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APPENDIX 2F

METEOROLOGICAL STATION

The Rancho Seco meteorological program was briefly discussed in paragraph 2.3.4. To implement this program efficiently and meaningfully, a permanent meteorological station will be constructed at the site.

This weather monitoring and recording system will be a permanent installation consisting of a 200-foot meteorological tower instrumented to provide continuous long term measurements of the wind, standard deviation, and temperature. Specifically, the system will sample compute and record the wind speed, wind azimuth angle, wind elevation angle, the standard deviation of the wind azimuth and elevation angles, and the atmospheric dry-bulb and wet-bulb temperatures. The sensing elements will be located at 3 levels as follows:

200-Foot Level (Top of Tower)

Wind speed (S)
Horizontal wind direction (D_H)
Temperature (T_{200})

50-Foot Level

Wind speed (S)
Horizontal wind direction (D_H)
Vertical wind direction (D_V)
Temperature (T_{50})

6-Foot Level

Temperature (T_6)
Temperature (T_{wb}^6)

The instrument operating range, accuracy, resolution and display record will be as follows:

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<u>Parameter</u>	<u>Range</u>	<u>Accuracy</u>	<u>Resolution</u>	<u>Display Record</u>
S	0-75 mph	± 1 mph	1 MPH	instantaneous
D _H	0-359° (540° Format)	$\pm 3.6^\circ$	1°	instantaneous
D _V	$\pm 60^\circ$	$\pm 2^\circ$	1°	instantaneous
H	0-45°	$\pm 3\%$ F.S.	0.45°	running average
V	0-20°	$\pm 3\%$ F.S.	0.15°	running average
T ₂₀₀ -T ₆	-4° to + 20°F	0.5°F	0.1°F	instantaneous
T ₅₀ -T ₆	-3° to + 15°F	0.5°F	0.1°F	instantaneous
T ₆	25°F to 115°F	$\pm 1^\circ$ F	0.1°F	instantaneous
T _{wb}	10°F to 80°F	$\pm 1^\circ$ F	0.1°F	instantaneous

To account properly for the meandering effect of the wind, the standard deviation will be computed over a period of one hour. To achieve this end successive 3-minute non-overlapping data gathering system will be provided. To simplify data reduction, a digital on-line data acquisition system will be installed. The acquired data will be averaged by the standard deviation (σ) meters and continuously recorded. Data reduction will proceed on at monthly intervals. The recorders will be temporarily located in a weather-proof shelter near the base of the tower until indoor facilities become available. Eventually, all recorders and electronic devices will be moved to the station control room.

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