

Overview of Accident in Secondary Piping at Mihama Nuclear Power Plant, Unit 3

Overview of the accident

On August 9th, 2004, an accident occurred in Unit 3 of the Mihama Nuclear Power Plant owned by Kansai Electric Power Co., in which pipes in the secondary system ruptured.

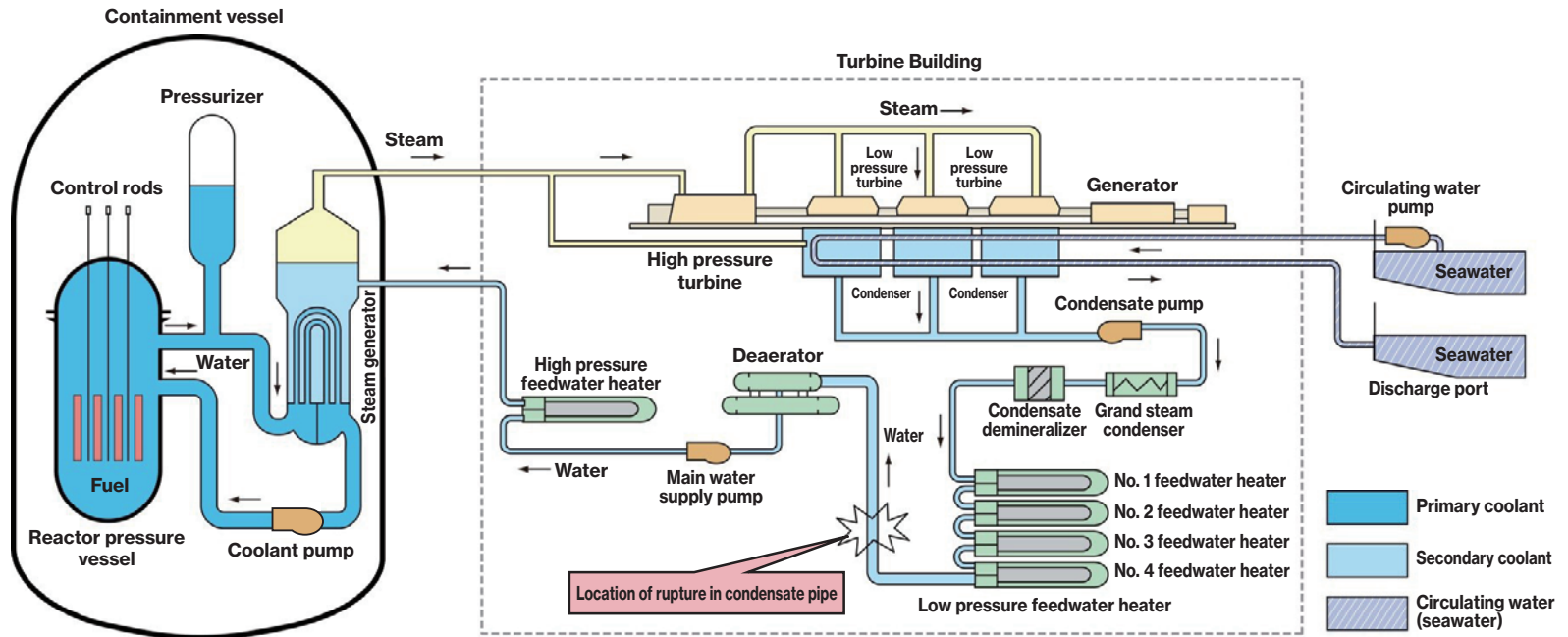
At the time of the accident, contracted workers were inside the building that housed the turbines of the Mihama 3 reactor preparing for the 21st periodic inspection that was scheduled to start from the 14th of August.

With the workers inside, a condensate pipe ruptured near the ceiling on the 2nd floor inside the building housing the turbine, causing hot water at 140°C and 9 atmospheres of pressure to blast out as steam.

Operators who were in the building for inspections immediately found victims who had passed out in front of the elevator on the 2nd floor of the turbine building.

Although the 11 victims of the contracted company were transported to a hospital, 5 died and the other 6 were seriously injured.

However, the accident in the secondary and main cooling systems did not affect the public or nearby workers with radioactive materials.



Cause of the accident

A large rupture was found downstream of an orifice (flowmeter) for measuring condensate pipe water flow.

The investigation found that turbulence was likely to occur at points downstream of the orifice and an internal inspection of the part that ruptured found that the so-called erosion-corrosion process had gradually reduced the thickness of the pipe, thus weakening it to the extent that it ruptured due to the load during operation at the time.

Management guidelines were established in 1990 for the wear of secondary piping in PWR, and from that time parts of pipes that were anticipated to be corroded had been measured according to plan. However, the part of the pipe that ruptured (A line) was from the very beginning supposed to be measured, but it had been missed and the thickness of the pipe had never been measured at the time of the accident.

