

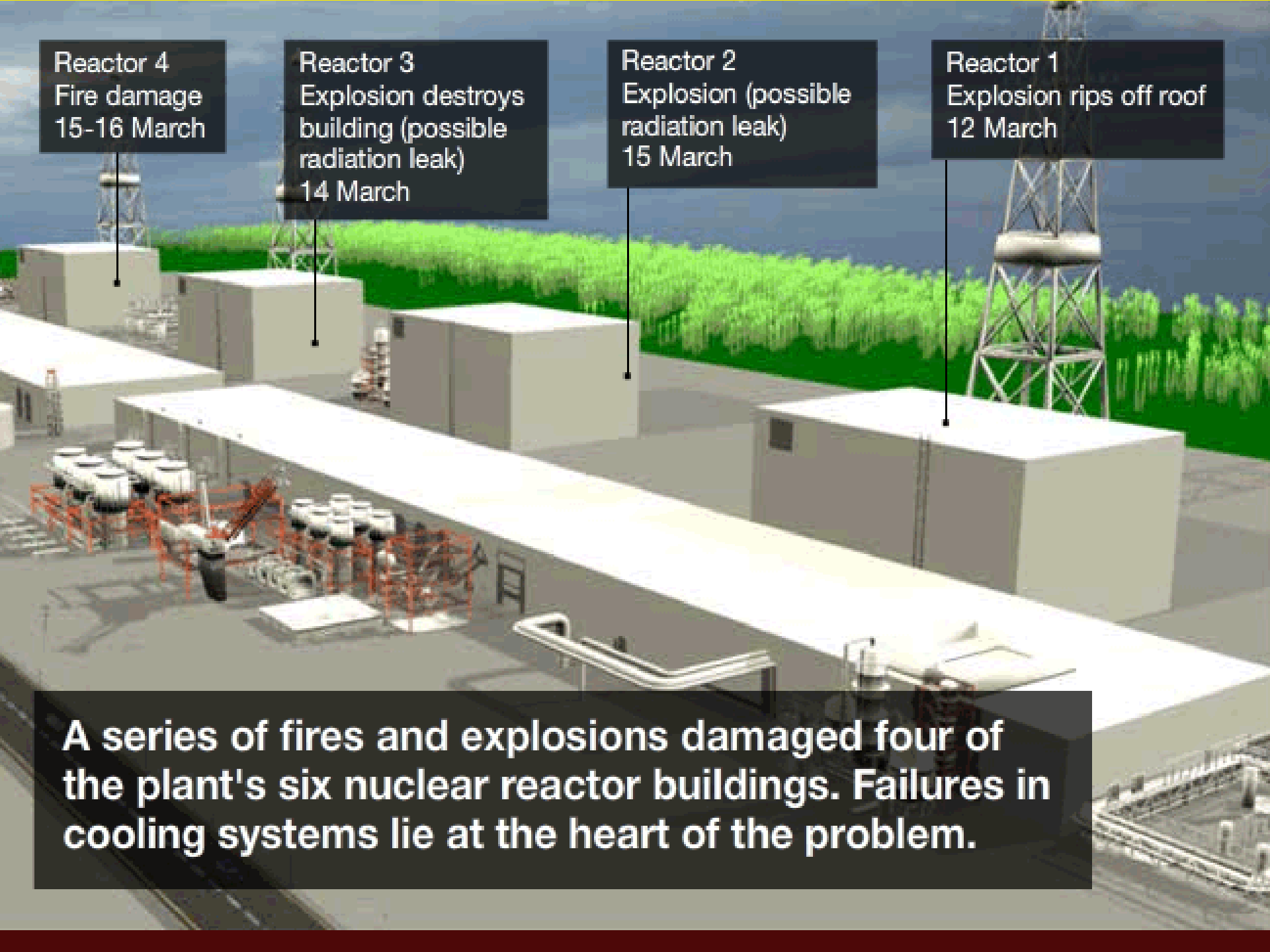
ΚΑΤΑΣΤΡΟΦΗ ΤΗΣ ΦΟΥΚΟΥΣΙΜΑ:

Οι παρακάτω πληροφορίες είναι δοσμένες
από την υπεύθυνη καθηγήτρια κα Παυλίδου
Η επεξεργασία και μετάφραση έγινε από τους
συμμετέχοντες μαθητές: Κρασιά Αγγελική,
Μάγδα Κολυβά, Κόρμπο Βασίλη, Κορκώνη
Ανδρέα



Fukushima: Dealing with disaster

One of the most serious civil nuclear accidents in history has taken place at Japan's Fukushima Daiichi nuclear plant. Reactor buildings have been rocked by explosions, caused after damage was sustained from a massive earthquake and tsunami on 11 March. Follow this step-by-step guide to find out what happened.

A 3D digital reconstruction of a nuclear power plant facility. The image shows several large, rectangular reactor buildings arranged in a row. In the foreground, there are various pieces of equipment, including what appears to be a large cooling system with multiple pumps and pipes. In the background, there are tall, lattice-structured towers. The sky is a clear blue. Four black callout boxes with white text are positioned above the reactor buildings, each with a thin black line pointing to a specific building. The overall scene is presented in a clean, technical style.

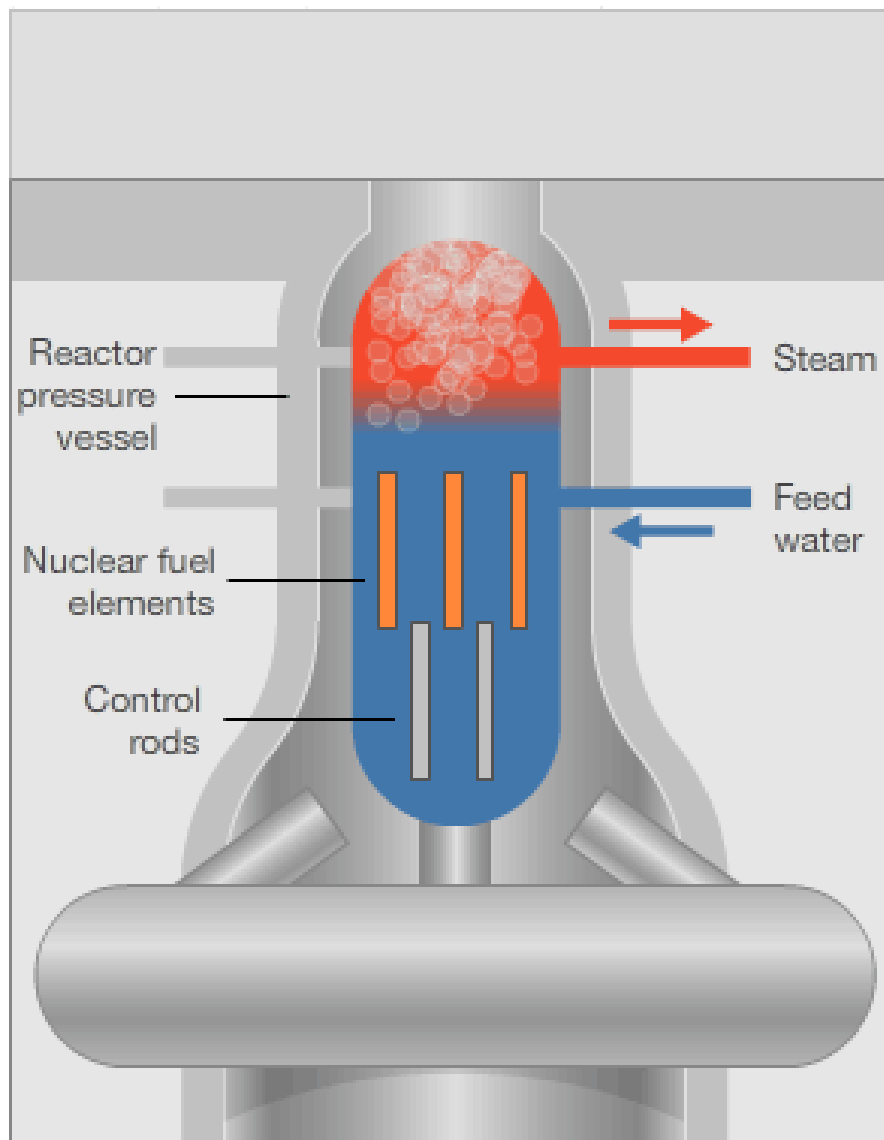
Reactor 4
Fire damage
15-16 March

Reactor 3
Explosion destroys
building (possible
radiation leak)
14 March

Reactor 2
Explosion (possible
radiation leak)
15 March

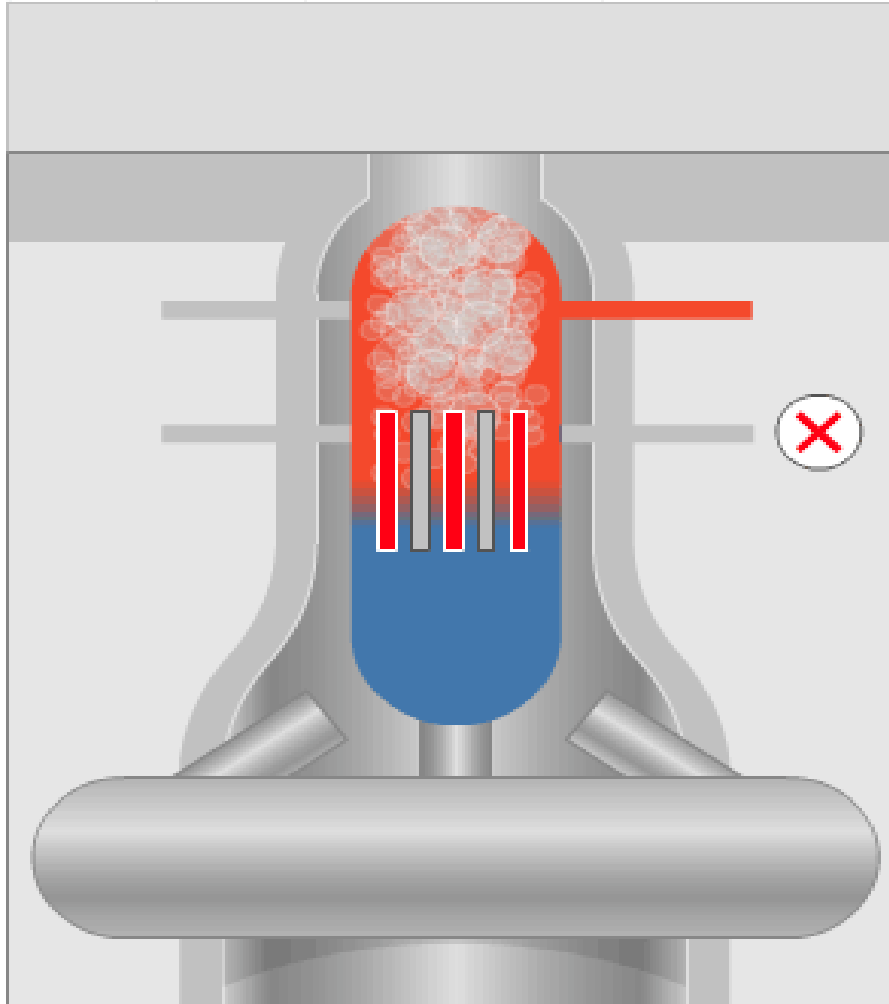
Reactor 1
Explosion rips off roof
12 March

A series of fires and explosions damaged four of the plant's six nuclear reactor buildings. Failures in cooling systems lie at the heart of the problem.



Each nuclear reactor heats water into steam; the steam turns turbines to generate electricity.

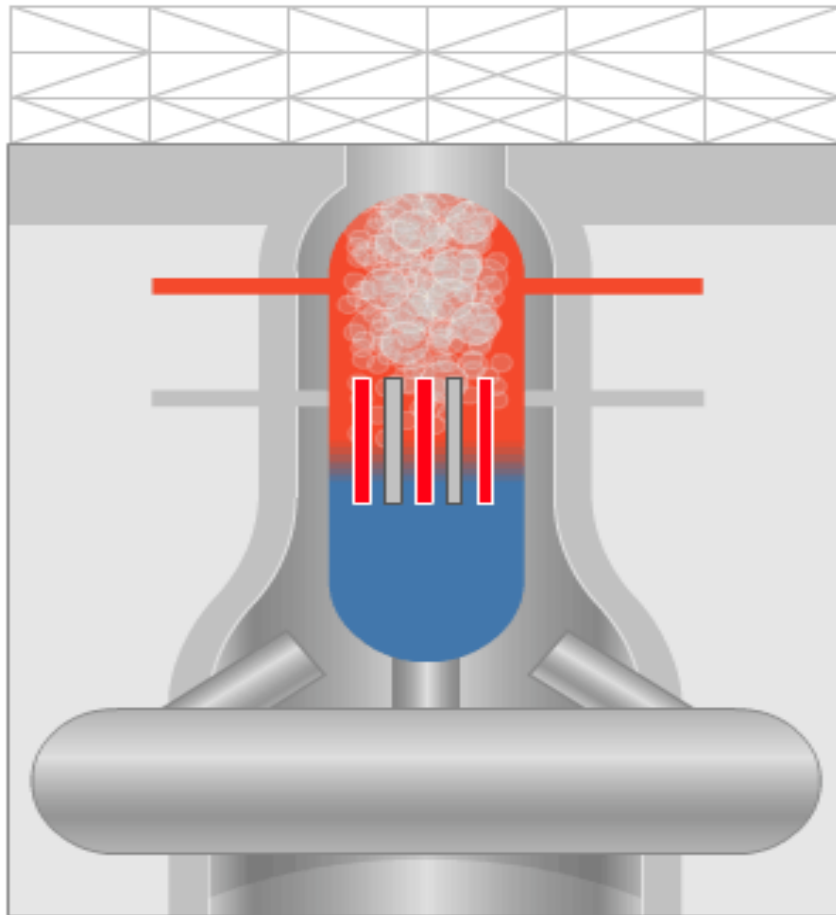
But after the earthquake, control rods automatically activated to stop nuclear reactions and to shut down the reactors.



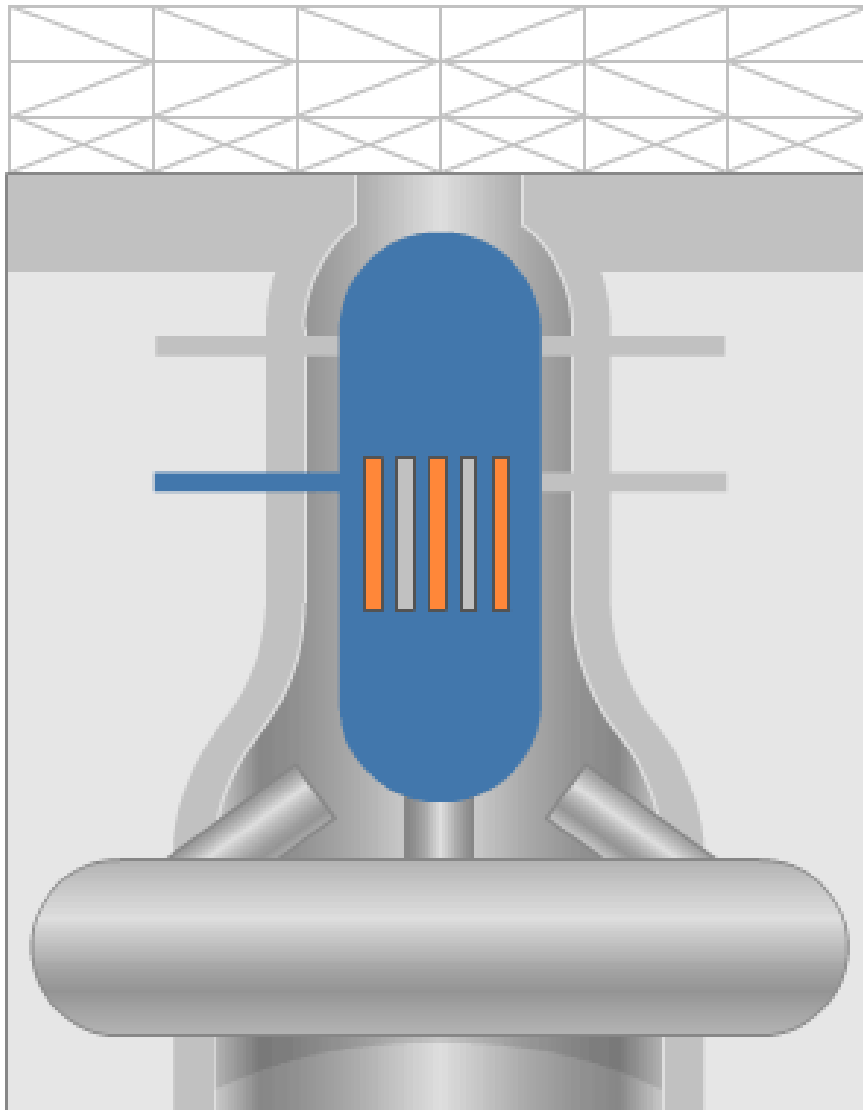
However, cooling systems failed because power supplies had been damaged by the tsunami.

The lack of power meant water stopped circulating and began to boil, creating steam.

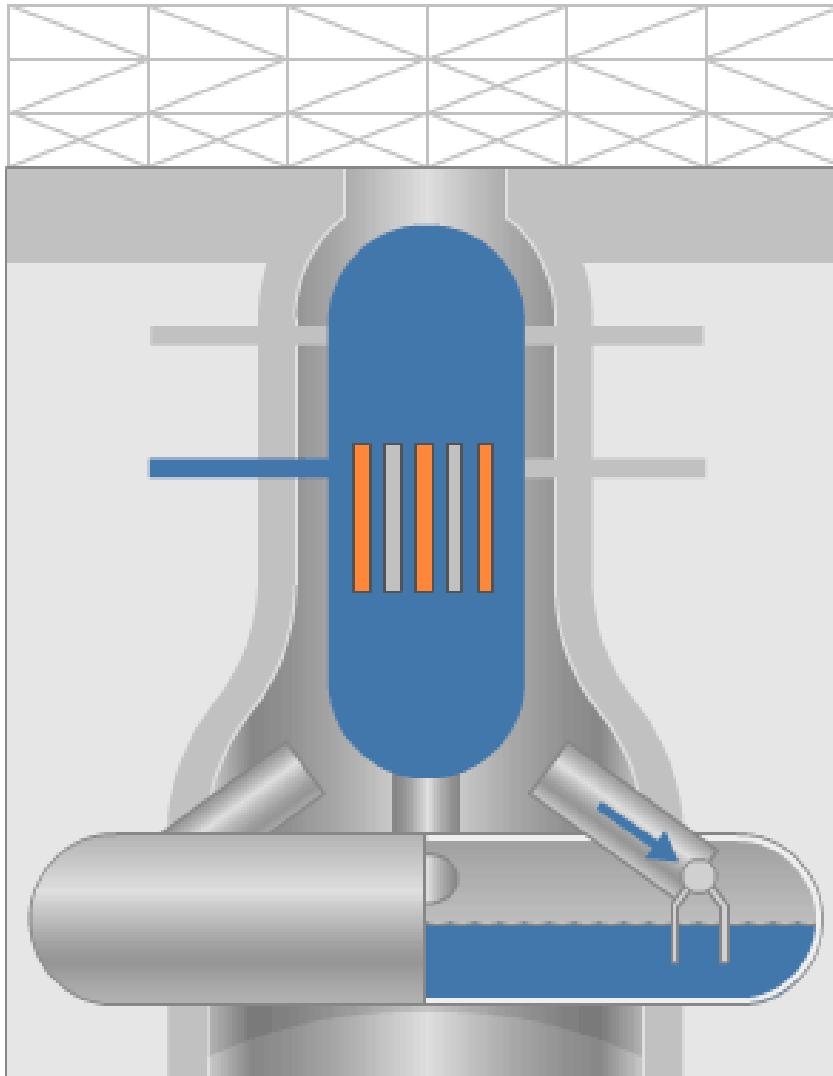
The fuel rods got hotter and reacted with the steam, creating hydrogen gas.



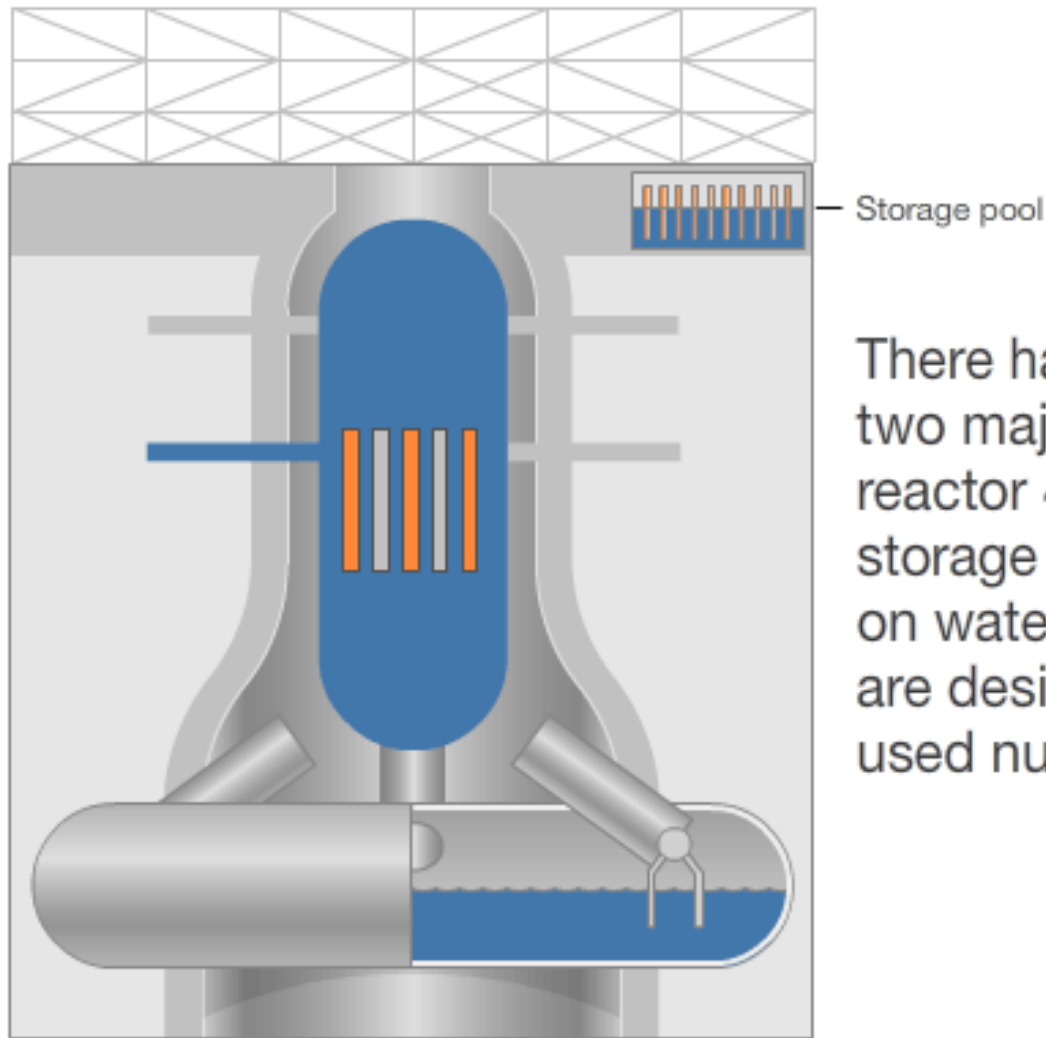
When engineers vented this gas and steam outside the pressure vessel, the hydrogen gas exploded, damaging the reactor buildings.



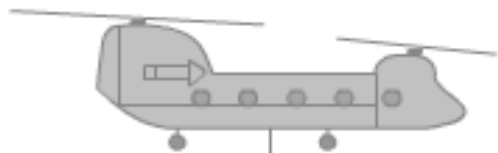
Officials took the unusual step of attempting to swamp the reactors with sea water as an emergency coolant. They also used boric acid, which hampers nuclear reactions.



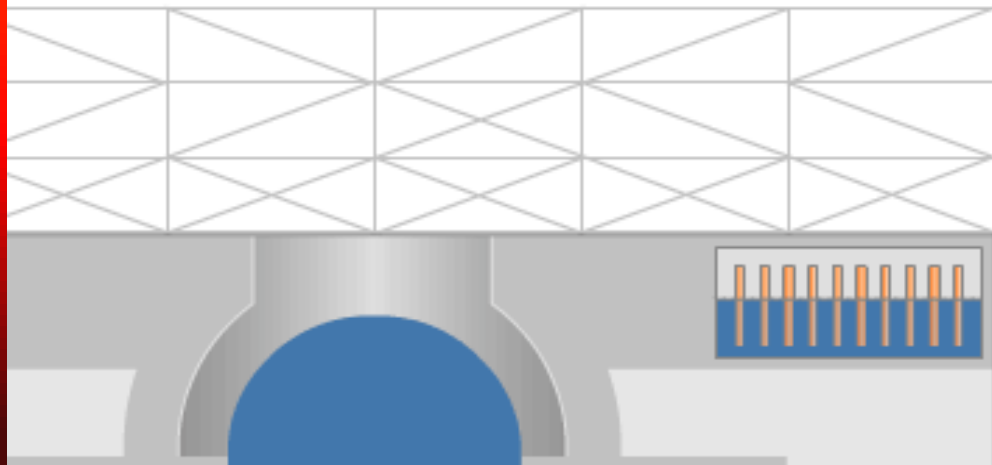
There are fears that the explosion at reactor 2 damaged its suppression chamber - a water-filled structure, which helps condense steam. If it has been breached, it may allow steam containing radioactive substances to escape continuously.

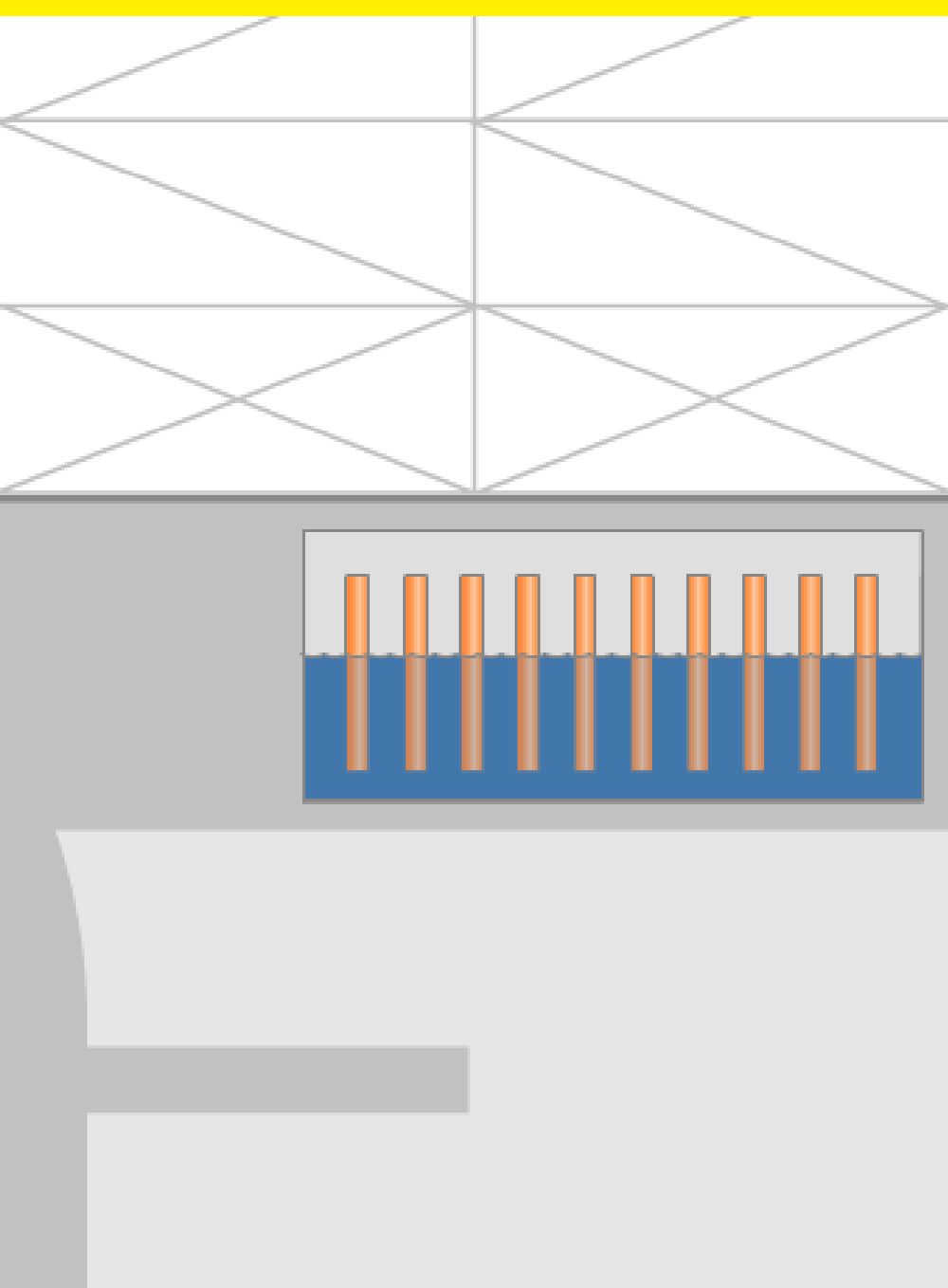


There have also been two major fires at reactor 4, where storage pools ran low on water. These ponds are designed to cool used nuclear fuel.



On 17 March, helicopters dropped water on reactor buildings 3 and 4, with the aim of replenishing water in storage ponds containing spent fuel rods.





To bring the situation under control, power needs to be restored to the plant's damaged cooling system. Then, pumps can be used to bring the nuclear fuel back to safer temperatures.