

9. - BACKFLOW AT A FILM LABORATORY

DATE OF BACKFLOW INCIDENT: October 1978

LOCATION OF BACKFLOW INCIDENT: U.S. Navy ship at sea

SOURCE(S) OF INFORMATION:

- Pacific Northwest Section of the American Water Works Association, Summary of Backflow Incidents, Fourth Edition, 1995
- Watts Industries, Inc.; Watts Regulator News/Stop Backflow

CASE HISTORY

Between July 21 and 31, 1977, 544 crew members aboard a large U.S. Navy ship developed gastrointestinal disease. The illness was characterized by the acute onset of nausea, vomiting, abdominal cramps, and diarrhea lasting for 12 to 36 hours.

On the morning of July 28, 301 crew members from four units with the highest rate of illness were interviewed. Of these 301 crew members, 55 had been sick within the past seven days. Interview responses showed that sick crew members were much more likely to have drunk water while the ship was at sea.

On July 19, two days before the onset of the outbreak, a chilled drinking water system in the forward part of the ship had been used for the first time in more than a year. Because the time relationship seemed to implicate this water system, it was shut down on July 28. Subsequently, investigators learned that photo developer solution had backflowed into this water system.

The chilled water system in the forward part of the ship supplied water to a 40-gallon tank via a rubber hose. Photo developer solution was mixed in this tank and then used in automatic photo developing machines on the ship. The rubber hose was submerged in the tank, creating an indirect cross-connection and allowing the photo developer solution to be backsiphoned into the chilled water system.