

SANDIA REPORT

SAND77-1919 UC-261
Unlimited Release
Printed December 1977

**VERTICAL AXIS WIND TURBINE TIE-DOWN
DESIGN WITH AN EXAMPLE**

Robert C. Reuter, Jr.

Sandia National Laboratories; Albuquerque, NM 87185

ABSTRACT

Design of cable tie-down systems for vertical axis wind turbines is discussed and guidelines are furnished. Topics such as the number, size and material of the cables, cable elevation angle, tensioning, and thermoplastic effects are discussed in detail. The tie-down system of the existing Sandia 17 meter VAWT is used throughout as a numerical example.

Prepared by
Sandia National Laboratories
Albuquerque, New Mexico 87185 and Livermore, California 94550
for the United States Department of Energy
Under Contract DE-AC04-94AL85000