# New software detects piping flaws

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New software developed by the U.S. Department of Energy's Savannah River National Laboratory (SRNL) and Northrop Grumman Shipbuilding (NGSB) may lead to a less expensive and less time consuming method to detect corrosion or other defects in a ship's pipes.

The copyrighted software, which is used to analyze digitized x-ray images to determine loss of wall thickness in pipes, was developed as the result of a six-month cooperative research and development agreement between SRNL and NGSB. SRNL has granted NGSB a license to commercialize and continue maturing the software for shipboard pipe analysis.

Ships contain vast quantities of piping that is subject to corrosion and other types of failure issues. The current method of inspecting for these issues is to strip insulation from portions of piping, then test the piping to see if there is corrosion or other issues. Because the new approach uses digital x-rays, it does not require the removal of the insulation. When the new software is matured, it will save significant time, resulting in more piping being evaluated in a shorter period of time.

The new software, which is based on existing Digital X-Ray Pipe Inspector Software, combines a tool for examining a region of interest on the outside wall of a pipe with a tool for examining a region of the interior of the pipe. The software compares the resulting digital x-rays of the interior and its corresponding exterior region to quantitatively assess defects between the pipe walls.

Development of the new software builds on SRNL's expertise in digital imaging and other radiography techniques, which has been applied to develop methods for examining components used in the processing and disposal of radioactive materials. In recent years, this expertise has been extended, with applications for medical research and other fields.

Provided by Savannah River National Laboratory