0	0	0	0	0	6

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

## R &amp; M CONSULTANTS, INC.

## SUSITNA HYDROELECTRIC PROJECT

OBSERVATION SUMMARY FOR GLACIER WEATHER STATION  
DATA TAKEN DURING September, 1984

PARAMETER	NUMBER OF USABLE OBSERVATIONS	PERCENT OF TOTAL OBSERVATIONS
TEMPERATURE	2364	27
WIND SPEED	2364	27
WIND DIRECTION	2362	27
PEAK GUST	2364	27
RELATIVE HUMIDITY	1915	22
PRECIPITATION	2364	27
SOLAR RADIATION	2364	27
DEW POINT	1915	22

THERE ARE 8640 POSSIBLE OBSERVATIONS THIS MONTH FOR EACH PARAMETER.  
THE DATA RECORDING INTERVAL IS 5 MINUTES.

THE FOLLOWING ADJUSTMENTS HAVE BEEN MADE TO THIS MONTH'S DATA:

1. RH -2 RH Points
2. Solar -1 mW/cm<sup>2</sup>
3. Wind Direction -180 degrees

Additional comments on this month's data:

1. Station reinstalled on 9/22. No data prior to this date.
2. Data recorded at 5 minute intervals.
3. Wind vane tail not attached. All wind direction data off by 180 degrees, but have been adjusted prior to publication.

No precipitation data for October

(See INTERPRETATION OF DATA).

## R &amp; M CONSULTANTS, INC.

## SUSITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR GLACIER WEATHER STATION  
DATA TAKEN DURING October, 1984

DAY 01

DAY 02

DAY 03

HOUR	DEW	WIND	WIND GUST MAX.	POINT	NDNG TEMP.	RH	DIR.	SPD.	DIR.	GUST	RAD	POINT	NDNG TEMP.	RH	DIR.	SPD.	DIR.	GUST	RAD	POINT	NDNG TEMP.	RH	DIR.	SPD.	DIR.	GUST	RAD				
	DEG C	DEG C	% DEG.	M/S	MW		DEG C	DEG C	DIR.	DEG C	M/S	MW		DEG C	DEG C	DIR.	DEG C	M/S	MW		DEG C	DEG C	% DEG.	M/S	MW		DEG C	DEG C	% DEG.	M/S	MW
0300	4.1	-2.3	63	072	2.6	083	6.3	0	0300	0.0	****	96	063	.7	044	2.5	0	0300	-1.0	-2.5	90	***	****	***	3.2	0					
0600	3.4	****	62	081	3.5	099	6.3	0	0600	.7	****	86	077	.6	079	1.3	0	0600	-1.4	-3.3	87	026	1.1	047	2.5	0					
0900	1.8	-2.3	74	048	.9	243	5.7	2	0900	-.6	-1.2	96	120	.8	132	2.5	2	0900	-1.7	-4.4	82	077	1.1	056	2.5	2					
1200	4.0	-5.0	52	058	1.3	052	4.4	15	1200	.5	-2.9	78	111	.7	125	2.5	11	1200	.7	-10.0	45	078	1.2	070	2.5	42					
1500	4.5	-4.0	54	112	2.7	122	7.0	23	1500	.5	-2.5	80	074	.9	086	3.2	12	1500	1.0	-9.1	47	142	1.1	147	3.8	31					
1800	3.8	-3.9	57	103	3.2	101	6.3	2	1800	1.1	****	80	087	.8	102	2.5	5	1800	1.3	-9.1	46	183	1.4	162	3.8	7					
2100	1.9	-2.7	75	094	3.3	086	6.3	0	2100	.6	-3.3	75	091	1.6	068	3.8	0	2100	-1.4	-8.4	59	067	1.0	063	3.2	0					
2400	.1	-5	96	068	1.5	075	6.3	0	2400	-1.2	****	97	273	1.0	227	5.1	0	2400	-1.4	-9.5	54	071	1.4	064	2.5	0					

DAY 04

DAY 05

DAY 06

HOUR	DEW	WIND	WIND GUST MAX.	POINT	NDNG TEMP.	RH	DIR.	SPD.	DIR.	GUST	RAD	POINT	NDNG TEMP.	RH	DIR.	SPD.	DIR.	GUST	RAD	POINT	NDNG TEMP.	RH	DIR.	SPD.	DIR.	GUST	RAD				
	DEG C	DEG C	% DEG.	M/S	MW		DEG C	DEG C	DIR.	DEG C	M/S	MW		DEG C	DEG C	DIR.	DEG C	M/S	MW		DEG C	DEG C	% DEG.	M/S	MW		DEG C	DEG C	% DEG.	M/S	MW
0300	-2.0	-11.1	50	068	1.1	079	2.5	0	0300	-1.8	-13.7	40	067	2.0	093	5.1	0	0300	2.6	-5.3	56	088	2.1	104	5.7	0					
0600	-2.3	-11.9	48	074	1.2	066	3.2	0	0600	-1.2	-15.9	32	062	1.9	070	5.1	0	0600	2.5	-5.6	55	108	2.2	120	6.3	0					
0900	-2.2	-12.3	46	075	1.3	065	3.8	1	0900	-.4	****	28	071	1.4	057	4.4	3	0900	1.3	-3.7	69	118	4.1	139	16.5	1					
1200	.1	-12.0	40	090	1.4	062	3.8	30	1200	2.6	-13.4	30	061	1.3	011	4.4	29	1200	1.1	****	78	141	1.3	115	7.0	9					
1500	.9	-11.3	40	131	2.0	139	4.4	31	1500	.9	-12.0	38	087	.5	281	5.1	14	1500	1.8	-4.0	65	045	.8	015	3.2	9					
1800	.8	****	40	094	.8	133	5.1	7	1800	1.1	-10.8	41	063	1.4	131	4.4	3	1800	2.5	-4.7	59	080	2.6	077	9.5	1					
2100	-2.0	****	48	065	1.5	058	5.1	0	2100	2.1	-7.3	50	070	2.0	058	4.4	0	2100	2.4	-6.5	52	075	3.1	091	6.3	0					
2400	-1.6	****	41	065	1.6	060	4.4	0	2400	2.0	-6.3	54	075	1.5	052	3.8	0	2400	2.6	-7.1	49	073	2.6	074	5.7	0					

DAY 07

DAY 08

DAY 09

HOUR	DEW	WIND	WIND GUST MAX.	POINT	NDNG TEMP.	RH	DIR.	SPD.	DIR.	GUST	RAD	POINT	NDNG TEMP.	RH	DIR.	SPD.	DIR.	GUST	RAD	POINT	NDNG TEMP.	RH	DIR.	SPD.	DIR.	GUST	RAD				
	DEG C	DEG C	% DEG.	M/S	MW		DEG C	DEG C	DIR.	DEG C	M/S	MW		DEG C	DEG C	DIR.	DEG C	M/S	MW		DEG C	DEG C	% DEG.	M/S	MW		DEG C	DEG C	% DEG.	M/S	MW
0300	2.8	-9.6	40	067	3.0	089	6.3	0	0300	2.3	-6.3	53	057	2.2	087	7.0	0	0300	****	****	**	***	***	***	***	***	***	***	***		
0600	2.4	-10.0	40	072	1.7	052	5.7	0	0600	****	****	**	***	***	102	7.0	***	0600	****	****	**	***	***	***	***	***	***	***	***		
0900	-.1	-2.6	83	069	2.6	073	7.0	0	0900	****	****	**	***	***	***	***	***	0900	****	****	**	***	***	***	***	***	***	***	***		
1200	.9	****	79	053	1.1	040	2.5	9	1200	****	****	**	***	***	***	***	***	1200	****	****	**	***	***	***	***	***	***	***	***		
1500	1.5	-1.7	79	054	1.3	036	4.4	10	1500	****	****	**	***																		

## R &amp; M CONSULTANTS, INC.

## SLEEK ITNA HYDROCELL ELECTRIC PROJECT

THREE HOUR SUMMARY FOR GLACIER WEATHER STATION  
DATA TAKEN DURING October, 1984

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
DEG C	DEG C	%	DEG C	DEG C	%	DEG C	DEG C	DEG C	DEG C	DEG C	%	DEG C
M/S	M/S	MW	M/S	M/S	MW	M/S	M/S	MW	M/S	M/S	MW	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.	GUST	RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST
DEG C	DEG C	%	DEG C	DEG C	%	DEG C	DEG C	DEG C	DEG C	DEG C	%	DEG C
M/S	M/S	MW	M/S	M/S	MW	M/S	M/S	MW	M/S	M/S	MW	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.	GUST	RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST
DEG C	DEG C	%	DEG C	DEG C	%	DEG C	DEG C	DEG C	DEG C	DEG C	%	DEG C
M/S	M/S	MW	M/S	M/S	MW	M/S	M/S	MW	M/S	M/S	MW	M/S

0300	*****	*****	*	***	***	***	***	0300	*****	*****	*	***	***	***	***	***
0600	*****	*****	*	***	***	***	***	0600	*****	*****	*	***	***	***	***	***
0900	*****	*****	*	***	***	***	***	0900	*****	*****	*	***	***	***	***	***
1200	*****	*****	*	***	***	***	***	1200	*****	*****	*	***	***	***	***	***
1500	*****	*****	*	***	***	***	***	1500	*****	*****	*	***	***	***	***	***
1800	*****	*****	*	***	***	***	***	1800	*****	*****	*	***	***	***	***	***
2100	*****	*****	*	***	***	***	***	2100	*****	*****	*	***	***	***	***	***
2400	*****	*****	*	***	***	***	***	2400	*****	*****	*	***	***	***	***	***

\*\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*\*

## R &amp; M CONSULTANTS, INC.

## SUSITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR GLACIER WEATHER STATION  
DATA TAKEN DURING October, 1984

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. M/S	M/S	MW	DEG C	%	DEG. M/S	M/S	MW	DEG C	%	DEG. M/S	M/S	MW

0300	****	****	*	***	***	***	***	***	***	***	***	***	***	***
0600	****	****	*	***	***	***	***	***	***	***	***	***	***	***
0900	****	****	*	***	***	***	***	***	***	***	***	***	***	***
1200	****	****	*	***	***	***	***	***	***	***	***	***	***	***
1500	****	****	*	***	***	***	***	***	***	***	***	***	***	***
1800	****	****	*	***	***	***	***	***	***	***	***	***	***	***
2100	****	****	*	***	***	***	***	***	***	***	***	***	***	***
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. M/S	M/S	MW	DEG C	%	DEG. M/S	M/S	MW	DEG C	%	DEG. M/S	M/S	MW

0300	****	****	*	***	***	***	***	***	***	***	***	***	***	***
0600	****	****	*	***	***	***	***	***	***	***	***	***	***	***
0900	****	****	*	***	***	***	***	***	***	***	***	***	***	***
1200	****	****	*	***	***	***	***	***	***	***	***	***	***	***
1500	****	****	*	***	***	***	***	***	***	***	***	***	***	***
1800	****	****	*	***	***	***	***	***	***	***	***	***	***	***
2100	****	****	*	***	***	***	***	***	***	***	***	***	***	***
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. M/S	M/S	MW	DEG C	%	DEG. M/S	M/S	MW	DEG C	%	DEG. M/S	M/S	MW

0300	****	****	*	***	***	***	***	***	***	***	***	***	***	***
0600	****	****	*	***	***	***	***	***	***	***	***	***	***	***
0900	****	****	*	***	***	***	***	***	***	***	***	***	***	***
1200	****	****	*	***	***	***	***	***	***	***	***	***	***	***
1500	****	****	*	***	***	***	***	***	***	***	***	***	***	***
1800	****	****	*	***	***	***	***	***	***	***	***	***	***	***
2100	****	****	*	***	***	***	***	***	***	***	***	***	***	***
2400	****	****	*	***	***	***	***	***	***	***	***	***	***	***

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

## R &amp; M CONSULTANTS, INC.

## SUSITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR GLACIER WEATHER STATION  
DATA TAKEN DURING October, 1984

DAY 28

DAY 29

DAY 30

HOUR	DEW	WIND	WIND GUST MAX.	DIR.	NDNG TEMP.	POINT RH	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	SPD.	DIR.	GUST RAD	
	DEG C	DEG C	%	DEG. M/S	MW	DEG C	DEG C	%	DEG. M/S	MW	DEG C	DEG C	%	DEG. M/S	MW	DEG C	DEG C	%	DEG. M/S	MW

0300	*****	*****	*	***	***	***	***	***	***	0300	*****	*****	*	***	***	***	***	***	***	***
0600	*****	*****	*	***	***	***	***	***	***	0600	*****	*****	*	***	***	***	***	***	***	***
0900	*****	*****	*	***	***	***	***	***	***	0900	*****	*****	*	***	***	***	***	***	***	***
1200	*****	*****	*	***	***	***	***	***	***	1200	*****	*****	*	***	***	***	***	***	***	***
1500	*****	*****	*	***	***	***	***	***	***	1500	*****	*****	*	***	***	***	***	***	***	***
1800	*****	*****	*	***	***	***	***	***	***	1800	*****	*****	*	***	***	***	***	***	***	***
2100	*****	*****	*	***	***	***	***	***	***	2100	*****	*****	*	***	***	***	***	***	***	***
2400	*****	*****	*	***	***	***	***	***	***	2400	*****	*****	*	***	***	***	***	***	***	***

DAY 31

HOUR	DEW	WIND	WIND GUST MAX.	DIR.	NDNG TEMP.	POINT RH	SPD.	DIR.	GUST RAD	
	DEG C	DEG C	%	DEG. M/S	MW	DEG C	DEG C	%	DEG. M/S	MW

0300	*****	*****	*	***	***	***	***	***	***
0600	*****	*****	*	***	***	***	***	***	***
0900	*****	*****	*	***	***	***	***	***	***
1200	*****	*****	*	***	***	***	***	***	***
1500	*****	*****	*	***	***	***	***	***	***
1800	*****	*****	*	***	***	***	***	***	***
2100	*****	*****	*	***	***	***	***	***	***
2400	*****	*****	*	***	***	***	***	***	***

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

R & M CONSULTANTS, INC.  
SUBSTITUTIONAL HYDRO ELECTRIC PROJECT

MONTHLY SUMMARY FOR GLACIER WEATHER STATION  
DATA TAKEN DURING October, 1984

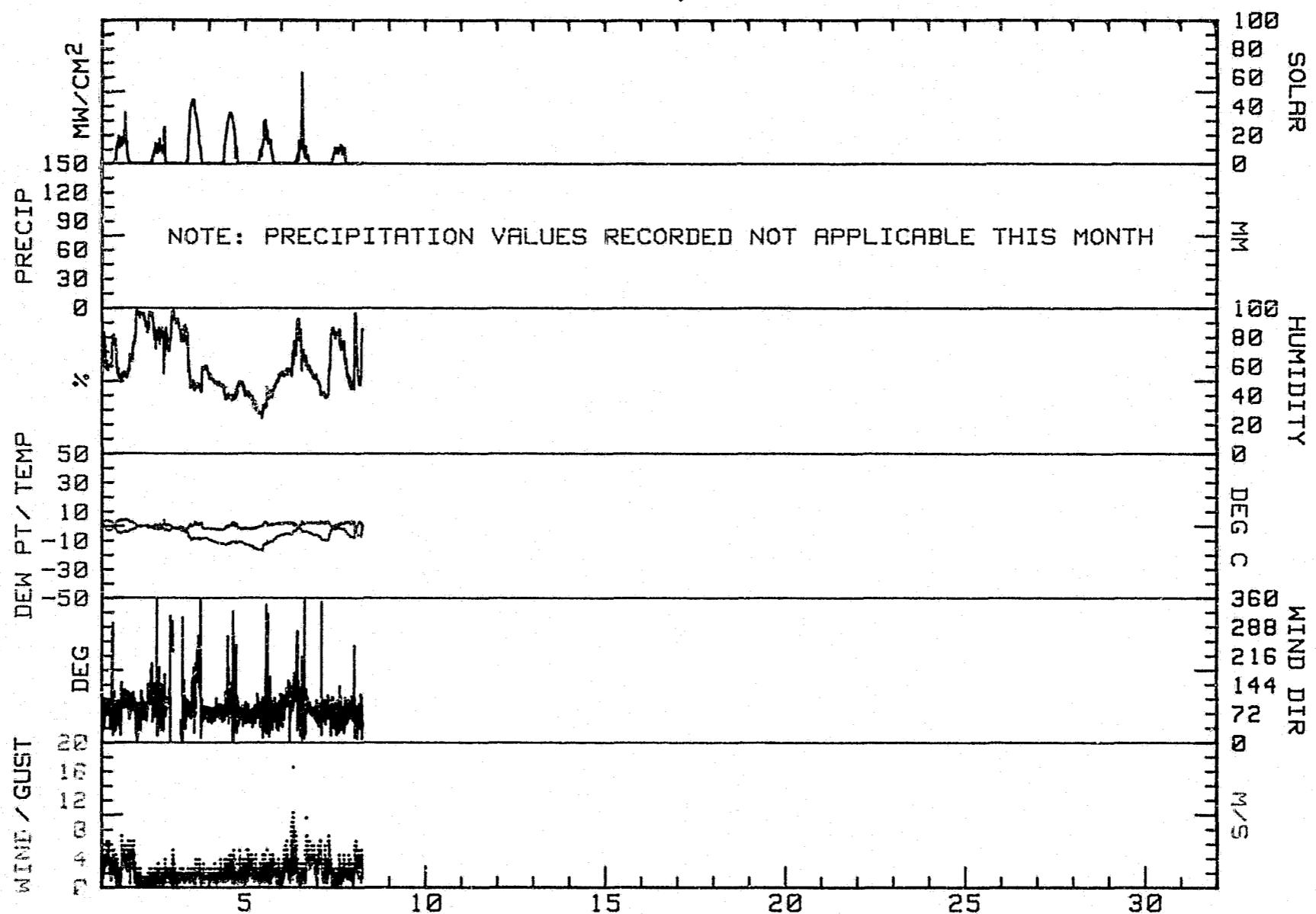
DAY	MAX. TEMP. DEG C	MIN. TEMP. DEG C	MEAN TEMP. DEG C	RES. DIR. deg	RES. SPD. M/S	Avg. WIND M/S	MAX. GUST M/S	MAX. GUST P'VAL DIR. deg	P'VAL RH %	MEAN DEG C	MEAN DEG C	DAY'S SOLAR ENERGY WH/SQM	DAY'S PRECIP MM
1	5.1	-1.1	2.5	086	2.3	2.7	122	7.0 E	66	-2.9	****	1243	1
2	4.3	-1.4	1.5	089	.7	1.1	***	5.1 E	83	-2.2	****	872	2
3	3.2	-2.2	.5	094	.8	1.3	147	3.8 ENE	64	-6.8	****	2588	3
4	3.1	-2.7	.2	084	1.3	1.6	133	5.1 ENE	44	-11.7	****	2073	4
5	3.3	-2.5	.4	068	1.5	1.8	093	5.1 ENE	39	-12.4	****	1327	5
6	3.3	-1.8	1.3	093	2.1	2.6	139	16.5 ENE	61	-4.9	****	945	6
7	3.9	-1.4	1.8	065	1.8	2.0	073	7.0 ENE	58	-5.7	****	741	7
8	3.5	-2.9	.3	065	2.2	3.0	087	7.0 NE	65	-5.5	****	0	8
9	****	****	****	***	****	****	****	****	**	****	****	****	9
10	****	****	****	**	****	****	***	****	**	****	****	****	10
11	****	****	****	***	****	****	***	****	**	****	****	****	11
12	****	****	****	**	****	****	****	****	**	****	****	****	12
13	****	****	****	**	****	****	**	****	**	****	****	****	13
14	****	****	****	**	****	****	**	****	**	****	****	****	14
15	****	****	****	**	****	****	**	****	**	****	****	****	15
16	****	****	****	**	****	****	**	****	**	****	****	****	16
17	****	****	****	**	****	****	**	****	**	****	****	****	17
18	****	****	****	**	****	****	**	****	**	****	****	****	18
19	****	****	****	**	****	****	**	****	**	****	****	****	19
20	****	****	****	**	****	****	**	****	**	****	****	****	20
21	****	****	****	**	****	****	**	****	**	****	****	****	21
22	****	****	****	**	****	****	**	****	**	****	****	****	22
23	****	****	****	**	****	****	**	****	**	****	****	****	23
24	****	****	****	**	****	****	**	****	**	****	****	****	24
25	****	****	****	**	****	****	**	****	**	****	****	****	25
26	****	****	****	**	****	****	**	****	**	****	****	****	26
27	****	****	****	**	****	****	**	****	**	****	****	****	27
28	****	****	****	**	****	****	**	****	**	****	****	****	28
29	****	****	****	**	****	****	**	****	**	****	****	****	29
30	****	****	****	**	****	****	**	****	**	****	****	****	30
31	****	****	****	**	****	****	**	****	**	****	****	****	31
MONTH	5.1	-2.9	1.0	081	1.5	1.9	139	16.5 ENE	58	-6.5	****	9789	

GUST VEL. AT MAX. GUST MINUS 2 INTERVALS 8.9  
 GUST VEL. AT MAX. GUST MINUS 1 INTERVAL 8.3  
 GUST VEL. AT MAX. GUST PLUS 1 INTERVAL 10.2  
 GUST VEL. AT MAX. GUST PLUS 2 INTERVALS 9.5

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 INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

R&M CONSULTANTS, INC.  
SUSITNA HYDROELECTRIC PROJECT  
GLACIER WEATHER STATION  
October, 1984



## R &amp; M CONSULTANTS, INC.

## SUSITNA HYDROELECTRIC PROJECT

WIND FREQUENCY SUMMARY FOR GLACIER WEATHER STATION  
DATA TAKEN DURING October, 1984

DIRECTION	0.2	1.0	3.0	6.0	10.0	15.0	20.0	
	TO	TO	TO	TO	TO	TO	OR	
	1.0	3.0	6.0	10.0	15.0	20.0	GREATER	TOTAL
N	0.00	.95	.15	0.00	0.00	0.00	0.00	1.10
NNE	.20	4.55	.65	0.00	0.00	0.00	0.00	5.40
NE	2.10	11.39	1.75	0.00	0.00	0.00	0.00	15.24
ENE	7.75	17.69	5.25	.05	0.00	0.00	0.00	30.73
E	7.00	12.29	4.85	.05	0.00	0.00	0.00	24.19
ESE	2.05	5.20	3.50	.10	0.00	0.00	0.00	11.34
SE	.25	2.80	1.55	.15	0.00	0.00	0.00	4.75
SSE	.05	2.00	.20	0.00	0.00	0.00	0.00	2.25
S	0.00	1.25	.05	0.00	0.00	0.00	0.00	1.30
SSW	0.00	.60	.05	0.00	0.00	0.00	0.00	.65
SW	0.00	.30	.15	0.00	0.00	0.00	0.00	.45
WSW	0.00	.40	.20	0.00	0.00	0.00	0.00	.60
W	0.00	.60	.15	0.00	0.00	0.00	0.00	.75
WNW	0.00	.50	.05	0.00	0.00	0.00	0.00	.55
NW	0.00	.20	0.00	0.00	0.00	0.00	0.00	.20
NNW	0.00	.10	0.00	0.00	0.00	0.00	0.00	.10
CALM								.40
TOTAL	19.39	61.32	18.54	.35	0.00	0.00	0.00	100.00

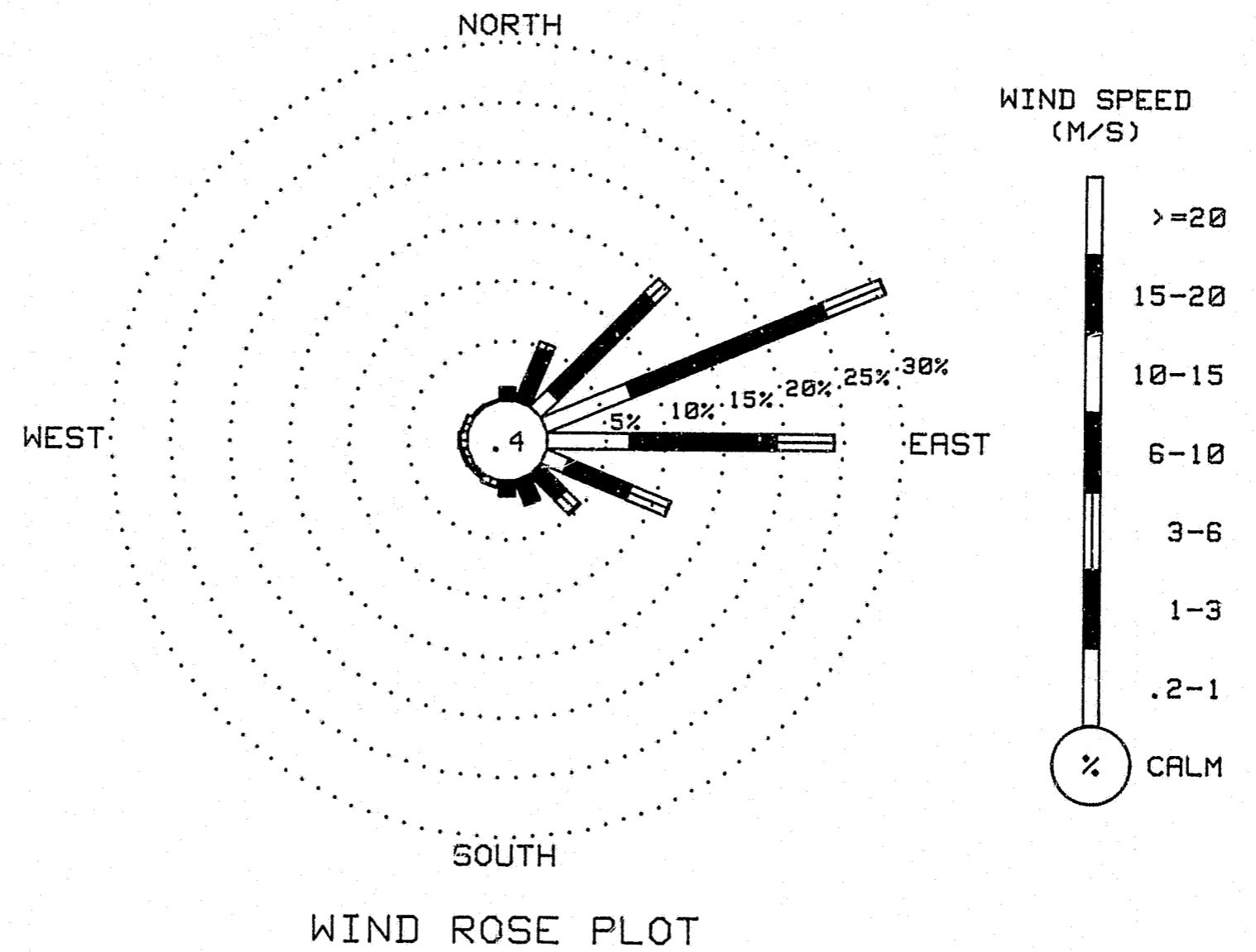
NOTE: ALL FREQUENCIES ARE EXPRESSED IN PERCENT

2001 VALID WIND OBSERVATIONS USED TO DEVELOP FREQUENCY SUMMARY

8928 WIND OBSERVATIONS WOULD HAVE BEEN CORRECT FOR 5 MINUTE DATA.

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

R&M CONSULTANTS, INC.  
SUSITNA HYDROELECTRIC PROJECT  
GLACIER WEATHER STATION  
October, 1984



## R &amp; M CONSULTANTS, INC.

## SUSSEX TNA HYDRO ELECTRIC PROJECT

HOURLY SOLAR RADIATION SUMMARY FOR GLACIER WEATHER STATION  
DATA TAKEN DURING October, 1984

SOLAR RADIATION VALUES MEASURED IN MILLIWATTS PER SQUARE CENTIMETER

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	Avg
1	0	0	0	0	0	0	0	1	7	13	15	16	16	18	21	14	4	1	0	0	0	0	0	0	5
2	0	0	0	0	0	0	0	0	2	6	10	9	12	12	10	9	15	2	0	0	0	0	0	0	4
3	0	0	0	0	0	0	0	1	9	30	41	44	40	34	28	19	10	3	0	0	0	0	0	0	11
4	0	0	0	0	0	0	0	1	6	19	27	32	35	33	28	18	8	2	0	0	0	0	0	0	9
5	0	0	0	0	0	0	0	0	1	8	9	17	24	22	17	16	13	7	1	0	0	0	0	0	6
6	0	0	0	0	0	0	0	0	0	2	4	8	12	39	14	7	5	4	0	0	0	0	0	0	4
7	0	0	0	0	0	0	0	0	0	2	5	9	9	9	10	11	8	9	2	0	0	0	0	0	3
8	0	0	0	0	0	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	5
9	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	4
10	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	4
11	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	4
12	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	4
13	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	4
14	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	4
15	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	4
16	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	4
17	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	4
18	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	4
19	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	4
20	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	4
21	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	4
22	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	4
23	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	4
24	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	4
25	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	4
26	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	4
27	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	4
28	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	4
29	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	4
30	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	4
31	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	4

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

## R &amp; M CONSULTANTS, INC.

## SUSITNA HYDROELECTRIC PROJECT

OBSERVATION SUMMARY FOR GLACIER WEATHER STATION  
DATA TAKEN DURING October, 1984

PARAMETER	NUMBER OF USABLE OBSERVATIONS	PERCENT OF TOTAL OBSERVATIONS
TEMPERATURE	2085	23
WIND SPEED	2085	23
WIND DIRECTION	2001	22
PEAK GUST	2085	23
RELATIVE HUMIDITY	1655	19
PRECIPITATION	0	0
SOLAR RADIATION	2085	23
DEW POINT	1655	19

THERE ARE 8928 POSSIBLE OBSERVATIONS THIS MONTH FOR EACH PARAMETER.  
THE DATA RECORDING INTERVAL IS 5 MINUTES.

THE FOLLOWING ADJUSTMENTS HAVE BEEN MADE TO THIS MONTH'S DATA:

1. RH -2 RH Points
2. Solar -1 mW/CM<sup>2</sup>
3. Wind Direction -180 degrees

Additional comments on this month's data:

1. No data after 10/8. Data tape ran out due to 5 minute recording intervals.
2. Intermittent wind direction data lost due to frozen wind vane.
3. Wind vane tail not attached. All wind direction data off by 180 degrees, but have been adjusted prior to publication.

No precipitation data for November  
(See INTERPRETATION OF DATA).

## FEDERAL CONSULTANT INC.

SPECIALIST IN HYDROGEOMORPHOLOGY AND HYDROLOGY

THREE HOUR SUMMARY FOR GLACIER WEATHER STATION  
DATA TAKEN DURING November, 1984

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	%	M/S	DEG C	M/S	MW	DEG C	DEG C	%	DEG C	M/S	MW

0300	*****	****	**	***	***	***	***	0300	*****	****	**	***	***	***	0300	-6.7	-24.9	22	097	1.7	085	5.7	0		
0600	*****	****	**	***	***	***	***	0600	*****	****	**	***	***	***	0600	-5.9	-22.8	25	121	1.6	152	6.3	0		
0900	*****	****	**	***	***	***	***	0900	*****	****	**	***	***	***	0900	-8.7	-24.4	27	001	2.2	317	7.0	1		
1200	*****	****	**	***	***	***	***	1200	-3.1	-24.1	18	046	1.0	056	3.2	12	1200	-7.3	-23.2	27	045	2.0	037	4.4	6
1500	*****	****	**	***	***	***	***	1500	-2.5	-23.0	19	062	1.5	083	7.0	7	1500	-7.0	*****	27	051	1.0	100	5.7	9
1800	*****	****	**	***	***	***	***	1800	-5.4	-22.0	26	096	2.1	115	8.3	0	1800	-9.2	-23.3	31	063	1.0	341	3.8	0
2100	*****	****	**	***	***	***	***	2100	-4.0	-22.6	22	097	2.3	093	7.0	0	2100	-8.3	*****	34	067	1.3	111	5.1	0
2400	*****	****	**	***	***	***	***	2400	-4.4	-23.0	22	020	1.5	147	7.0	0	2400	-8.2	-19.2	41	076	1.5	036	4.4	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	%	M/S	DEG C	M/S	MW	DEG C	DEG C	%	DEG C	M/S	MW

0300	-11.6	****	92	359	.3	356	3.2	0	0300	-8.4	-12.0	75	079	.9	106	2.5	0	0300	-4.6	****	82	047	1.1	039	3.2	0
0600	-10.9	-12.4	89	025	.7	355	2.5	0	0600	-6.7	-11.8	67	041	1.4	028	4.4	0	0600	-4.1	-7.9	75	066	1.4	072	3.8	0
0900	-11.5	****	91	012	.7	345	2.5	1	0900	-7.2	-11.5	71	032	1.6	027	6.3	0	0900	-3.9	****	67	077	1.5	028	3.8	0
1200	-9.2	-13.5	71	040	.9	026	2.5	19	1200	-6.4	-10.3	74	058	1.7	097	5.1	7	1200	-3.5	****	65	052	1.2	062	2.5	7
1500	-8.9	-13.4	70	058	1.1	119	3.8	2	1500	-5.9	-8.6	81	044	1.0	039	3.8	2	1500	-5.0	-7.8	81	055	1.1	039	3.2	3
1800	-9.8	****	72	044	.9	087	3.2	0	1800	-5.8	-7.8	86	041	1.2	071	3.2	0	1800	-5.1	-9.0	74	065	1.4	040	3.2	0
2100	-7.9	-13.5	64	074	1.1	059	3.2	0	2100	-5.0	-7.0	86	039	1.5	056	5.7	0	2100	-4.5	-9.7	67	073	1.4	063	3.2	0
2400	-7.8	-13.2	65	064	1.5	041	3.8	0	2400	-5.1	-6.9	87	006	1.4	063	2.5	0	2400	-4.6	-10.8	62	067	1.5	094	3.8	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	%	M/S	DEG C	M/S	MW	DEG C	DEG C	%	DEG C	M/S	MW

0300	-4.6	-10.0	66	072	.7	116	2.5	0	0300	-7.1	-10.4	77	057	1.0	007	3.2	0	0300	-11.9	****	92	032	.4	020	3.2	0
0600	-6.7	****	70	058	1.3	002	3.8	0	0600	-7.6	-10.6	79	092	1.1	049	3.8	0	0600	-12.4	****	90	101	.6	114	2.5	0
0900	-8.4	-8.5	99	056	.9	079	4.4	0	0900	-7.6	-11.8	72	041	1.4	034	3.8	0	0900	-12.1	-13.4	90	075	.9	076	3.8	0
1200	-5.4	-9.8	71	043	.6	352	2.5	26	1200	-5.8	-12.5	59	061	1.9	059	5.1	8	1200	-13.0	-14.7	87	068	.7	080	1.9	5
1500	-7.0	-9.7	81	307	.4	001	3.2	2	1500	-6.5	****	61	065	.8	085	3.8	3	1500	-13.0	-15.4	82	075	.8	080	3.2	2
1800	-8.4	-9.1	95	358	.8	034	3.2	0	1800	-8.9	-11.4	82	112	.9	038	3.2	0	1800	-14.9	-16.5	88	057	1.3	047	4.4	0
2100	-7.8	-8.5	95	087	.7	121	2.5	0	2100	-9.7	-11.8	85	089	.7	119	3.8	0	2100	-15.0	****	87	058	1.0	061	1.9	0
2400	-8.2	****	90	079	.6	317	3.2	0	2400	-9.8	-11.3	89	001	.7	359	3.2	0	2400	-13.7	****	56	070	1.0	059	2.5	0

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

## R &amp; M CONSULTANTS, INC.

## SUSSEX TNA HYDROCELL RECORDER INC PROJECT

THREE HOUR SUMMARY FOR GLACIER WEATHER STATION  
DATA TAKEN DURING November, 1984

DAY 10

DAY 11

DAY 12

HOUR	DEW	WIND	WIND GUST MAX.	POINT	DEW	WIND	WIND GUST MAX.	POINT	DEW	WIND	WIND GUST MAX.	
NDNG TEMP.	TEMP.	RH	DIR.	SPD.	NDNG TEMP.	TEMP.	RH	DIR.	SPD.	NDNG TEMP.	TEMP.	RH
DEG C	DEG C	%	DEG	M/S	DEG C	DEG C	%	DEG	M/S	DEG C	DEG C	%
0300	-15.0	-22.9	51	082	1.1	014	3.2	0	0300	-16.3	-24.3	50
0600	-16.1	-23.1	55	064	.7	102	2.3	0	0600	-16.4	*****	**
0900	-14.9	-22.6	52	064	.8	097	1.9	0	0900	-16.8	*****	**
1200	-12.4	****	42	071	1.0	063	2.5	15	1200	-15.3	-24.4	46
1500	-13.5	-22.7	46	052	.8	033	1.9	2	1500	-16.0	-24.3	49
1800	-14.5	-22.9	49	071	1.3	036	3.2	0	1800	-17.6	-25.3	51
2100	-15.5	-23.4	51	040	1.1	027	3.2	0	2100	-17.3	-24.6	53
2400	-15.5	-23.6	50	062	1.3	036	4.4	0	2400	-17.7	-25.2	52

DAY 13

DAY 14

DAY 15

HOUR	DEW	WIND	WIND GUST MAX.	POINT	DEW	WIND	WIND GUST MAX.	POINT	DEW	WIND	WIND GUST MAX.	
NDNG TEMP.	TEMP.	RH	DIR.	SPD.	NDNG TEMP.	TEMP.	RH	DIR.	SPD.	NDNG TEMP.	TEMP.	RH
DEG C	DEG C	%	DEG	M/S	DEG C	DEG C	%	DEG	M/S	DEG C	DEG C	%
0300	-15.3	-24.6	45	043	1.5	050	4.4	0	0300	-17.5	*****	41
0600	-16.5	****	47	056	1.2	064	3.2	0	0600	-16.4	*****	41
0900	-16.0	****	45	065	1.3	018	3.2	0	0900	-15.0	-26.0	39
1200	-14.1	-24.9	40	047	1.0	070	2.5	11	1200	-12.6	*****	38
1500	-15.4	-25.5	42	058	.7	072	3.2	2	1500	-13.0	-23.9	40
1800	-17.0	****	42	073	.9	002	3.2	0	1800	-12.9	*****	42
2100	-17.2	-27.1	42	065	1.0	005	3.2	0	2100	-10.9	-19.1	51
2400	-16.0	-26.3	41	063	.9	103	2.5	0	2400	-10.3	*****	82

DAY 16

DAY 17

DAY 18

HOUR	DEW	WIND	WIND GUST MAX.	POINT	DEW	WIND	WIND GUST MAX.	POINT	DEW	WIND	WIND GUST MAX.	
NDNG TEMP.	TEMP.	RH	DIR.	SPD.	NDNG TEMP.	TEMP.	RH	DIR.	SPD.	NDNG TEMP.	TEMP.	RH
DEG C	DEG C	%	DEG	M/S	DEG C	DEG C	%	DEG	M/S	DEG C	DEG C	%
0300	-7.0	-10.0	79	049	1.5	017	3.8	0	0300	-6.5	-16.8	44
0600	-6.7	-9.6	80	066	.8	037	2.5	0	0600	-8.5	*****	47
0900	-7.4	-9.5	85	064	.7	054	2.5	0	0900	-8.3	-17.7	47
1200	-6.6	-13.3	59	051	1.2	024	3.8	14	1200	-8.8	-17.9	48
1500	-7.5	-12.9	65	058	1.4	033	3.8	1	1500	-8.4	-17.8	47
1800	-7.7	-14.5	58	069	1.3	039	3.2	0	1800	-8.3	-16.7	51
2100	-6.9	-15.4	51	058	1.4	041	3.8	0	2100	-8.2	*****	53
2400	-6.7	-16.2	47	072	2.2	067	5.7	0	2400	-7.5	*****	55

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

## R &amp; M CONSULTANTES, INC.

## SUSSEX TNA HYDROCELL PROJECT

THREE HOUR SUMMARY FOR GLACIER WEATHER STATION  
DATA TAKEN DURING November, 1984

DAY 19

DAY 20

DAY 21

HOUR	DEW	WIND	WIND GUST MAX.	POINT	NDNG TEMP.	RH	DIR.	SPD.	DIR.	GUST	RAD	POINT	NDNG TEMP.	RH	DIR.	SPD.	DIR.	GUST	RAD	POINT	NDNG TEMP.	RH	DIR.	SPD.	DIR.	GUST	RAD		
	DEG C	DEG C	% DEG.	M/S	DEG C	DEG C	% DEG.	M/S	DEG C	M/S	MW	DEG C	DEG C	% DEG.	M/S	DEG C	DEG C	% DEG.	M/S	MW	DEG C	DEG C	% DEG.	M/S	DEG C	DEG C	% DEG.	M/S	MW
0300	-8.4	-15.8	55	059	1.0	052	3.8	0	0300	-7.7	-15.6	53	020	1.3	346	4.4	0	0300	-1.7	-5.2	77	130	7.8	148	23.5	0			
0600	-8.1	-16.5	51	056	1.4	034	3.2	0	0600	-7.5	-9.9	83	105	2.1	117	10.8	0	0600	-3.8	****	99	120	5.0	122	17.8	0			
0900	-7.8	-17.2	47	068	1.1	076	1.9	0	0900	-5.4	-11.3	63	106	5.6	103	15.2	0	0900	-3.5	-3.8	98	088	3.2	095	12.7	0			
1200	-7.4	-17.7	44	055	1.6	036	4.4	4	1200	-5.0	-10.5	65	130	7.6	121	17.8	1	1200	-2.9	****	91	048	.8	***	2.5	2			
1500	-6.7	-17.3	43	074	1.5	055	3.8	2	1500	-4.3	-7.6	78	127	4.7	125	13.3	0	1500	-4.2	-4.3	99	315	.2	243	2.5	0			
1800	-7.6	-17.0	47	064	1.4	054	4.4	0	1800	-2.0	-7.3	67	117	10.6	130	24.1	0	1800	-5.9	-6.3	97	273	1.4	275	4.4	0			
2100	-8.3	-17.4	48	055	1.9	044	4.4	0	2100	-1.6	-6.7	68	118	10.4	120	26.0	0	2100	-6.9	-7.6	95	320	1.8	281	5.1	0			
2400	-6.9	-16.4	47	074	1.6	101	4.4	0	2400	-1.5	-6.0	71	118	8.1	128	17.8	0	2400	-8.1	****	95	294	.5	311	2.5	0			

DAY 22

DAY 23

DAY 24

HOUR	DEW	WIND	WIND GUST MAX.	POINT	NDNG TEMP.	RH	DIR.	SPD.	DIR.	GUST	RAD	POINT	NDNG TEMP.	RH	DIR.	SPD.	DIR.	GUST	RAD	POINT	NDNG TEMP.	RH	DIR.	SPD.	DIR.	GUST	RAD		
	DEG C	DEG C	% DEG.	M/S	DEG C	DEG C	% DEG.	M/S	DEG C	M/S	MW	DEG C	DEG C	% DEG.	M/S	DEG C	DEG C	% DEG.	M/S	MW	DEG C	DEG C	% DEG.	M/S	DEG C	DEG C	% DEG.	M/S	MW
0300	-7.6	-8.1	96	107	.5	015	2.5	0	0300	-10.9	-11.7	94	352	1.2	342	3.2	0	0300	-10.1	-13.2	78	053	.9	089	3.2	0			
0600	-8.2	****	95	***	****	***	1.3	0	0600	-10.2	****	92	032	.4	095	4.3	0	0600	-10.9	-11.7	94	037	1.1	018	2.5	0			
0900	-8.8	****	89	061	1.4	051	3.2	0	0900	-10.6	****	87	026	.7	019	2.5	0	0900	-11.2	-12.0	94	068	1.3	053	7.0	0			
1200	-7.7	-9.9	84	088	1.6	122	4.4	1	1200	-9.8	****	86	048	.5	057	1.9	1	1200	-12.8	-14.4	88	329	.9	289	4.4	1			
1500	-6.6	-13.3	59	061	1.1	000	4.4	0	1500	-10.3	****	81	060	.7	012	1.9	0	1500	-13.4	****	88	348	1.7	355	4.4	0			
1800	-9.2	-14.2	67	058	1.0	354	3.2	0	1800	-10.9	****	87	072	.5	016	1.9	0	1800	-14.2	****	89	084	.6	128	2.5	0			
2100	-10.1	****	83	029	.8	011	3.2	0	2100	-10.3	****	81	068	.6	047	2.5	0	2100	-13.9	****	83	089	.7	092	1.9	0			
2400	-8.9	-10.8	86	032	1.2	042	3.8	0	2400	-9.7	-13.1	76	044	1.2	050	3.2	0	2400	-14.2	-16.2	85	098	.7	357	2.5	0			

DAY 25

DAY 26

DAY 27

HOUR	DEW	WIND	WIND GUST MAX.	POINT	NDNG TEMP.	RH	DIR.	SPD.	DIR.	GUST	RAD	POINT	NDNG TEMP.	RH	DIR.	SPD.	DIR.	GUST	RAD	POINT	NDNG TEMP.	RH	DIR.	SPD.	DIR.	GUST	RAD		
	DEG C	DEG C	% DEG.	M/S	DEG C	DEG C	% DEG.	M/S	DEG C	M/S	MW	DEG C	DEG C	% DEG.	M/S	DEG C	DEG C	% DEG.	M/S	MW	DEG C	DEG C	% DEG.	M/S	DEG C	DEG C	% DEG.	M/S	MW
0300	-14.9	****	87	106	1.0	117	2.5	0	0300	-16.4	-20.1	73	046	.8	341	1.9	0	0300	-15.9	-23.1	54	076	2.0	052	4.4	0			
0600	-15.1	****	86	***	****	***	1.3	0	0600	-16.7	****	**	067	1.6	061	3.2	0	0600	-16.5	-24.5	50	078	1.4	079	3.8	0			
0900	-16.0	****	87	***	****	***	1.3	0	0900	-16.0	-23.6	52	077	1.5	063	3.2	0	0900	-14.3	-21.8	53	069	2.0	040	6.3	0			
1200	-15.8	-18.6	79	***	****	***	1.3	1	1200	-15.0	-22.5	53	072	1.7	082	3.2	1	1200	-14.0	-20.7	57	037	2.4	033	7.0	1			
1500	-15.8	-18.6	79	***	****	***	1.9	0	1500	-15.5	****	65	064	1.2	098	3.2	0												

## R &amp; M CONSULTANTS, INC.

## SUSITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR GLACIER WEATHER STATION  
DATA TAKEN DURING November, 1984

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 C	DEG C	%	DEG C	DEG C	POINT RH	DIR.	SPD.	DIR.	GUST	RAD													
DEG C	DEG C	%	M/S	M/S	%	M/S	M/S	MW	DEG C	DEG C	%	M/S	M/S	MW												
0300	-14.1	-18.4	70	046	1.4	033	4.4	0	0300	-11.2	*****	83	090	.6	049	1.9	0	0300	-9.4	-11.0	88	088	.9	107	2.5	0
0600	-15.1	-19.2	71	062	1.9	057	5.7	0	0600	-11.2	*****	89	091	.6	104	1.9	0	0600	-9.1	-10.5	90	103	.7	117	2.5	0
0900	-14.3	*****	67	054	1.4	038	4.4	0	0900	-10.1	*****	85	073	1.0	036	3.2	0	0900	-10.0	-11.1	92	091	.9	089	3.2	0
1200	-13.2	*****	69	088	1.0	096	3.8	2	1200	-10.1	*****	87	054	.5	069	1.9	1	1200	-9.1	-11.3	84	067	1.1	090	3.8	0
1500	-12.1	-17.1	66	084	1.1	109	3.2	0	1500	-10.9	*****	89	064	.3	354	2.5	0	1500	-9.2	*****	82	100	1.3	083	3.2	0
1800	-12.6	*****	75	050	.7	105	2.5	0	1800	-10.8	*****	90	084	.7	040	1.9	0	1800	-8.3	-11.9	75	081	1.4	073	3.8	0
2100	-12.2	*****	83	119	.5	111	1.3	0	2100	-10.5	-11.7	91	114	.7	123	1.9	0	2100	-7.5	*****	72	100	1.2	104	4.4	0
2400	-11.8	-14.3	82	095	.7	132	1.9	0	2400	-9.9	*****	90	072	.5	125	2.5	0	2400	-7.7	-10.4	81	090	1.4	082	4.4	0

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

## R &amp; M CONSULTANTS, INC.

## SUSITNA HYDROELECTRIC PROJECT

MONTHLY SUMMARY FOR GLACIER WEATHER STATION  
DATA TAKEN DURING November, 1984

DAY	MAX. TEMP. DEG C			MIN. TEMP. DEG C			MEAN TEMP. DEG C			RES. WIND DIR.	RES. WIND SPD. M/S	Avg. WIND SPD. M/S	Max. GUST DIR. deg	Max. GUST SPD. M/S	P'VAL %	Mean RH	Max. DP deg C	Mean DP deg C	Day's PRECIP mm	Solar Energy WH/SQM	Day
1	XXXXX	XXXXX	XXXXX	XXX	XXXX	XXXX	XXX	XXX	XXX	XXXX	1.5	2.0	115	8.3	NE	22	-23.0	XXXX	XXXX	1217	2
2	-1.9	-6.8	-4.4	073			1.5														
3	-6	-9.4	-5.0	063			1.3	1.8	317	7.0	NE	28	-23.0	XXXX	XXXX	620	3				
4	-7.3	-11.8	-9.6	048			.8	1.3	119	3.8	NNE	74	-13.4	XXXX	XXXX	565	4				
5	-5.0	-8.4	-6.7	041			1.3	1.6	027	6.3	NNE	77	-9.9	XXXX	XXXX	285	5				
6	-3.5	-5.6	-4.6	064			1.3	1.5	072	3.8	E	73	-8.6	XXXX	XXXX	275	6				
7	-4.2	-9.8	-7.0	051			.6	1.1	079	4.4	ESE	80	-9.7	XXXX	XXXX	630	7				
8	-5.6	-11.3	-8.5	065			.9	1.3	059	5.1	NE	76	-11.6	XXXX	XXXX	355	8				
9	-9.6	-15.1	-12.4	067			.8	1.0	047	4.4	ENE	83	-15.8	XXXX	XXXX	323	9				
10	-11.4	-16.3	-13.9	063			1.0	1.1	036	4.4	FNE	50	-22.6	XXXX	XXXX	490	10				
11	-13.6	-18.0	-15.8	046			1.4	1.6	080	3.8	NE	51	-24.5	XXXX	XXXX	249	11				
12	-14.3	-19.1	-16.7	045			1.5	1.9	092	6.3	NE	49	-24.8	XXXX	XXXX	297	12				
13	-13.8	-17.8	-15.8	058			1.1	1.3	050	4.4	NE	44	-25.3	XXXX	XXXX	280	13				
14	-10.3	-17.5	-13.9	051			.9	1.2	014	5.1	NE	42	-24.1	XXXX	XXXX	260	14				
15	-4.5	-10.1	-7.3	050			.9	1.2	051	4.4	NNE	81	-9.3	XXXX	XXXX	173	15				
16	-6.0	-8.9	-7.5	061			1.3	1.5	067	5.7	FNE	65	-12.8	XXXX	XXXX	188	16				
17	-6.1	-9.2	-7.7	071			1.2	1.4	048	4.4	E	48	-17.1	XXXX	XXXX	198	17				
18	-6.7	-9.7	-8.2	061			1.2	1.4	049	4.4	NE	60	-14.2	XXXX	XXXX	208	18				
19	-6.4	-9.8	-8.1	063			1.4	1.6	036	4.4	E	48	-16.8	XXXX	XXXX	140	19				
20	-9	-8.3	-4.6	117			5.9	6.5	120	26.0	ESE	68	-9.8	XXXX	XXXX	35	20				
21	-1.2	-8.1	-4.7	115			1.5	2.9	148	23.5	ESE	90	-5.5	XXXX	XXXX	61	21				
22	-6.4	-10.4	-8.4	061			1.0	1.3	122	4.4	E	83	-10.9	XXXX	XXXX	43	22				
23	-8.5	-11.2	-9.9	038			.6	.9	095	4.3	NNE	87	-11.9	XXXX	XXXX	48	23				
24	-8.9	-14.6	-11.8	036			.7	1.2	053	7.0	NNE	85	-13.9	XXXX	XXXX	33	24				
25	-13.7	-16.8	-15.3	106			1.0	.7	XXX	3.5	ESE	75	-19.2	XXXX	XXXX	28	25				
26	-14.6	-17.5	-16.1	063			1.4	1.5	060	5.1	ENE	83	-21.6	XXXX	XXXX	35	26				
27	-13.3	-16.8	-15.1	054			2.5	2.7	035	8.9	NE	58	-21.2	XXXX	XXXX	38	27				
28	-11.8	-15.4	-13.6	064			1.1	1.3	057	5.7	ENE	69	-18.2	XXXX	XXXX	65	28				
29	-9.5	-11.9	-10.7	082			.6	.8	036	3.2	ESE	86	-12.4	XXXX	XXXX	20	29				
30	-7.3	-10.0	-8.7	090			1.1	1.2	104	4.4	E	81	-11.3	XXXX	XXXX	5	30				
MONTH	-6	-19.1	-10.0	070			1.2	1.6	120	26.0	ESE	63	-16.0	XXXX	XXXX	7159					

GUST VEL. AT MAX. GUST MINUS 2 INTERVALS 18.4

GUST VEL. AT MAX. GUST MINUS 1 INTERVAL 23.5

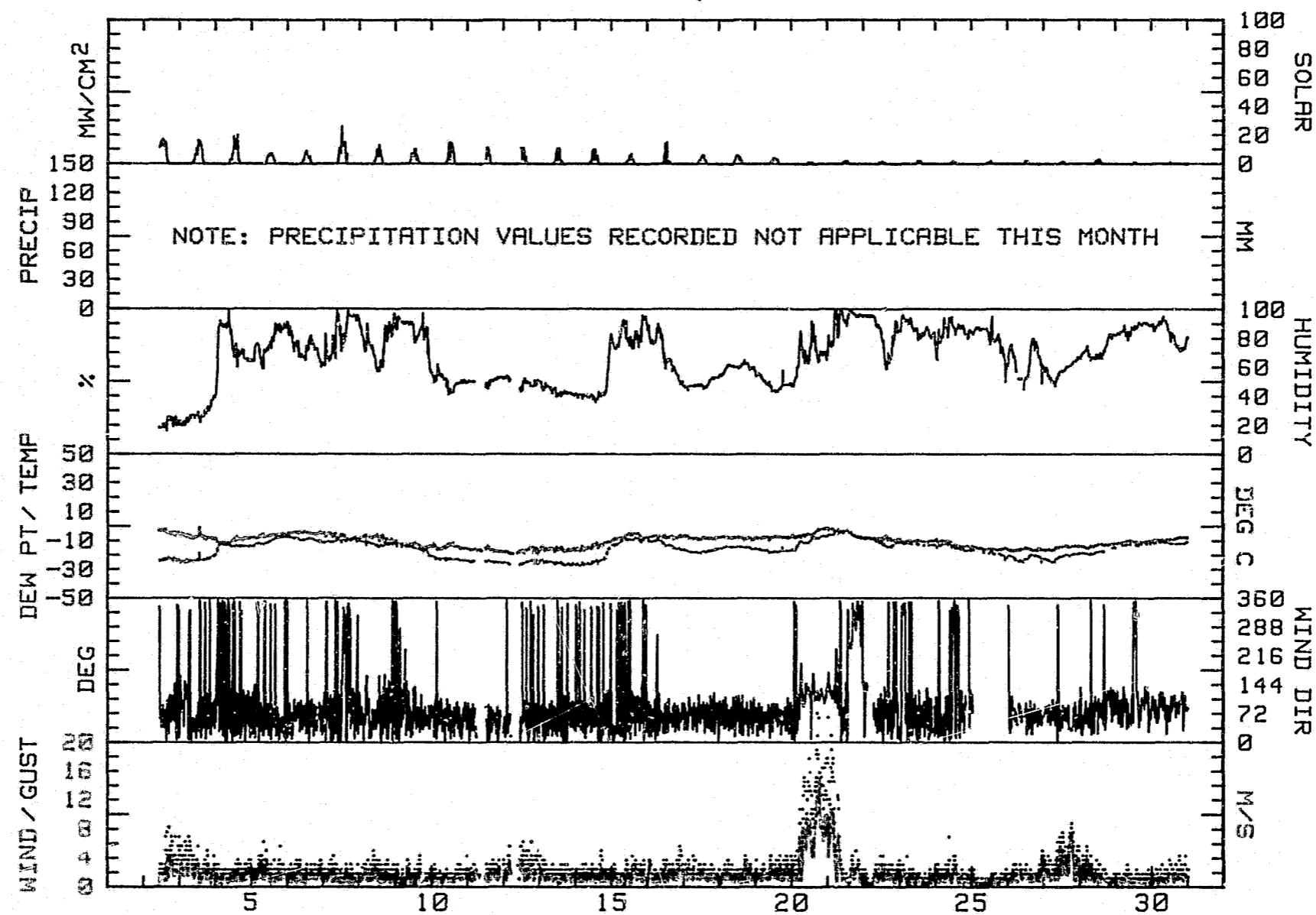
GUST VEL. AT MAX. GUST PLUS 1 INTERVAL 15.9

GUST VEL. AT MAX. GUST PLUS 2 INTERVALS 15.9

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 INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

R&M CONSULTANTS, INC.  
SUSITNA HYDROELECTRIC PROJECT  
GLACIER WEATHER STATION  
November, 1984



## R &amp; M CONSULTANTS, INC.

## SUSITNA HYDROELECTRIC PROJECT

WIND FREQUENCY SUMMARY FOR GLACIER WEATHER STATION  
DATA TAKEN DURING November, 1984

DIRECTION	VELOCITY (M/S)								TOTAL
	0-2	1-0	3-0	6-0	10-0	15-0	20-0	OR	
	TO	TO	TO	TO	TO	TO	TO	GREATER	
1-0	3-0	6-0	10-0	15-0	20-0				
N	1.76	4.72	.08	.04	0.00	0.00	0.00	.	6.61
NNE	3.09	9.53	.50	.08	0.00	0.00	0.00	.	13.21
NE	4.39	13.38	1.34	.13	0.00	0.00	0.00	.	19.23
ENE	5.10	14.09	.59	0.00	0.00	0.00	0.00	.	19.77
E	3.76	12.83	.46	.25	0.00	0.00	0.00	.	17.31
ESE	2.93	5.69	.29	1.46	.42	.04	0.00	.	10.83
SE	1.21	1.84	.33	.67	.17	0.00	0.00	.	4.22
SSE	.63	.59	.17	.08	0.00	0.00	0.00	.	1.46
S	.08	0.00	.08	0.00	0.00	0.00	0.00	.	.17
SSW	.04	.04	0.00	0.00	0.00	0.00	0.00	.	.08
SW	.13	.25	0.00	0.00	0.00	0.00	0.00	.	.36
WSW	.25	.21	0.00	0.00	0.00	0.00	0.00	.	.46
W	.08	.13	0.00	0.00	0.00	0.00	0.00	.	.21
WNW	.21	.25	0.00	0.00	0.00	0.00	0.00	.	.46
NW	.54	.88	.04	0.00	0.00	0.00	0.00	.	1.46
NNW	.88	2.80	.08	0.00	0.00	0.00	0.00	.	3.76
CALM								.	.38
TOTAL	25.08	67.22	3.97	2.72	.59	.04	0.00	100.00	

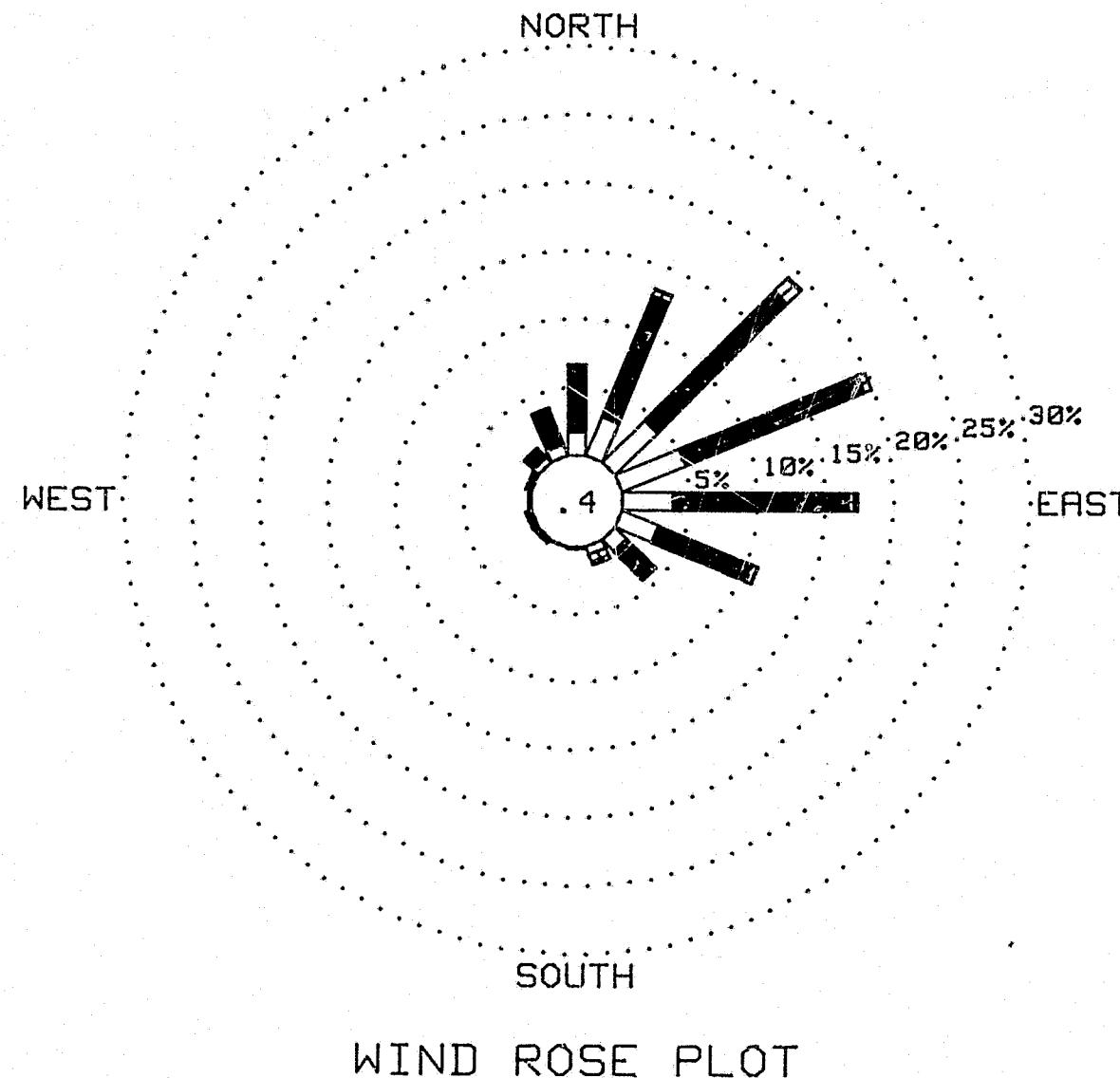
NOTE: ALL FREQUENCIES ARE EXPRESSED IN PERCENT

2392 VALID WIND OBSERVATIONS USED TO DEVELOP FREQUENCY SUMMARY

3880 WIND OBSERVATIONS WOULD HAVE BEEN CORRECT FOR 15 MINUTE DATA.

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

R&M CONSULTANTS, INC.  
SUSITNA HYDROELECTRIC PROJECT  
GLACIER WEATHER STATION  
November, 1984



## R &amp; M CONSULTANTS, INC.

## SUSITNA HYDROELECTRIC PROJECT

HOURLY SOLAR RADIATION SUMMARY FOR GLACIER WEATHER STATION  
DATA TAKEN DURING November, 1964

SOLAR RADIATION VALUES MEASURED IN MILLIWATTS PER SQUARE CENTIMETER

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	Avg
1	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	3
2	***	***	***	***	***	***	***	***	***	12	15	17	14	12	3	1	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	1	2	7	9	16	15	10	2	0	0	0	0	0	0	0	0	3.2
4	0	0	0	0	0	0	0	0	0	3	4	11	15	12	11	2	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	1	5	6	7	6	4	1	0	0	0	0	0	0	0	0	1.1
6	0	0	0	0	0	0	0	0	0	1	3	7	2	5	5	1	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	3	9	15	14	13	7	2	0	0	0	0	0	0	0	0	3.1
8	0	0	0	0	0	0	0	0	0	1	3	9	9	9	4	1	0	0	0	0	0	0	0	0	1.1
9	0	0	0	0	0	0	0	0	0	2	6	6	9	5	4	1	0	0	0	0	0	0	0	0	1.2
10	0	0	0	0	0	0	0	0	0	1	3	13	12	13	7	1	0	0	0	0	0	0	0	0	1.1
11	0	0	0	0	0	0	0	0	0	***	***	***	8	10	5	1	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	***	***	8	8	8	3	1	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0	2	3	9	9	7	2	1	0	0	0	0	0	0	0	0	1.1
14	0	0	0	0	0	0	0	0	0	1	3	8	8	6	4	1	0	0	0	0	0	0	0	0	1.1
15	0	0	0	0	0	0	0	0	0	1	2	4	4	4	2	0	0	0	0	0	0	0	0	0	1.1
16	0	0	0	0	0	0	0	0	0	0	0	1	9	5	5	2	0	0	0	0	0	0	0	0	1.1
17	0	0	0	0	0	0	0	0	0	1	2	4	6	5	3	1	0	0	0	0	0	0	0	0	1.1
18	0	0	0	0	0	0	0	0	0	1	3	6	5	4	3	2	0	0	0	0	0	0	0	0	1.1
19	0	0	0	0	0	0	0	0	0	0	0	1	3	3	3	1	0	0	0	0	0	0	0	0	1.0
20	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0	0	0	1	1	2	1	1	0	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	1	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	1	1	0	0	0	0	0	0	0
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	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

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

## R &amp; M CONSULTANTS, INC.

## SUSITNA HYDROELECTRIC PROJECT

OBSERVATION SUMMARY FOR GLACIER WEATHER STATION  
DATA TAKEN DURING November, 1984

PARAMETER	NUMBER OF USABLE OBSERVATIONS	PFRCENT OF TOTAL OBSERVATIONS
TEMPERATURE	2587	94
WIND SPEED	2523	92
WIND DIRECTION	2465	87
PEAK GUST	2016	89
RELATIVE HUMIDITY	1961	68
PRECIPITATION	0	0
SOLAR RADIATION	2399	94
DEW POINT	1861	68

THERE ARE 2756 POSSIBLE OBSERVATIONS THIS MONTH FOR EACH PARAMETER.  
THE DATA RECORDING INTERVAL IS 15 MINUTES.

THE FOLLOWING ADJUSTMENTS HAVE BEEN MADE TO THIS MONTH'S DATA:

- |          |                       |               |
|----------|-----------------------|---------------|
| 1. RH    | +5 RH Points          | 11/2 - 11/28  |
|          | +7                    | 11/28 - 11/30 |
| 2. Solar | -1 mW/CM <sup>2</sup> |               |

Additional comments on this month's data:

1. No data on day 1 and half of day 2. Data tape ran out due to 5 minute recording intervals.
2. Intermittent wind speed and direction data lost due to frozen anemometer and wind vane.
3. Intermittent data for all parameters lost due to weather wizard malfunction. RH, Temperature, and Solar data estimated where possible.
4. Data recorded at 15 minute time intervals 11/2 - 11/28. Changed to 30 minutes on 11/28.

No precipitation data for December

(See INTERPRETATION OF DATA).

## IR - 4 M CONSTRUCTION INC.

## SUSITNA HYDROCELL ELECTRIC PROJECT

THREE HOUR SUMMARY FOR GLACIER WEATHER STATION  
DATA TAKEN DURING December, 1984

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 C	DEG C	%	DEG C	DEG C	DIR.	SPD.	DIR.	GUST	RAD	
			M/S	M/S	MW			M/S	M/S	M/S	MW		

0300	-8.4	*****	90	066	.6	021	2.5	0 0300	-6.4	-11.3	68	071	1.2	043	4.4	0 0300	-3.8	*****	96	056	.6	058	3.2	0
0600	-8.3	-9.4	92	048	1.0	047	2.5	0 0600	-6.8	-11.9	67	079	1.7	077	4.4	0 0600	-4.1	-5.2	92	051	1.3	024	5.7	0
0900	-7.9	-8.7	94	081	1.0	101	3.2	0 0900	-7.1	-12.2	67	066	1.5	050	3.2	0 0900	-4.2	*****	89	055	.8	044	3.2	0
1200	-7.1	-8.8	88	089	1.1	108	2.5	0 1200	-5.6	-14.2	51	064	1.7	030	3.8	0 1200	-4.4	-5.5	92	077	1.0	093	3.2	0
1500	-6.2	-9.7	76	083	1.1	357	3.8	0 1500	-7.0	-9.7	81	038	1.5	029	4.4	0 1500	-3.7	*****	83	064	1.0	045	3.8	0
1800	-6.7	*****	79	053	.9	018	2.5	0 1800	-4.5	-7.1	62	065	1.3	097	3.1	0 1800	-3.0	-5.8	81	059	1.3	088	3.2	0
2100	-7.4	-10.4	79	009	1.1	325	3.8	0 2100	-4.1	-6.1	86	048	1.6	035	3.8	0 2100	-1.3	-5.5	73	100	2.2	111	8.3	0
2400	-6.4	-10.9	70	064	1.4	072	3.2	0 2400	-4.2	*****	97	035	1.4	020	3.8	0 2400	1.5	-1.4	81	095	4.4	109	9.5	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 C	DEG C	%	DEG C	DEG C	M/S	M/S	M/S	M/S	MW	

0300	-2.1	-4.3	85	062	1.6	054	3.8	0 0300	-3.2	-7.3	73	127	7.5	129	16.5	0 0300	-4.4	-12.1	55	074	2.2	058	5.7	0
0600	.9	-6.4	58	073	3.8	070	12.1	0 0600	-3.6	-7.0	77	104	4.3	139	9.5	0 0600	-3.9	-13.4	48	080	1.6	074	5.1	0
0900	0.0	-4.8	70	089	5.8	085	19.8	0 0900	-4.7	-5.3	96	068	1.2	136	5.1	0 0900	-3.3	-14.2	43	071	1.9	064	3.8	0
1200	.8	-6.1	60	107	4.9	105	14.0	1 1200	-4.6	*****	96	014	1.0	029	2.5	0 1200	-4.1	-15.2	42	075	1.5	075	3.8	2
1500	-1.0	-4.2	79	103	3.0	102	6.3	0 1500	-4.7	*****	93	063	.3	112	1.9	0 1500	-5.3	*****	48	057	1.1	087	3.2	0
1800	-1.9	-2.9	93	040	1.5	091	4.4	0 1800	-4.8	-6.5	88	069	1.6	062	5.1	0 1800	-7.2	-13.4	61	039	.9	044	2.5	0
2100	-2.5	-3.1	96	105	.9	071	4.4	0 2100	-3.8	-9.8	63	069	1.7	075	3.8	0 2100	-6.8	-9.5	81	035	1.2	046	3.2	0
2400	-3.0	-5.8	81	115	2.9	113	10.8	0 2400	-4.9	-11.5	60	070	1.6	054	3.2	0 2400	-8.3	-9.4	92	019	1.2	019	3.2	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 C	DEG C	%	DEG C	DEG C	M/S	M/S	M/S	M/S	MW	

0300	-9.7	-10.5	94	354	1.4	008	3.2	0 0300	-8.1	-10.8	81	034	1.9	021	5.1	0 0300	-13.4	-18.2	67	121	2.1	142	4.4	0
0600	-10.6	*****	93	028	.8	339	3.2	0 0600	-8.3	-10.0	88	051	1.1	017	2.5	0 0600	-13.4	-17.5	71	111	3.4	098	6.7	0
0900	-9.8	-12.2	83	052	.9	356	3.2	0 0900	-8.7	-10.2	89	064	1.3	040	3.8	0 0900	-14.1	-20.8	57	121	5.1	122	7.6	0
1200	-5.8	-7.3	89	047	.7	060	3.2	1 1200	-9.1	*****	90	053	1.0	029	3.2	1 1200	-14.3	-21.4	55	121	2.8	122	8.6	2
1500	-10.4	*****	89	029	.8	044	3.2	0 1500	-11.1	*****	90	180	.6	250	2.5	0 1500	-18.8	-22.9	70	077	1.8	***	5.3	0
1800	-10.2	-15.7	64	066	2.0	055	4.2	0 1800	-11.0	-13.8	80	073	1.5	060	4.4	0 1800	-18.4	*****	**	038	1.2	000	4.4	0
2100	-10.4	-12.7	83	073	1.7	097	4.4	0 2100	-11.3	-16.9	63	113	2.7	108	5.7	0 2100	*****	*****	**	***	***	***	***	0
2400	-9.0	-10.6	88	058	1.2	037	4.4	0 2400	-11.4	-18.6	65	118	2.9	103	4.4	0 2400	-16.8	*****	**	***	***	***	***	0

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

## R &amp; M CONSULTANTS, INC.

## SUSSES HYDRO ELECTRIC PROJECT

THREE HOUR SUMMARY FOR GLACIER WEATHER STATION  
DATA TAKEN DURING December, 1984

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		
DEG C	% DEG.	M/S	MW	DEG C	% DEG.	M/S	DEG C	% DEG.	M/S	MW	DEG C	% DEG.	M/S	MW

0300	*****	***	**	***	***	2.6	0	0300	-16.0	-23.4	53	072	1.5	072	3.8	0	0300	*****	***	63	030	1.0	***	6.4	0	
0600	*****	***	54	050	.9	059	3.2	0	0600	-16.3	*****	56	076	1.4	083	3.8	0	0600	-19.0	-22.9	71	010	1.8	010	3.8	0
0900	*****	***	**	060	1.2	***	3.4	0	0900	-14.9	-20.5	62	031	1.4	041	3.2	0	0900	-19.8	-22.9	76	***	***	***	4.3	0
1200	*****	***	**	***	***	***	4.2	***	1200	-12.6	*****	56	051	1.2	048	2.5	2	1200	-18.0	-24.4	57	037	1.3	056	3.2	1
1500	*****	***	**	***	***	***	6.1	0	1500	-12.5	-19.5	56	056	1.0	053	3.2	0	1500	-18.4	*****	67	068	.9	080	4.6	1
1800	*****	***	**	***	***	6.1	0	1800	-13.5	-20.4	56	052	1.2	056	3.2	0	1800	*****	*****	56	072	1.6	083	3.8	0	
2100	*****	***	55	***	***	3.8	0	2100	-16.1	-20.4	69	038	1.4	086	3.8	0	2100	*****	*****	**	079	2.1	080	3.8	0	
2400	*****	***	53	***	***	6.2	0	2400	-17.7	-24.6	55	043	1.8	046	3.8	0	2400	-17.2	-25.4	49	081	1.8	***	***	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.	GUST	RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST
DEG C	% DEG.	M/S	MW	DEG C	% DEG.	M/S	MW	DEG C	% DEG.	M/S	MW	

0300	-15.2	-27.0	36	072	1.8	056	4.4	0	0300	-15.7	-28.4	33	054	2.3	053	6.3	0	0300	-11.9	-28.7	23	090	1.6	078	4.4	0
0600	-14.5	-25.0	41	069	1.7	096	4.6	0	0600	-14.8	-27.9	32	098	2.4	117	7.0	0	0600	-14.3	*****	25	037	1.1	052	3.2	0
0900	-14.3	-22.0	52	072	1.8	104	3.8	0	0900	-15.2	-29.0	30	100	1.9	090	5.7	0	0900	-16.6	-29.5	32	322	1.0	295	3.2	0
1200	-15.0	-22.7	52	065	2.2	070	4.4	1	1200	-17.5	-30.3	32	094	1.6	063	6.7	2	1200	-14.5	-18.7	70	074	1.4	109	4.6	5
1500	-15.1	-21.5	58	074	1.7	089	3.8	0	1500	-15.7	-30.9	26	080	2.1	063	4.4	3	1500	-15.6	-18.1	81	073	1.9	090	6.0	0
1800	-15.1	-21.9	56	058	1.6	078	3.2	0	1800	-14.0	-29.8	25	076	1.9	080	4.4	0	1800	-13.9	-17.1	77	069	1.4	052	3.8	0
2100	-16.1	-25.4	45	046	1.4	036	3.8	0	2100	-12.7	-29.1	24	067	1.8	069	4.4	0	2100	-13.6	*****	82	047	1.0	056	3.2	0
2400	-15.7	-28.1	34	067	3.0	085	7.0	0	2400	-12.7	-29.1	24	064	1.6	055	4.4	0	2400	-12.4	-14.1	87	060	1.1	041	3.8	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
DEG C	% DEG.	M/S	MW	DEG C	% DEG.	M/S	MW	DEG C	% DEG.	M/S	MW	

0300	-12.6	*****	89	095	1.6	131	3.8	0	0300	-6.4	-7.4	93	055	1.5	049	5.1	0	0300	-6.6	-7.2	96	***	***	***	3.2	0
0600	-12.8	*****	89	131	.8	108	3.8	0	0600	-5.8	-6.8	93	109	1.9	138	4.4	0	0600	-5.9	-6.7	94	***	***	***	3.2	0
0900	-11.3	*****	89	357	.5	209	2.5	0	0900	-4.9	-5.6	95	***	***	***	6.3	0	0900	-5.8	*****	95	***	***	***	1.9	0
1200	-11.1	*****	88	018	.7	043	2.5	0	1200	-4.2	-6.7	83	***	***	***	7.6	0	1200	-5.0	-6.6	89	***	***	***	3.2	0
1500	-8.8	-10.3	89	083	1.6	056	3.8	0	1500	-4.9	-6.5	89	022	1.1	354	6.3	0	1500	-5.4	*****	96	***	***	***	2.5	0
1800	-9.6	-10.3	95	082	1.0	134	5.1	0	1800	-5.7	*****	97	118	.7	114	2.5	0	1800	-4.9	-5.3	97	***	***	***	1.3	0
2100	-7.2	-8.0	94	049	1.4	074	4.4	0	2100	-6.5	-7.1	96	110	.4	050	2.5	0	2100	-4.7	-5.1	97	***	***	***	***	0
2400	-6.7	*****	95	079	1.3	051	3.8	0	2400	-6.4	*****	96	***	***	***	2.5	0	2400	-7.1	-7.7	96	***	***	***	***	0

\*\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*\*

## R &amp; M CONSULTANTS, INC.

## SUSITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR GLACIER WEATHER STATION  
DATA TAKEN DURING December, 1984

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	DEG C % DEG. M/S MW	NDNG TEMP. POINT RH DIR. SPD. DIR. GUST RAD	DEG C % DEG. M/S MW	NDNG TEMP. POINT RH DIR. SPD. DIR. GUST RAD	DEG C % DEG. M/S MW	NDNG TEMP. POINT RH DIR. SPD. DIR. GUST RAD	DEG C % DEG. M/S MW				

0300 -8.0 -9.1 92 *** **** 0 0300 -14.8 -30.5 25 044 2.3 064 6.1 0 0300 -16.1 -26.4 41 086 1.7 080 4.4 0
0600 -10.1 -15.0 67 037 1.5 011 7.0 0 0600 -14.8 -30.9 24 056 2.0 054 4.4 0 0600 -15.2 -19.8 68 083 1.3 091 3.8 0
0900 -11.3 -22.0 41 320 2.8 338 17.8 0 0900 -14.4 -30.2 25 067 1.2 085 2.5 0 0900 -14.7 -16.7 85 050 ,9 069 2.5 0
1200 -15.6 -24.9 45 329 3.0 337 7.6 1 1200 -15.2 -30.1 27 039 1.1 056 3.2 2 1200 -14.1 -16.2 84 014 1.0 014 2.5 2
1500 -18.3 -25.3 54 029 1.6 095 9.5 0 1500 -15.5 -33.9 19 041 1.1 075 3.2 1 1500 -15.0 -16.7 87 007 1.3 356 3.2 0
1800 -15.6 -26.0 41 077 2.1 077 5.7 0 1800 -15.3 -29.4 29 059 1.4 059 3.8 0 1800 -14.4 -16.8 82 079 1.9 059 5.1 0
2100 -14.7 -28.5 30 343 2.1 005 8.3 0 2100 -15.9 -29.9 29 048 1.4 044 3.8 0 2100 -13.8 -16.5 80 083 1.6 053 5.1 0
2400 -17.8 -29.4 36 047 2.9 046 6.3 0 2400 -16.2 -28.9 33 067 1.5 081 5.1 0 2400 -12.1 -14.7 81 104 2.3 098 5.1 0

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	DEG C % DEG. M/S MW	NDNG TEMP. POINT RH DIR. SPD. DIR. GUST RAD	DEG C % DEG. M/S MW	NDNG TEMP. POINT RH DIR. SPD. DIR. GUST RAD	DEG C % DEG. M/S MW	NDNG TEMP. POINT RH DIR. SPD. DIR. GUST RAD	DEG C % DEG. M/S MW				

0300 -13.2 -15.3 84 060 1.5 049 5.7 0 0300 -9.0 **** 93 068 ,7 027 2.5 0 0300 -10.8 -16.3 64 271 5.4 311 16.5 0
0600 -12.2 -13.8 88 080 1.4 035 5.1 0 0600 -8.0 -9.4 90 054 ,7 035 2.5 0 0600 -14.3 -16.1 86 270 4.8 300 11.4 0
0900 -11.8 -13.5 87 081 1.1 069 3.2 0 0900 -8.1 -8.9 94 076 ,7 029 3.2 0 0900 -15.6 -18.0 82 269 ,6 232 8.9 0
1200 -10.3 **** 85 093 1.0 077 3.8 1 1200 -5.5 -7.2 88 047 1.4 051 4.4 0 1200 -15.1 -19.2 71 048 1.2 036 4.4 1
1500 -10.7 -12.6 86 056 1.0 036 3.2 0 1500 -6.3 -7.1 94 064 1.6 031 7.6 0 1500 -14.7 -18.9 70 055 1.1 061 3.8 0
1800 -10.8 -13.1 83 078 1.5 070 3.8 0 1800 -9.9 -10.7 94 355 1.3 041 5.1 0 1800 -15.1 -19.5 69 056 1.2 030 2.5 0
2100 -9.2 -11.7 82 083 1.2 104 3.8 0 2100 -10.3 -12.4 85 298 1.4 283 7.0 0 2100 -14.7 -19.8 65 063 1.7 054 4.4 0
2400 -9.2 -10.7 89 050 1.3 058 4.4 0 2400 -12.6 -16.3 74 223 3.3 196 8.9 0 2400 -15.0 -19.4 69 060 1.5 046 3.8 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	DEG C % DEG. M/S MW	NDNG TEMP. POINT RH DIR. SPD. DIR. GUST RAD	DEG C % DEG. M/S MW	NDNG TEMP. POINT RH DIR. SPD. DIR. GUST RAD	DEG C % DEG. M/S MW	NDNG TEMP. POINT RH DIR. SPD. DIR. GUST RAD	DEG C % DEG. M/S MW				

0300 -13.0 -17.5 69 049 1.7 031 3.8 0 0300 -13.8 **** 88 *** *** *** 2.5 0 0300 -17.1 -21.7 67 027 2.2 022 7.0 0
0600 -11.9 -16.8 67 045 1.6 038 3.8 0 0600 -14.4 **** 87 044 ,7 023 3.8 0 0600 -15.6 -20.7 65 036 2.2 030 5.1 0
0900 -13.8 **** 88 070 ,6 353 3.2 0 0900 -14.8 -16.4 88 045 ,8 021 3.8 0 0900 -17.0 -22.7 61 043 2.0 012 5.7 0
1200 -12.7 -14.9 84 081 ,9 081 2.5 2 1200 -15.5 -17.3 86 356 1.2 031 3.8 0 1200 -16.6 -22.9 58 057 2.1 047 5.7 0
1500 -13.4 **** 85 *** *** *** 2.5 0 1500 -15.1 -17.9 79 028 1.4 032 3.8 0 1500 -16.0 -23.2 54 066 1.6 058 4.4 0
1800 -13.6 **** 86 *** *** *** 3.8 0 1800 -16.2 -19.0 79 055 1.2 014 5.1 0 1800 -15.9 -24.2 49 067 1.4 066 3.2 0
2100 -13.9 **** 88 *** *** *** 3.8 0 2100 -17.3 -20.7 75 095 2.2 083 6.3 0 2100 -16.0 -26.0 42 067 1.5 075 3.2 0
2400 -14.1 -15.7 88 *** *** *** 3.2 0 2400 -16.6 -21.1 68 076 2.1 059 7.1 0 2400 -16.6 -26.9 41 071 1.5 085 3.2 0

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

## R &amp; M CONSULTANTS, INC.

## SUSITNA HYDRO ELECTRIC PROJECT

THREE HOUR SUMMARY FOR GLACIER WEATHER STATION  
DATA TAKEN DURING December, 1984

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.	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	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 C	DEG C	%	DEG. M/S	DEG. M/S	MW

0300	-16.9	-26.1	45	058	1.6	036	3.8	0	0300	-17.9	-21.5	73	087	2.2	094	5.7	0	0300	-12.9	-15.1	84	073	3.4	078	7.6	0
0600	-17.0	-26.2	45	076	1.8	078	3.8	0	0600	-14.8	-17.5	80	020	.7	043	3.2	0	0600	-11.6	-15.5	73	075	2.6	075	7.0	0
0900	-18.1	-27.0	46	067	1.7	050	3.8	0	0900	-16.8	-19.0	83	061	1.0	028	3.8	0	0900	-10.6	-15.2	69	081	4.9	083	8.3	0
1200	-17.7	-26.8	45	071	1.9	032	3.8	1	1200	-15.0	*****	82	095	1.0	087	3.8	0	1200	-9.9	-14.8	67	085	5.4	083	8.9	1
1500	-19.2	-28.2	45	060	1.5	079	3.2	0	1500	-15.1	-17.3	83	080	1.3	125	3.8	0	1500	-9.6	-12.4	80	132	3.9	113	11.4	0
1800	-19.4	-28.4	45	039	1.4	034	3.2	0	1800	-14.7	*****	85	046	.5	076	1.9	0	1800	-8.4	-12.4	73	107	7.6	101	12.1	0
2100	-18.5	-28.1	43	068	1.6	053	3.4	0	2100	-14.3	*****	85	055	.7	076	2.5	0	2100	-8.6	-11.0	83	102	3.7	111	9.5	0
2400	-15.2	-22.6	53	062	1.5	066	5.1	0	2400	-13.8	-15.8	85	074	.9	145	3.8	0	2400	-7.7	-10.2	82	123	3.1	122	10.8	0

DAY 31

HOUR	DEW	WIND	WIND GUST MAX.
NDNG TEMP.	POINT RH	DIR.	SPD.
DEG C	DEG C	%	DEG. M/S

0300	-6.3	-9.5	78	045	1.8	075	5.1	0
0600	-6.4	*****	75	059	1.5	080	3.8	0
0900	-4.2	-7.5	78	061	2.4	076	8.3	0
1200	-3.8	-6.3	83	055	2.1	071	9.5	0
1500	-4.4	-5.1	95	133	1.5	130	8.3	0
1800	-2.6	-5.7	79	094	3.1	093	8.3	0
2100	-2.3	-6.5	73	103	6.6	110	12.1	0
2400	-3.2	-5.5	84	113	6.1	102	10.2	0

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

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## R &amp; M CONSULTANTS, INC.

## GLASS TINTA HYDRO ELECTRIC PROJECT

MONTHLY SUMMARY FOR GLACIER WEATHER STATION  
DATA TAKEN DURING December, 1984

DAY	MAX.	MIN.	MEAN	REG.	RES.	Avg.	Max.	Max.	GUST P'VAL			MEAN	MEAN	DAY'S
	TEMP. DEG C	TEMP. DEG C	TEMP. DEG C	WIND DIR.	WIND SPD. M/S	WIND SPD. M/S	GUST DIR.	GUST SPD. M/S	P'VAL DIR.	RH %	DP DEG C	PRECIP MM	SOLAR ENERGY WH/SQM	
1	-5.6	-8.4	-7.0	263	.9	1.2	357	3.8	ENE	83	-9.5	****	10	1
2	-3.4	-8.4	-5.9	058	1.4	1.6	043	4.4	NE	73	-10.4	****	10	2
3	1.5	-4.6	-1.6	080	1.5	1.7	109	9.5	E	85	-5.2	****	10	3
4	1.8	-3.3	-.8	091	2.9	3.2	105	14.0	E	76	-4.9	****	35	4
5	-2.4	-5.0	-3.7	098	2.0	2.5	129	16.5	ENE	78	-7.4	****	5	5
6	-3.3	-8.3	-5.8	061	1.3	1.5	058	5.7	ENE	56	-12.8	****	85	6
7	-5.8	-11.3	-8.6	047	1.1	1.4	097	4.4	ENE	62	-12.3	****	35	7
8	-7.3	-13.4	-10.4	085	1.3	1.8	108	5.7	NE	80	-12.7	****	25	8
9	-13.1	-19.2	-16.2	113	2.7	3.1	122	8.6	ESE	64	-20.2	****	40	9
10	-15.1	-16.8	-16.0	056	1.1	1.4	***	6.2	E	54	*****	****	0	10
11	-12.5	-18.8	-15.7	051	1.3	1.4	072	3.8	NE	58	-21.6	****	80	11
12	-15.6	-19.8	-17.7	058	1.4	1.7	***	6.4	E	59	-23.9	****	75	12
13	-14.0	-16.3	-15.2	065	1.9	2.0	085	7.0	ENE	48	-24.0	****	40	13
14	-12.7	-17.5	-15.1	079	1.9	2.1	117	7.0	E	28	-29.6	****	105	14
15	-11.4	-18.8	-15.1	061	1.1	1.5	090	6.0	E	57	-22.1	****	105	15
16	-6.5	-13.3	-9.9	074	.9	1.4	134	5.1	N	89	-10.9	****	0	16
17	-3.4	-7.1	-5.3	072	.9	1.3	***	7.6	NE	90	-6.8	****	0	17
18	-4.0	-7.3	-5.7	***	****	.9	***	3.2	***	95	-6.0	****	0	18
19	-7.3	-18.8	-13.1	006	1.7	2.9	338	17.8	N	56	-21.6	****	35	19
20	-14.3	-16.9	-15.6	052	1.5	1.6	064	6.1	ENE	27	-30.1	****	100	20
21	-12.1	-16.3	-14.2	072	1.3	1.6	059	5.1	NNE	73	-18.9	****	45	21
22	-8.4	-13.4	-10.9	073	1.2	1.4	049	5.7	ENE	85	-13.3	****	30	22
23	-5.5	-12.6	-9.1	020	.3	1.7	196	8.9	NNE	90	-10.1	****	0	23
24	-10.5	-16.0	-13.3	301	.9	2.7	311	16.5	ENE	72	-18.3	****	60	24
25	-11.8	-14.8	-13.3	052	1.3	1.3	031	3.8	NE	79	-16.2	****	60	25
26	-13.1	-17.9	-15.5	056	1.2	1.5	059	7.1	NNE	80	-18.4	****	5	26
27	-15.4	-17.7	-16.6	052	1.7	1.9	022	7.0	ENE	56	-23.2	****	5	27
28	-15.2	-20.0	-17.6	064	1.6	1.8	066	5.1	FNE	45	-27.1	****	40	28
29	-13.8	-19.5	-16.7	072	.9	1.3	094	5.7	NNE	79	-18.1	****	0	29
30	-6.7	-12.9	-9.8	098	4.1	4.6	101	12.1	F	74	-13.7	****	25	30
31	-1.9	-7.0	-4.5	092	2.8	3.5	110	12.1	ESE	81	-7.2	****	20	31
MONTH	1.8	-20.0	-11.1	072	1.4	1.9	338	17.8	ENE	68	-15.9	****	1085	

GUST VEL. AT MAX. GUST MINUS 2 INTERVALS 7.0

GUST VEL. AT MAX. GUST MINUS 1 INTERVAL 10.8

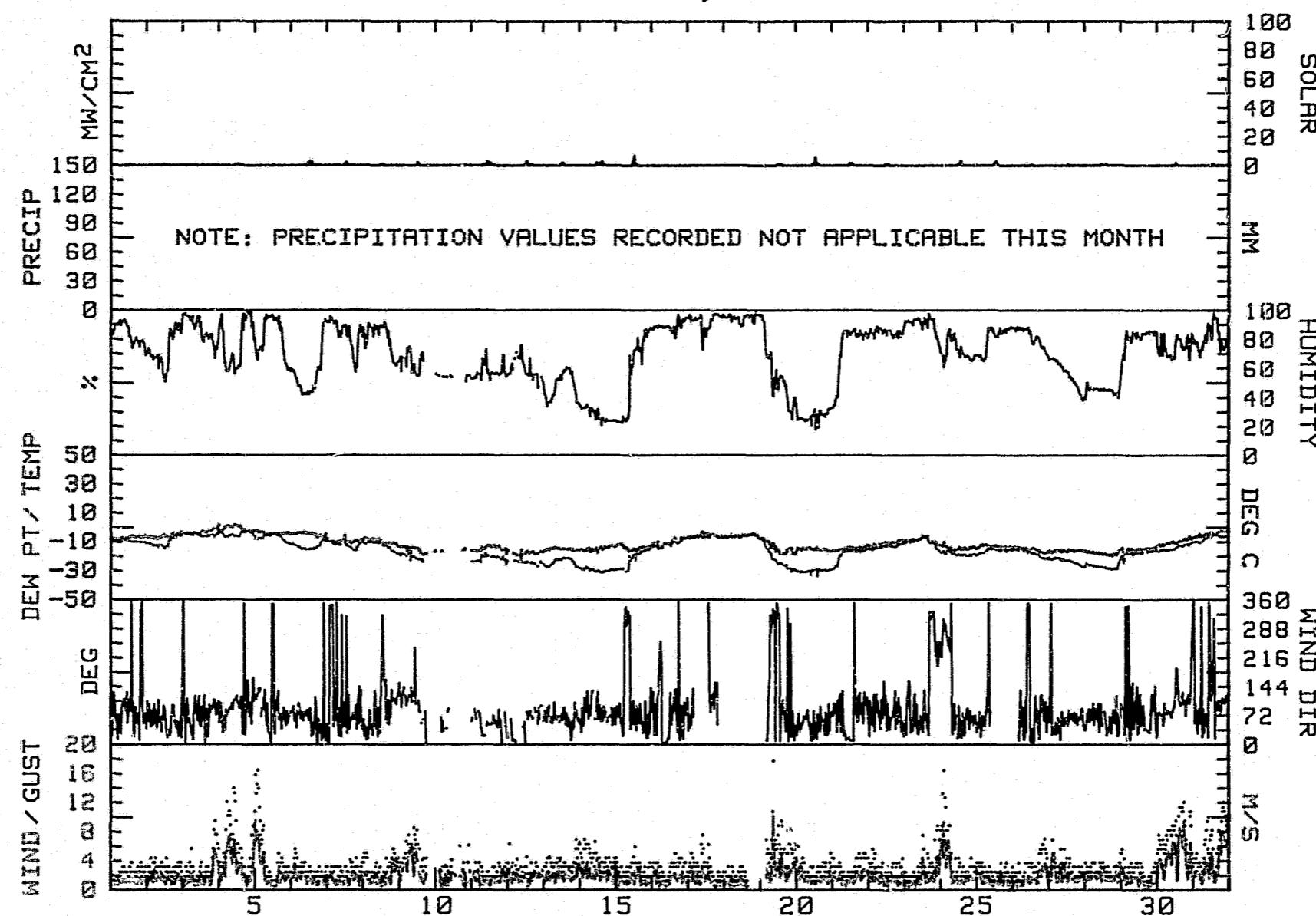
GUST VEL. AT MAX. GUST PLUS 1 INTERVAL 3.8

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 INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

R&M CONSULTANTS, INC.  
SUSITNA HYDROELECTRIC PROJECT  
GLACIER WEATHER STATION  
December, 1984



## R &amp; M CONSULTANTS, INC.

## SUSITNA HYDRO ELECTRIC PROJECT

WIND FREQUENCY SUMMARY FOR GLACIER WEATHER STATION  
DATA TAKEN DURING December, 1984

DIRECTION	VELOCITY (M/S)								TOTAL
	0.2	1.0	3.0	6.0	10.0	15.0	20.0	OR GREATER	
	TO	TO	TO	TO	TO	TO	TO		
1.0	3.0	6.0	10.0	15.0	20.0				
N	1.12	3.91	.24	0.00	0.00	0.00	0.00		5.27
NNF	1.76	9.98	.48	0.00	0.00	0.00	0.00		12.21
NE	2.00	15.24	.80	0.00	0.00	0.00	0.00		18.04
ENE	2.15	19.02	1.68	0.00	0.00	0.00	0.00		22.91
E	1.84	12.05	2.87	.64	0.00	0.00	0.00		17.40
ESE	1.68	5.11	2.47	1.76	0.00	0.00	0.00		11.01
SE	1.04	2.55	.48	.40	0.00	0.00	0.00		4.47
SSE	.80	.72	.08	0.00	0.00	0.00	0.00		1.60
S	0.00	.16	.08	0.00	0.00	0.00	0.00		.24
SSW	.08	.24	.16	0.00	0.00	0.00	0.00		.48
SW	.08	.32	.24	.08	0.00	0.00	0.00		.72
WSW	.08	.24	.16	.08	0.00	0.00	0.00		.56
W	0.00	.08	.32	.08	0.00	0.00	0.00		.48
NNW	.08	.48	.16	.08	0.00	0.00	0.00		.80
NW	.24	.68	.24	.16	0.00	0.00	0.00		1.52
NNW	.56	1.52	.08	0.00	.08	0.00	0.00		2.23
CALM									.08
TOTAL	13.49	72.55	10.53	3.27	.08	0.00	0.00		100.00

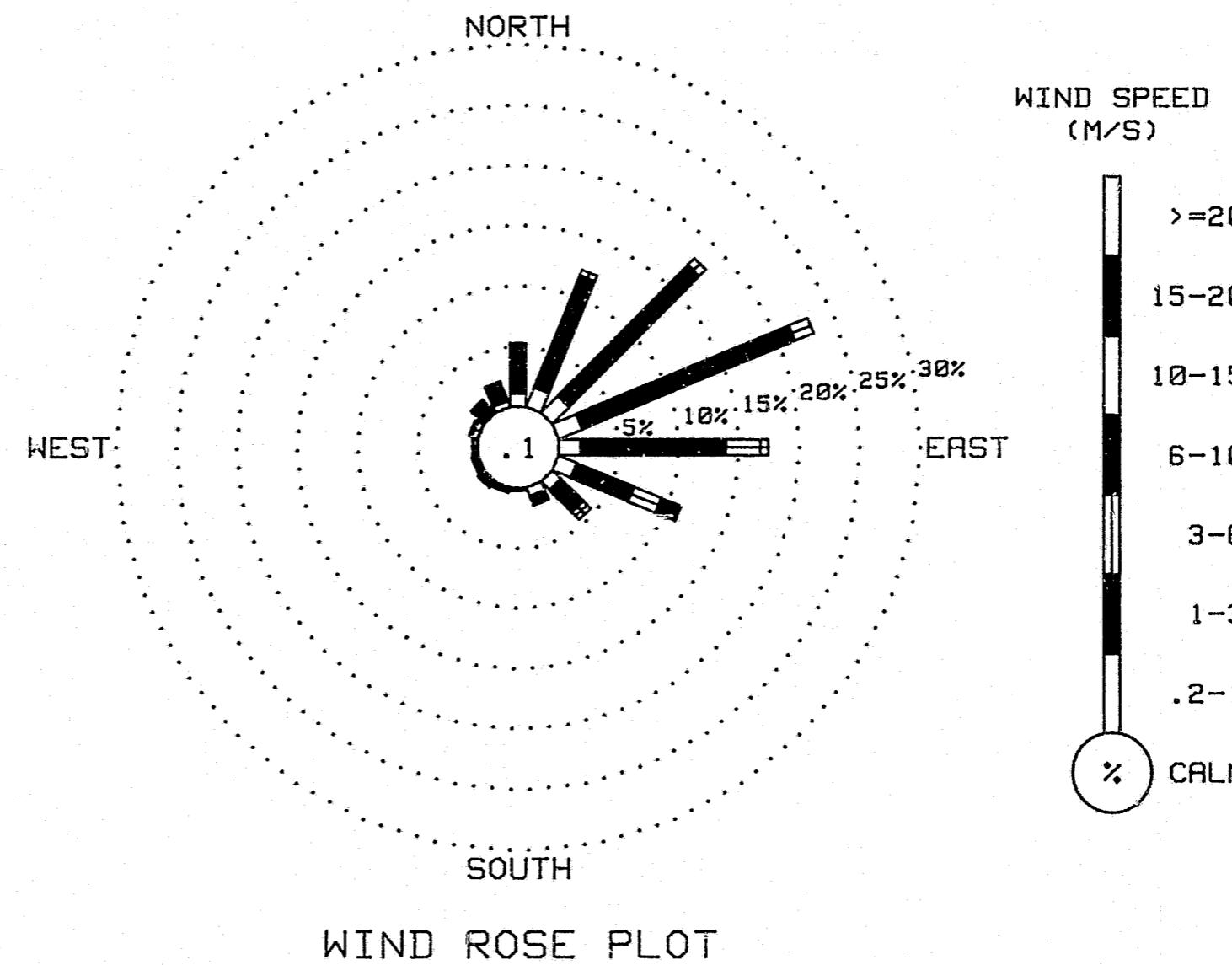
NOTE: ALL FREQUENCIES ARE EXPRESSED IN PERCENT

1253 VALID WIND OBSERVATIONS USED TO DEVELOP FREQUENCY SUMMARY

1486 WIND OBSERVATIONS WOULD HAVE BEEN CORRECT FOR 30 MINUTE DATA.

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

R&M CONSULTANTS, INC.  
SUSITNA HYDROELECTRIC PROJECT  
GLACIER WEATHER STATION  
December, 1984



## R &amp; M CONSULTANTS, INC.

## SUSITNA HYDROELECTRIC PROJECT

HOURLY SOLAR RADIATION SUMMARY FOR GLACIER WEATHER STATION  
 DATA TAKEN DURING December, 1984

SOLAR RADIATION VALUES MEASURED IN MILLIWATTS PER SQUARE CENTIMETER

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	Avg
1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	
2	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	
3	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	
4	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	
5	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	
6	0	0	0	0	0	0	0	0	0	0	1	2	3	3	1	0	0	0	0	0	0	0	0	0	
7	0	0	0	0	0	0	0	0	0	0	0	1	2	1	0	0	0	0	0	0	0	0	0	0	
8	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	
9	0	0	0	0	0	0	0	0	0	0	1	2	2	1	1	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	
11	0	0	0	0	0	0	0	0	0	0	1	2	2	1	0	0	0	0	0	0	0	0	0	0	
12	0	0	0	0	0	0	0	0	0	0	0	0	1	3	2	1	1	1	1	0	0	0	0	0	
13	0	0	0	0	0	0	0	0	0	0	0	0	1	2	1	0	0	0	0	0	0	0	0	0	
14	0	0	0	0	0	0	0	0	0	0	0	1	2	2	2	3	1	1	0	0	0	0	0	0	
15	0	0	0	0	0	0	0	0	0	0	0	1	4	5	1	1	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	***	
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	
18	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	1	1	1	1	0	0	0	0	0	0	0	0	
20	0	0	0	0	0	0	0	0	0	0	0	1	2	5	2	1	1	1	0	0	0	0	0	0	
21	0	0	0	0	0	0	0	0	0	0	0	0	2	2	2	1	0	0	0	0	0	0	0	0	
22	0	0	0	0	0	0	0	0	0	0	0	0	1	2	2	1	0	0	0	0	0	0	0	0	
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
24	0	0	0	0	0	0	0	0	0	0	0	0	1	2	3	3	1	0	0	0	0	0	0	0	
25	0	0	0	0	0	0	0	0	0	0	0	0	2	3	2	1	0	0	0	0	0	0	0	0	
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	
27	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	
28	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	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	
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	1	0	0	0	0	0	0	0	
31	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

## R &amp; M CONSULTANTS, INC.

## SUSITNA HYDROELECTRIC PROJECT

OBSERVATION SUMMARY FOR GLACIER WEATHER STATION  
DATA TAKEN DURING December, 1984

PARAMETER	NUMBER OF USABLE OBSERVATIONS	PERCENT OF TOTAL OBSERVATIONS
TEMPERATURE	1416	95
WIND SPEED	1409	95
WIND DIRECTION	1263	95
PEAK GUST	1385	93
RELATIVE HUMIDITY	1212	81
PRECIPITATION	0	0
SOLAR RADIATION	1481	100
DEW POINT	1189	80

8.5

THERE ARE 1488 POSSIBLE OBSERVATIONS THIS MONTH FOR EACH PARAMETER.  
THE DATA RECORDING INTERVAL IS 30 MINUTES.

THE FOLLOWING ADJUSTMENTS HAVE BEEN MADE TO THIS MONTH'S DATA:

1. RH +7 RH Points
2. Solar -1 mW/cm<sup>2</sup>

Additional comments on this month's data:

1. Intermittent data for all parameters lost due to weather wizard malfunction. Temperature, RH, and Solar data estimated where possible.
2. Intermittent wind speed and direction data lost due to frozen anemometer and wind vane.

## 6.0 REFERENCES

- Coffin, J. H. 1984. Solar and longwave radiation data for south-central Alaska. In: Proceedings, Alaska Section AWRA Annual Conference, Alyeska Resort, Alaska, November 1984. Published by Institute of Water Resources, University of Alaska, Fairbanks, Alaska, as Report IWR-106.
- R&M Consultants, Inc. 1984. Processed climatic data, October 1982 - September 1983, Volume I, Susitna Glacier Station (No. 0610). Prepared under contract to Harza-Ebasco Susitna Joint Venture for Alaska Power Authority. Document No. 1088, June.

## APPENDIX

TABLE A.1 CONVERSION FACTORS

Multiply	by	To Obtain
millimeter (mm)	0.03937	inch (in)
centimeter (cm)	0.3937	inch (in)
square centimeter ( $\text{cm}^2$ )	0.1550	square inch ( $\text{in}^2$ )
meter (m)	3.281	foot (ft)
square meter ( $\text{m}^2$ )	10.76	square foot ( $\text{ft}^2$ )
meter per second (m/s)	3.821	foot per second (ft/s)
meter per second (m/s)	2.237	mile per hour (mph)
meter per second (m/s)	1.944	knot (kt)
degree Celsius ( $^{\circ}\text{C}$ )	$^{\circ}\text{F} = 9/5(\text{C}) + 32$	degree Fahrenheit ( $^{\circ}\text{F}$ )
watt-hour (WH)	3.413	British Thermal Unit (BTU)
watt-hour (WH)	3600	joule (J)
milliwatt (mw)	0.003413	BTU per hour (BTU/hr)
milliwatt per square centimeter ( $\text{mw/cm}^2$ )	0.1040	BTU per hour per square foot (BTU/hr-ft $^2$ )
watt-hour per square meter (WH/m $^2$ )	0.3171	BTU per square foot (BTU/ft $^2$ )
watt-hour per square meter (WH/m $^2$ )	0.0860	langley (ly)