

PROJECT DESCRIPTION

PROJECT: Lower Snake River Wind Farm

LOCATION: Near Pomeroy, Washington

DESIGN TEAM: Geotechnical Engineer: The Riley Group, Inc. Kennewick, WA

CONTRACTOR: Renewable Energy Systems (RES) Americas Construction Broomfield, CO

OWNER:

Puget Sound Energy, Inc.





DESCRIPTION:

- 2.3 MW Siemens Wind Turbine Generators
- 54' diameter, octagonal foundations
- Design Loads : 652 kips axial load 211 kips unfactored base shear

2360 kip-ft unfactored torque 49,638 ft-kip unfactored moment

Engineered aggregate piers (Geopiers[®]) were installed for 9 of the turbine foundations for Phase I. Piers extended to depths of 22'-24' below grade, per the GTFC-W design.

The piers mitigated collapsible potential in wind deposited silt (loess) and provided the foundation support needed for these major wind turbines.

One pier was subjected to a full-scale load test and revealed a stiffness modulus substantially exceeding the value used for design. During construction of each pier, rammer deflections were monitored by Dynamic Force Solutions, Inc. for each stroke of the rammer, and revealed that uniform, very stiff subgrade support was achieved throughout each foundation area.

REFERENCES:

Mr. Chris Fox, Project Manager RES Americas (512-289-0254)

Mr. Scott Tomren, QA Inspector The Riley Group, Inc. (509-586-4840) Mr. Matt Chase, Civil Design Engineer, P.E. RES Americas (303-439-4234)

Mr. John Martin Dynamic Force Solutions, Inc. (503-730-7653)