

# **ARRA-funded Cloud Radar Development for the Department of Energy's ARM Climate Research Facility**

By James B. Mead, President, ProSensing, Inc.

Through the 2009 American Recovery and Reinvestment Act, the DOE's Pacific Northwest National Laboratory recently funded ProSensing Inc. of Amherst, Mass. to build six dual frequency cloud radar systems. These radars will be used by the Atmospheric Radiation Measurement (ARM) Climate Research Facility, a DOE scientific user facility, for fundamental research on the effects of clouds and precipitation on the climate. Four cloud radar systems will be permanently installed at ARM sites in Oklahoma, Alaska, Australia and Papua New Guinea, while two portable systems will be deployed with ARM's mobile facilities at sites around the world. An additional ARRA-funded contract was also awarded to ProSensing to upgrade five existing cloud radars currently operating at the ARM sites.

Like many companies, ProSensing was expecting to experience a considerable reduction in orders in 2009, with the necessity to reduce our workforce. With the award of these ARRA-funded projects, ProSensing will instead be increasing its workforce. ProSensing has already added a mechanical engineer, and has an offer pending for a new software engineer. We are also planning to hire an additional microwave engineer in early 2010. The necessity to continue servicing these units beyond 2010 will require the addition of at least one permanent field engineer to perform scheduled and unscheduled maintenance on these radars.

Approximately 40 percent of all expenses on this contract will be required to purchase components and subsystems from US manufacturers, and to hire subcontractors to install the systems at remote sites. For example, Communications Power Industries (CPI) of Beverly, MA will be building 27 high voltage power supply-modulator units for the radar transmitters. According to CPI, jobs for two technicians and one engineer were created and two assembler jobs were saved because of this large order. ProSensing is also planning to engage a local defense contractor, Millitech Corporation, to assemble 12 radar units for the scanning cloud radar systems. This work will keep a number of their technician employed for several months in mid-2010.

In addition to the direct work involved with the ARRA-funded projects, ProSensing won a \$1M contract from NASA Goddard Space Flight Center to build a scanning cloud radar based on the DOE-funded design. We are also competing for similar cloud radar contracts for customers in India, China and Korea. By developing these complex radar designs with ARRA-funding, we expect to build and maintain a competitive advantage when bidding for cloud radar contracts internationally.