

① Earthquake-countermeasures

Work will be conducted to reinforce the supports for pipes and electrical circuits, reinforce the ground around the Unit 4 water intake pond, reinforce the ground around the tsunami protection wall, and reinforce slopes within the station site. (For details, see Overview of Work related to Earthquake Countermeasures for Hamaoka Nuclear Power Station Units 3 and 4 (released on September 25, 2013).)

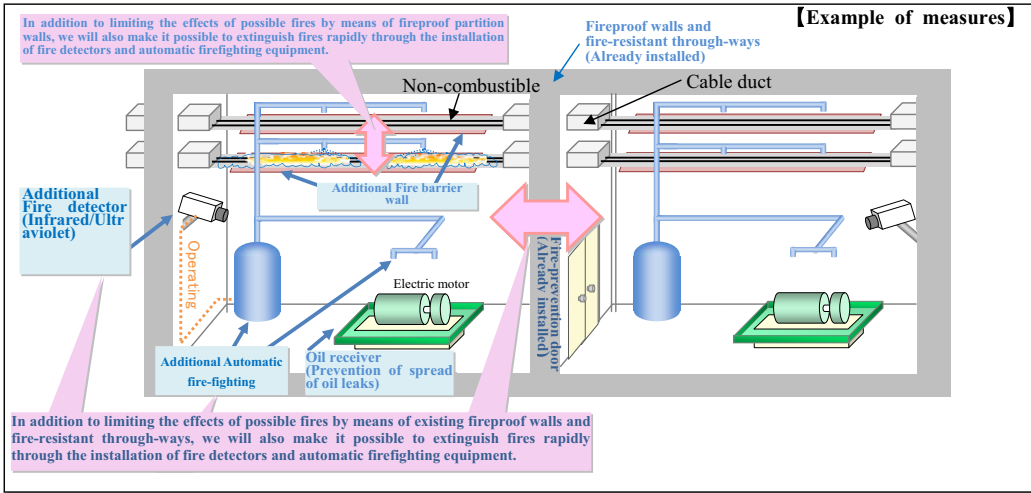
② Tornado-resistance measures

Outdoor seawater pumps and the pipes close to the pumps are designed with consideration of historically occurring strong winds (typhoons). In order to ensure that functions essential to safety are maintained even in the event that a tornado strikes, we will take further measures to protect the facilities against impact by objects that might be caught up in a tornado.

③ Fire-resistance measures

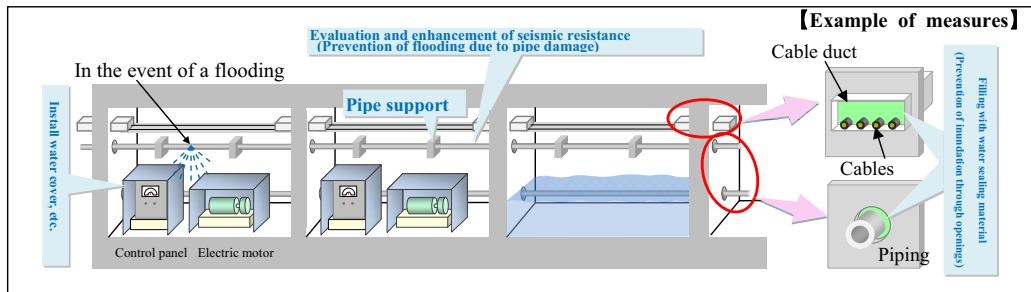
In order to ensure the maintenance of functions essential to safety, station facilities are designed to be protected against fire, for example through the use of fire barrier walls, fire-prevention doors, fire-prevention dampers and other measures to partition areas, in addition to the use of non-combustible cables. These measures ensure the safety of the reactor facilities.

As further fire prevention and response measures, we will be installing additional fire detectors and firefighting equipment, implementing measures to prevent the spread of oil leaks from equipment containing oil, and installing additional fire-proof walls, among other equipment-based measures, in order to prevent the occurrence of fires, and to increase our ability to detect and extinguish fires rapidly and to mitigate their effects in the event that they do occur.



④ Flooding-resistance measures

Facility design incorporates measures such as the positioning of vital equipment inside rooms protected by watertight doors in order to ensure that functions essential to safety are maintained even in the event of flooding due to damage to pipes, etc. In addition to adopting measures to prevent the infiltration of water into equipment through open sections, we will install waterproof covers, etc. We will also be implementing measures to prevent water containing radioactive materials from flowing outside buildings.



⑤ Enhancement of reliability of static equipment (Ensuring availability of back-up filters)

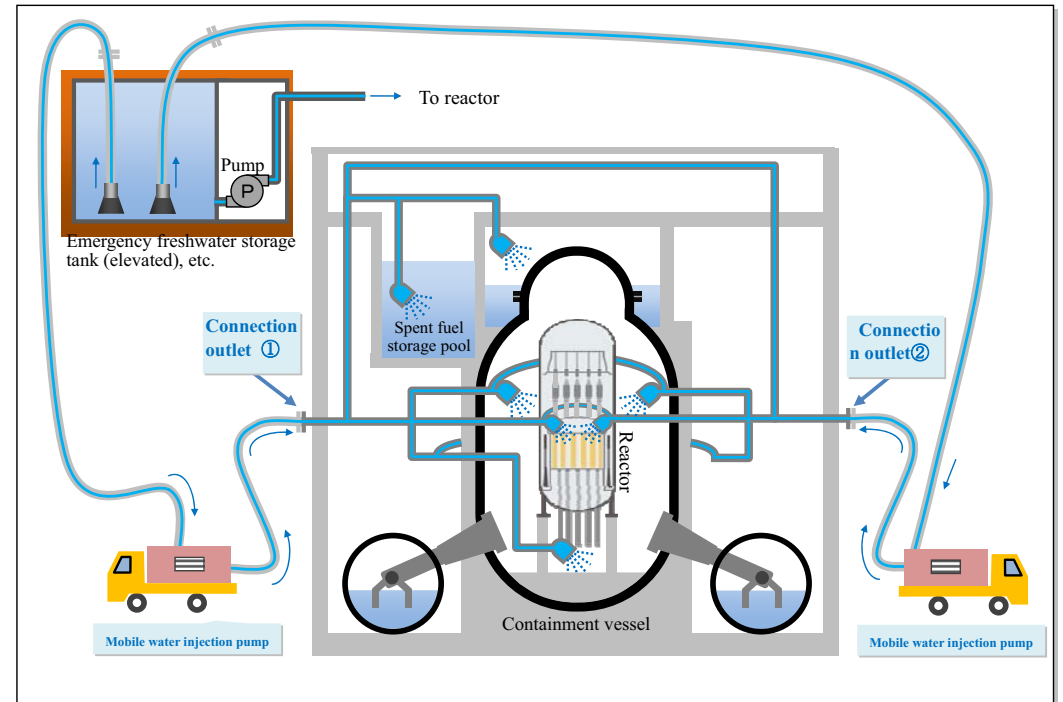
We are seeking to further enhance the reliability of this equipment by enabling rapid responses in the event that a malfunction does occur. We are therefore ensuring the availability of back-ups for the filter units in the stand-by gas treatment system (Unit 4) and the Main Control Room air-conditioning and ventilation system, which are essential to the maintenance of safety.

⑥ Tsunami-resistance measures

We have already introduced measures to prevent flooding within the station site such as the installation of a tsunami protection wall, and measures to prevent inundation of buildings up to a height of T.P.+15m. In order to increase safety and to prevent severe accidents or other major events, as part of our additional measures we will further enhance measures to prevent inundation of buildings, for example by introducing equipment to automatically close openings in buildings up to the height of the intermediate roofs of the reactor buildings (about T.P.+20m).

⑦ Enhanced water injection performance

The facility is provided with multiple alternative water injection methods, including air-cooled heat exchangers to ensure that the high-pressure water injection system can be operated if the cooling functions of the reactors, containment vessels, and spent fuel storage pools are lost in the event of a severe accident or other major event. Seeking to further increase our ability to inject water into the reactors via movable equipment, as part of our additional measures we will be positioning additional mobile water injection pumps at each unit, and taking other measures including dispersed positioning of equipment, etc. the pump connection outlets outside the buildings

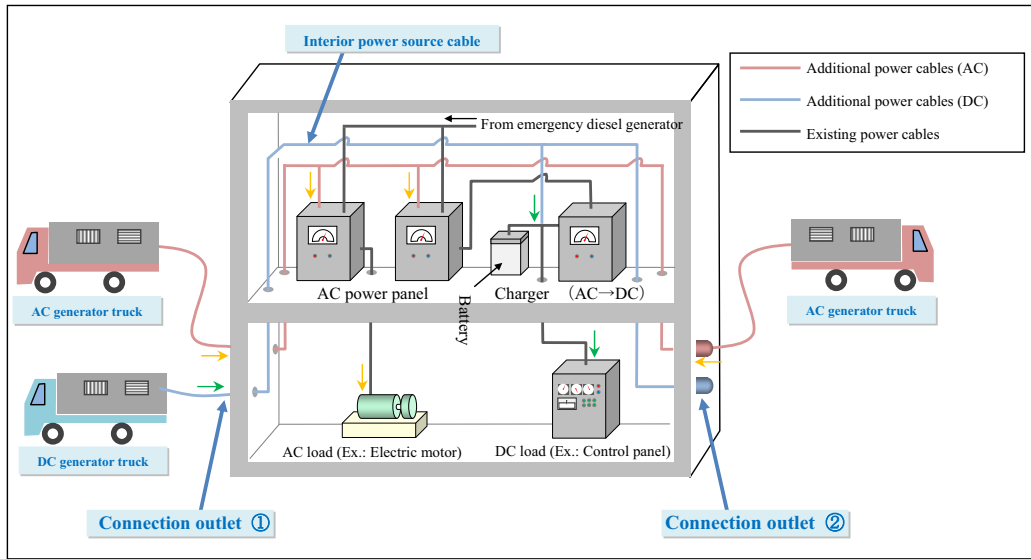


⑧ Enhanced depressurization performance

Reactor pressure vessels are depressurized by supplying nitrogen gas to the main steam safety relief valve and releasing valves. To provide a backup to the nitrogen canisters, we will position additional mobile air compressors at each unit.

⑨ Enhanced guarantee of power supply

The facility is supplied with multiple alternative power sources such as gas turbine generators positioned on high ground in the event that all AC power is lost. In order to provide a further guarantee of the availability of power sources using movable equipment, we will position AC and DC generator trucks at each unit, and we will take measure dispersed positioning of relevant equipment including external connection outlets to connect the trucks and power supply cables inside the buildings.



⑩ Venting of hydrogen by filter vent equipment

Normally, the interior of the filter vent equipment is filled with nitrogen gas. We intend to make it possible by positioning of mobile nitrogen gas production equipment to refill the filter vent equipment with nitrogen gas after it has been used to discharge hydrogen gas produced in the containment vessel when the reactor core has been damaged.

⑪ Measures to suppress radioactive materials dispersion outside the facility

We will install water cannons and other equipment to control the spread of radioactive materials vented from the reactor buildings following a severe accident or other major event by spraying water on the buildings in order to cause the radioactive substances to fall to the ground.

⑫ Enhancement of performance of instruments

To ensure that it is possible to measure parameters that must be monitored following a severe accident or other major event, we already employ measures such as the use of separate dedicated power sources for critical instruments. We intend to implement further measures, including the use of metal-plated cables with high heat resistance for meters inside the containment vessels.

⑬ Enhancement of functions of emergency response center

To ensure that essential personnel are able to spend long periods in the emergency response center even following a severe accident or other major event, we will take steps to increase radiation-shielding performance, for example by increasing the thickness of the walls of the center.

⑭ Ensuring storage areas and access routes

We will ensure that the storage areas for movable equipment put in position as a measure to respond to severe accidents and other major events take natural phenomena such as earthquakes and tsunami into consideration. We will also ensure access routes.

⑮ Other measures

We will install a seismic resistance data recording and storage system independently of the existing systems to make it possible to accurately record and store data concerning parameters that must be monitored even if an earthquake occurs. We will also implement measures including the installation of infrared cameras for monitoring outside buildings, to enable the personnel in the Main Control Room to remain aware of the external situation.