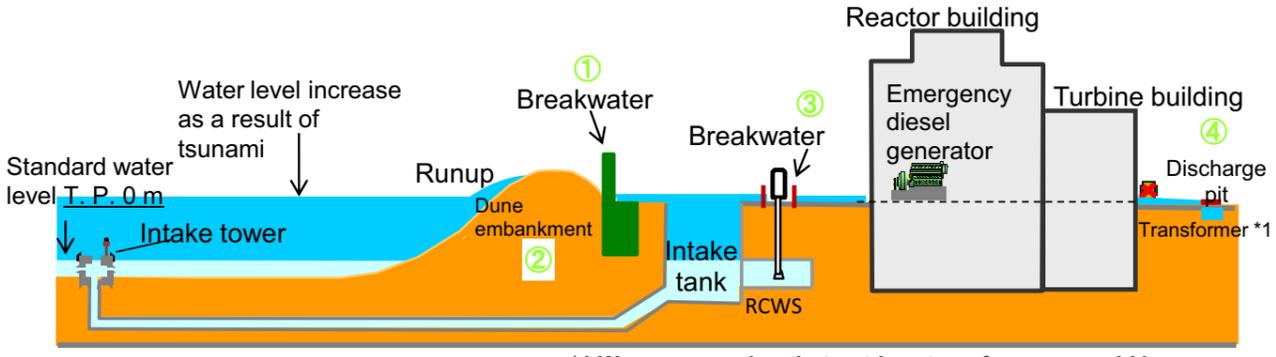
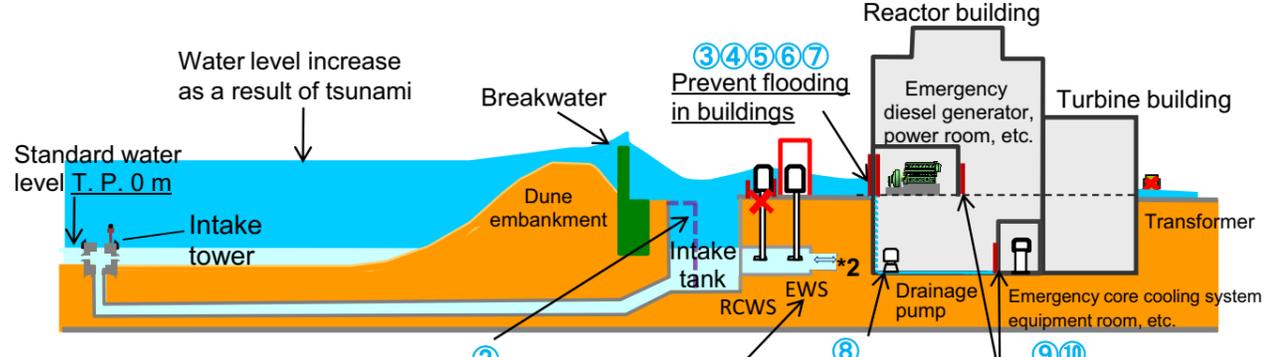


Flooding Prevention Measures at Hamaoka Nuclear Power Station

	Stance on Ensuring Safety	Overview	Measures
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Flooding prevention measures 1</p>	<p>[Prevent flooding on the station grounds]</p> <p>Prevent flooding by tsunami on station grounds, mitigate impact of overflow onto station grounds from water intake systems, etc., and maintain function of reactor cooling water system (RCWS) pumps located outdoors.</p> <p style="text-align: center;">↓</p> <p><Prevent flooding on the station grounds></p>	<p>● Build breakwater (T.P. + 18 m), etc. to prevent flooding on the station grounds</p>  <p>*1 We are assuming that outdoor transformers would become unusable if there is flooding on the grounds; we do not assume the station will get power from outdoor transformers right way even if external power is restored.</p>	<p>● Emergency Safety Measures (already announced) ◎ Medium to long-term measures (already announced) ○ Medium to long-term measures (additional) </p> <p><Prevent flooding on the station grounds></p> <div style="border: 1px dashed red; padding: 5px;"> <p>① ◎ Build breakwater (T.P. + 18 m at crown) on seaward side of station</p> <ul style="list-style-type: none"> • Height set at T.P. + 18 m in light of height of dune embankment in front of grounds (T.P. + 10 - 15 m) and the runup height of the tsunami that hit Fukushima Daiichi (T.P. + 15 m) <p>② ○ Raise dune embankment in front of grounds and embankments of east and west sides</p> <ul style="list-style-type: none"> • Raise embankments of east and west sides (T.P. + 18 - 20 m), etc. </div> <div style="border: 1px dashed red; padding: 5px;"> <p>③ ◎ Build water barrier (height: 1.5 m) for seawater intake pump area</p> <ul style="list-style-type: none"> • Build 1.5-m water barrier for seawater intake pump area to prevent flooding of reactor cooling water system (RCWS) <p>④ ○ Close discharge pit and discharge channel opening</p> <ul style="list-style-type: none"> • Close openings of discharge pit, etc., to prevent leaking of water </div>
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Flooding prevention measures 2</p>	<p>[Prevent flooding in buildings]</p> <p>Establish substitutes for function of reactor cooling water system (RCWS) pumps that are located outdoors and prevent flooding in buildings so that there is no impact on important safety equipment related to cooling function (water injection, heat removal, power source) for reactor core and spent fuel in buildings, even if water were to overflow the breakwater and flood the stations grounds.</p> <p style="text-align: center;">↓</p> <p><Maintain seawater cooling function> <Prevent flooding in buildings> <Prevent flooding in equipment rooms></p>	<p>● Maintain seawater cooling function and prevent flooding in buildings if there is flooding on the station grounds</p>  <p>*2 Connects to other reactors' intake tank connecting tunnel</p>	<p><Maintain seawater cooling function></p> <div style="border: 1px solid blue; padding: 5px;"> <p>① ○ Build emergency water intake system (EWS) (substitute for reactor cooling water system (RCWS))</p> <ul style="list-style-type: none"> • To prepare against loss of function because of flooding of reactor cooling water system (RCWS) pumps located outdoors, build waterproof buildings and build new emergency water intake systems (EWS) in them <p>② ○ Measures to prevent flotsam from entering intake tank</p> <ul style="list-style-type: none"> • Install entry prevention net to prevent flotsam from entering </div> <p><Prevent flooding in buildings></p> <div style="border: 1px dashed red; padding: 5px;"> <p>③ ◎ Enhance reliability of waterproofing doors in building exterior walls</p> <ul style="list-style-type: none"> • Change to double waterproof doors, watertight doors <p>④ ◎ Measures to prevent flooding from air intakes/vents (openings) in building exterior walls</p> <ul style="list-style-type: none"> • Change form of air intakes/vents <p>⑤ ◎ Measures to prevent flooding from building through-holes (i.e., improve sealing)</p> <ul style="list-style-type: none"> • Install stopping panels to crevices and add water sealant to enhance waterproofing <p>[③, ④ and ⑤ together are one item related to shutdown request]</p> <p>⑥ ○ Close underground pipe/duct inspection openings, entry doors, etc.</p> <ul style="list-style-type: none"> • Close duct inspection openings, entry doors, etc. to enhance waterproofing <p>⑦ ○ Reinforce building structure (Nos. 4, 5 seawater heat exchanger buildings)</p> </div> <p><Prevent flooding in equipment rooms></p> <div style="border: 1px solid blue; padding: 5px;"> <p>⑧ ◎ Strengthen building drainage countermeasures (install drainage pump)</p> <p>⑨ ○ Install additional watertight doors, reinforce others</p> <p>⑩ ○ Measures to prevent flooding from equipment room through-holes (enhance sealing)</p> </div>