

# Aging pipes in U.S. power plant create

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The Associated Press

## How a boiling-water reactor works

RICHMOND, Va. - The miles of pipes threading through aging U.S. - power plants have become a **safety** worry for utility officials and regulators aware that 10 people have been killed and at least 18 injured by explosive pipe breaks at plants nationwide since 1980.

The causes of hot-water or steam pipe failures in nuclear and non-nuclear plants have varied, leaving officials unable to pinpoint a common problem.

"In general, it's quite safe to predict that there will be more problems as these plants age," said Robert Pollard, nuclear safety engineer for the Union of Concerned Scientists.

The latest example of the problem came Dec. 9 when a hot-water pipe ruptured at Virginia Power's Surry nuclear plant, killing four people and severely injuring two more.

Six deaths, also blamed on pipe breaks, occurred in June 1985 at the Mojave Generating Station, a fossil fuel plant in Nevada.

The emergence of pipe failure as a potential problem was the topic of a recent meeting of the Nuclear Regulatory Commission.

"The thing that's eating me is this burning question: Why haven't we seen this before?" Richard E. Johnson, an NRC metallurgical engineer, said of the Surry accident.

At Surry, a pipe carrying hot water burst near a 90-degree elbow on the non-nuclear side of the plant. At Mojave, a 30-inch seam-welded steam pipe ruptured.

Hot-water or steam pipes have burst in the last five years at least five other nuclear plants in New York, South Carolina, Georgia, Connecticut and Oregon.

"Pipe breaks in all types of power plants seem to be increasing," said Dennis Chatman, spokesman for the International Brotherhood of Electrical Workers, which he said represents workers at about 85 percent of

the nation's power plants.

Chatman said he believed the problem was getting worse because utilities are using seam-welded pipe, such as the one that broke at Mojave, instead of the more expensive seam-less cast pipe.

Rolf Manfred, manager of the Electric Power Research Institute's Availability and Life Extension Program, said thousands of miles of seam-welded pipe carry highly pressurized steam and hot water through the nation's power plants. He said the Mojave incident, among others, prompted "intensified efforts to de-

tect cracks and give utilities some guidelines on what to do."

The result was a half-inch-thick report, issued by the Institute in November, telling utilities how to inspect piping systems. "Whether they take our advice is their business," Manfred said.

Inspection of pipes that do not carry radioactive material is left mainly to the discretion of utilities.

Joe Gilliland, spokesman at the NRC's Atlanta office, said the NRC did not regulate the non-nuclear sides of plants because all the public health hazards were located in the

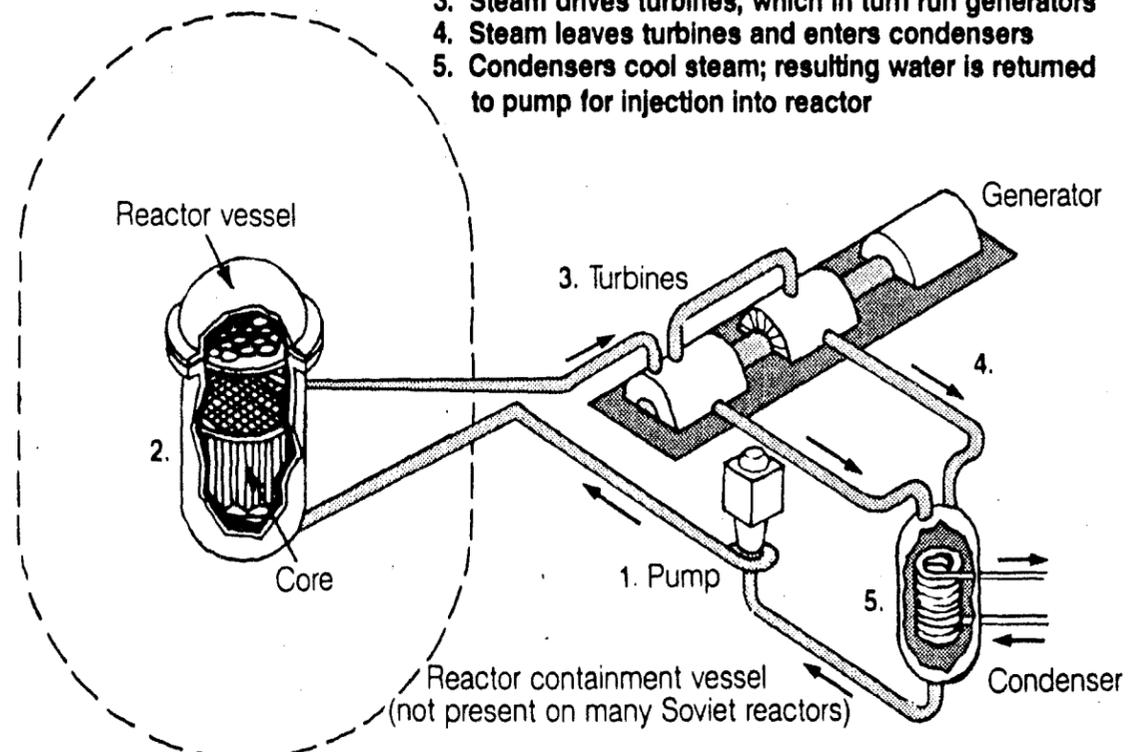
nuclear sections.

"We're taking a look at what happened at Surry, but only from the standpoint that we want to make sure a similar accident never happens on the nuclear side," said Larry Shao, deputy director of the NRC's Division of Engineering Technology in Bethesda, Md. "We wouldn't force a utility to take corrective measures on the non-nuclear side."

Virginia Power officials have emphasized that the Surry accident did not release any radiation.

"But people shouldn't take comfort in the statement that it's the non-

1. Pump injects water through reactor core
2. Heat given off by reactor turns water to steam
3. Steam drives turbines, which in turn run generators
4. Steam leaves turbines and enters condensers
5. Condensers cool steam; resulting water is returned to pump for injection into reactor



Source: Congressional Office of Technology Assessment