SC University To Develop Bridge Sensors

KATRINA A. GOGGINS, Associated Press Writer

COLUMBIA, S.C. (AP) — With the average U.S. bridge approaching time for replacement, researchers at the University of South Carolina said Thursday that they'll work with a team of experts to develop a quicker method of detecting cracks and early signs of wear on the structures.

USC was awarded $4 million of a $14 million grant from the National Institute of Standards and Technology to develop sensors that will be placed on bridges and give continuous data on their structural health. Other grant recipients include the Physical Acoustics Corp. of Princeton, N.J., the University of Miami and Virginia Tech.

"This underscores the need for a system that will give us ongoing, reliable information about the structural health of existing bridges so that repairs can be prioritized and accidents averted," Paul Ziehl, an associate professor of engineering leading the research at USC, said in a statement.

Sensors are already used to detect the structural safety of jets and check railroad tank cars carrying chemicals. USC researchers will combine data from a host of already existing sensors — like those that measure strain and moisture — and new methods that check and access structural problems.

Once developed, the sensors can remotely transmit data that will be analyzed using new computer software and models. Ziehl said he hopes the technology will allow officials to set priorities, make informed decisions and determine where remote monitoring will be most cost effective.

The South Carolina Department of Transportation is collaborating with USC and has already contributed several bridge girders for the study.

One in four of the nation's bridges needs upgrading, according to a 2008 report by the American Association of State Highway and Transportation Officials. The average U.S. bridge is 43 years old and nearing time for replacement, the report said.

An interstate bridge collapsed in Minnesota Aug. 1, 2007, killing 13 people.