

AFS 2000 Ballast Foundation and 75'/22m Tilt-Up Pole Necker Island, British Virgin Islands



OVERVIEW

ARE Telecom was contracted by Northern Power Systems to design and install our AFS 2000 ballasted foundation system with a 22m tilt-up pole for their 100kW wind turbine. 3 wind turbines were installed to provide energy to the remote private Necker Island in the BVI. In the event of hurricanes, the customer needed the turbines to be lowered before the storm arrived and raised again once it has passed so they could resume producing power.

SOLUTION

ARE designed and manufactured customized tilt-up poles to meet the wind turbines design requirements, survive high and constant winds and be able to be raised and lowered with ARE's custom hydraulic system. The system was designed to allow for local equipment to be used in getting materials to site and erect the foundations and poles.

CHALLENGES

- Customized 22m tilt-up pole that can be lowered with a hydraulic system in case of hurricane
- Above ground ballasted foundation to avoid use of concrete
- Significant logistics planning due to isolated island in the BVI
- Installation sites only accessible by small dirt roads

Project benchmarks:

- Sectional poles and foundations shipped by container to Necker Island, offloaded and brought to site with limited equipment
- Crew flexibility available to install in remote location
- Pole raised with a hydraulic system (no crane necessary)
- Foundation installed in a few days (local dirt and rock used for ballast)
- Install hydraulic system

PROJECT RESOURCE

5 Man Crew, 10 Days, 1 Track-Hoe with Bucket



Off-loading container at site



Transporting pole



Leveled base with electrical to center



Track-hoe only equipment used



Kingpost and trays



Fully Assembled Foundation



Installed Tilt-up Pole



Turbine installed on pole



AFS 2000 foundation & 22m tilt-up pole installed