

The outline of Tsuruda Dam redevelopment



Sendaigawa River office, Kyushu Bureau, MLIT

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The natural environment around Tsuruda Dam

The Sendaigawa river basin is the area where much rain occurs and also the flood occurs frequently.

On the other hand, Sendaigawa is blessed with the abundant nature.

There are specialty products which used high quality water and the tourist attractions which utilized nature around Tsuruda Dam.



" the Sogi Falls " which is called Oriental Niagara



the Sogi powerplant ruins



Tsuruda Dam



firefly watching



" shochu " which used high quality water

The damage by the flood in July, 2006

① Satsumasendai city



② Satsumasendai city



③ Satsuma town



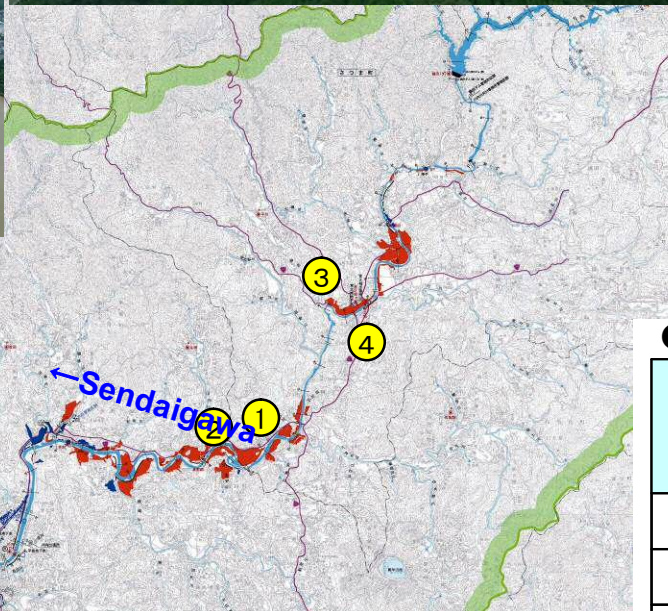
④ Satsuma town



⑤ Isa city



Tsuruda Dam



⑥ Isa city



⑦ Yusui town



the rescue operation by the Self-Defense Force

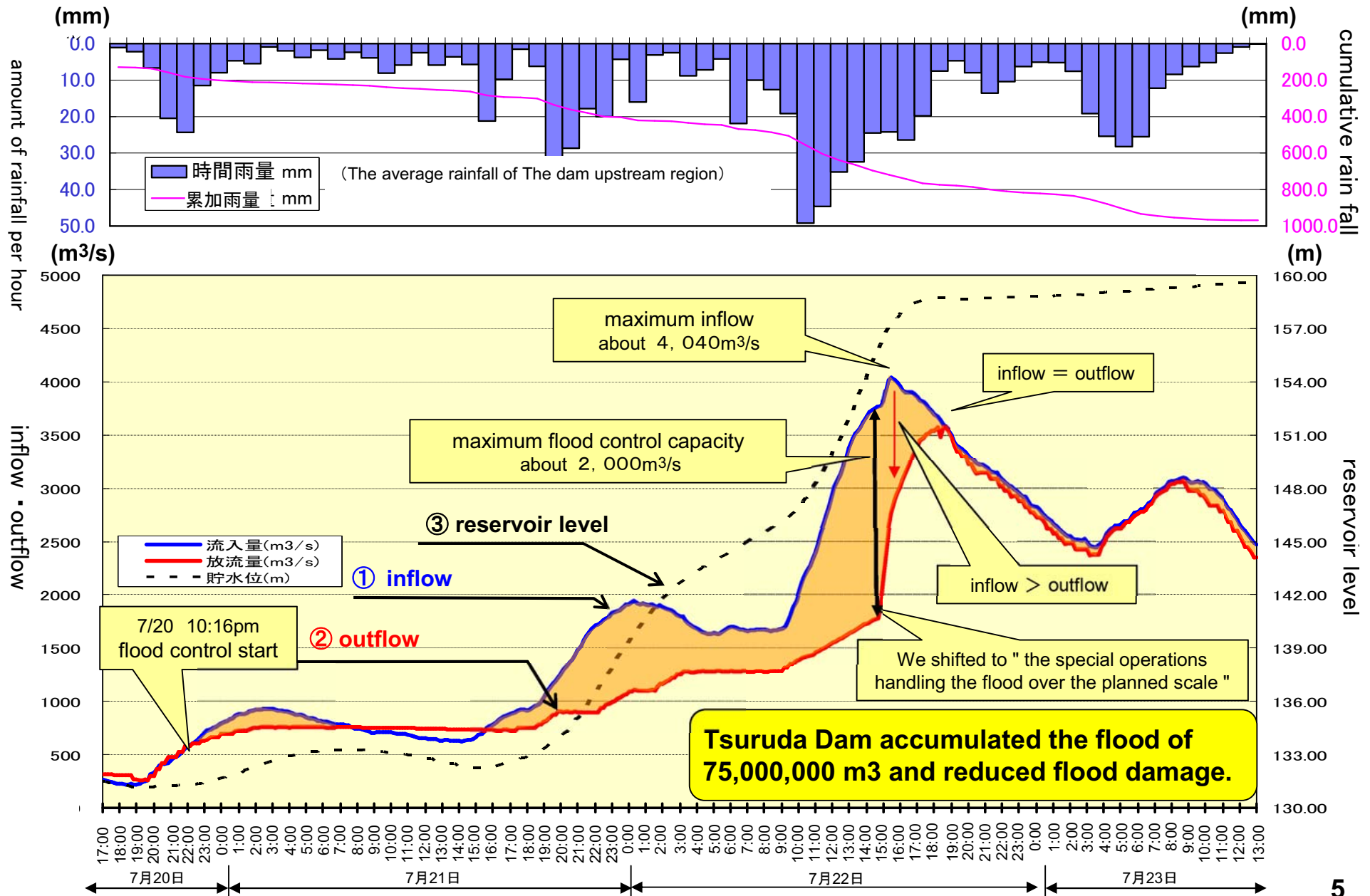


Yusui town

● situation of damage

name of municipality	inundation above floor level (house)	inundation under floor level (house)	total
Satsumasendai City	91	39	130
Satsuma Town	850	89	939
Isa City	232	69	301
Yusui Town	446	123	569
Ebino City	229	179	408
total	1,848	499	2,347

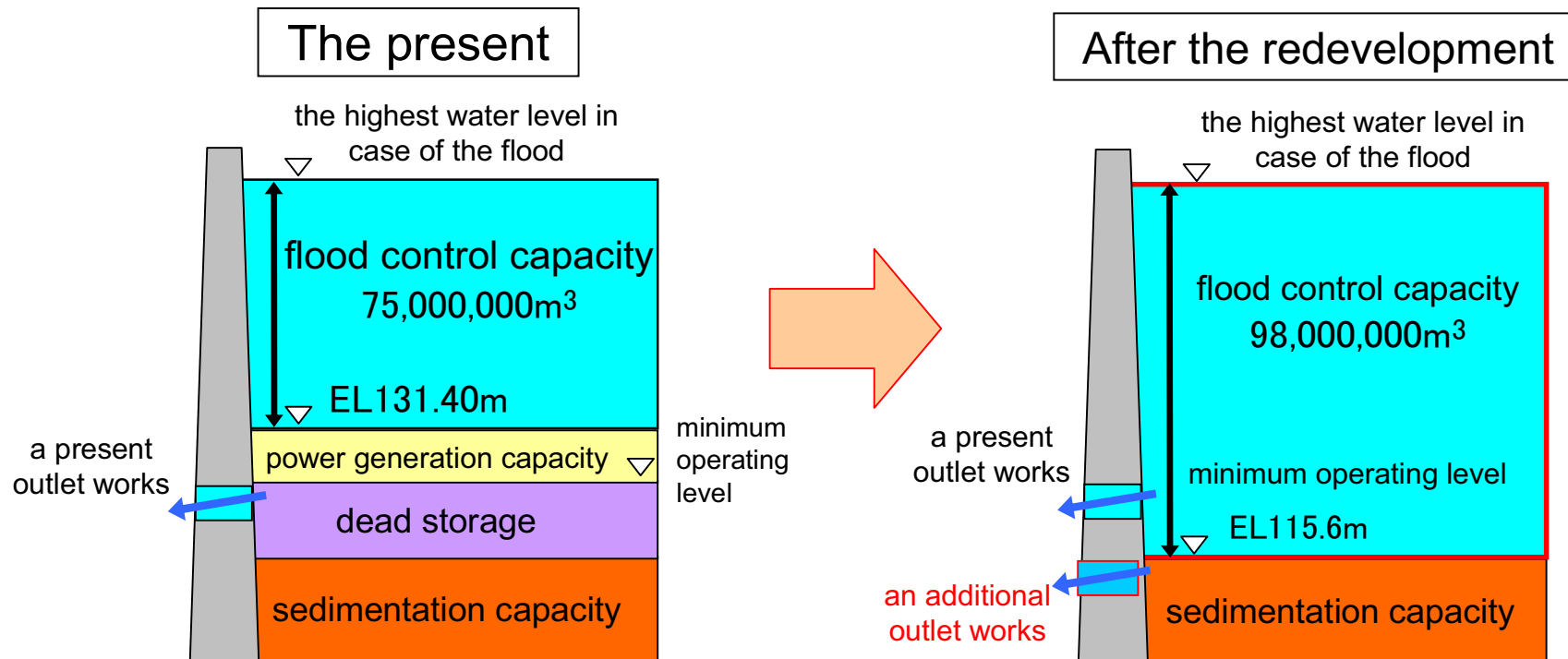
The flood control by Tsuruda dam about the flood at July, 2006



The outline of Tsuruda Dam redevelopment

The enormous damage in July, 2006 became the opportunity which Tsuruda dam redevelopment begins with.

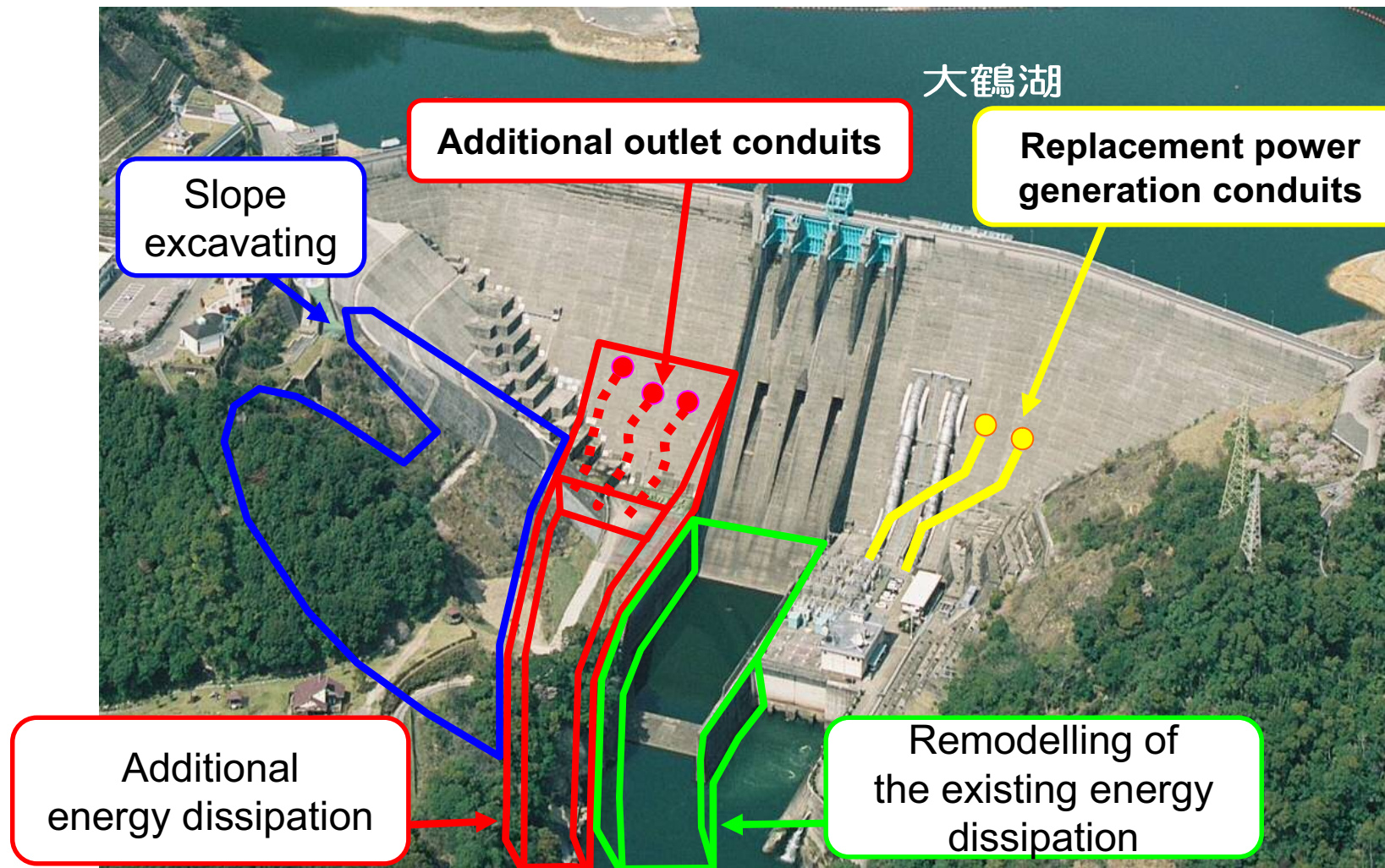
We set about this project on April, 2007 to reduce flood damage on the Sendaigawa river basin.



- We'll lower a reservoir level, and will increase the flood control capacity from a maximum of 75,000,000 m³ to a maximum of 98,000,000 m³.
- We'll add outlet conduits in the position which is lower than now.

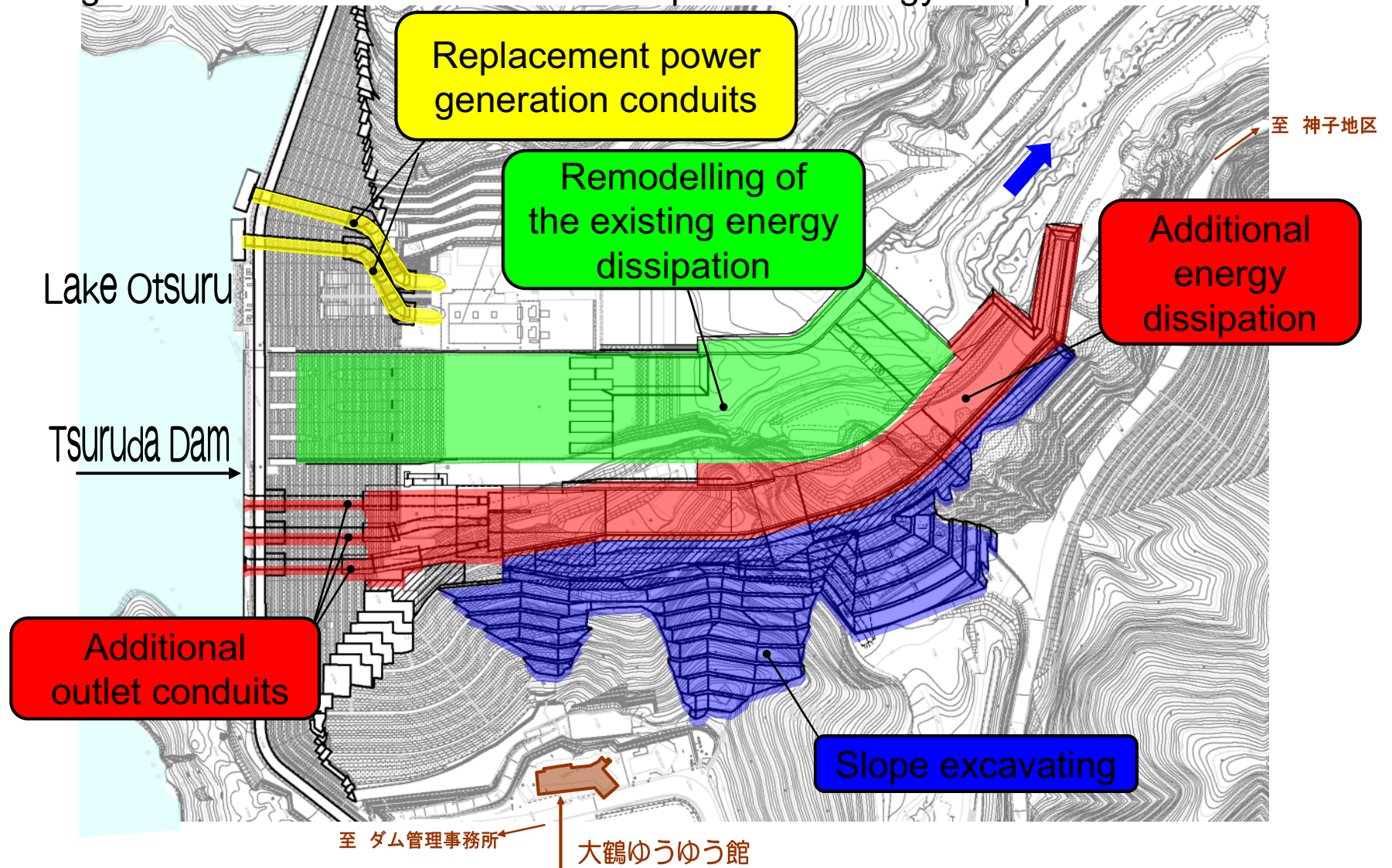
The overview of the construction

We'll conduct these construction while maintaining the feature of the present dam.



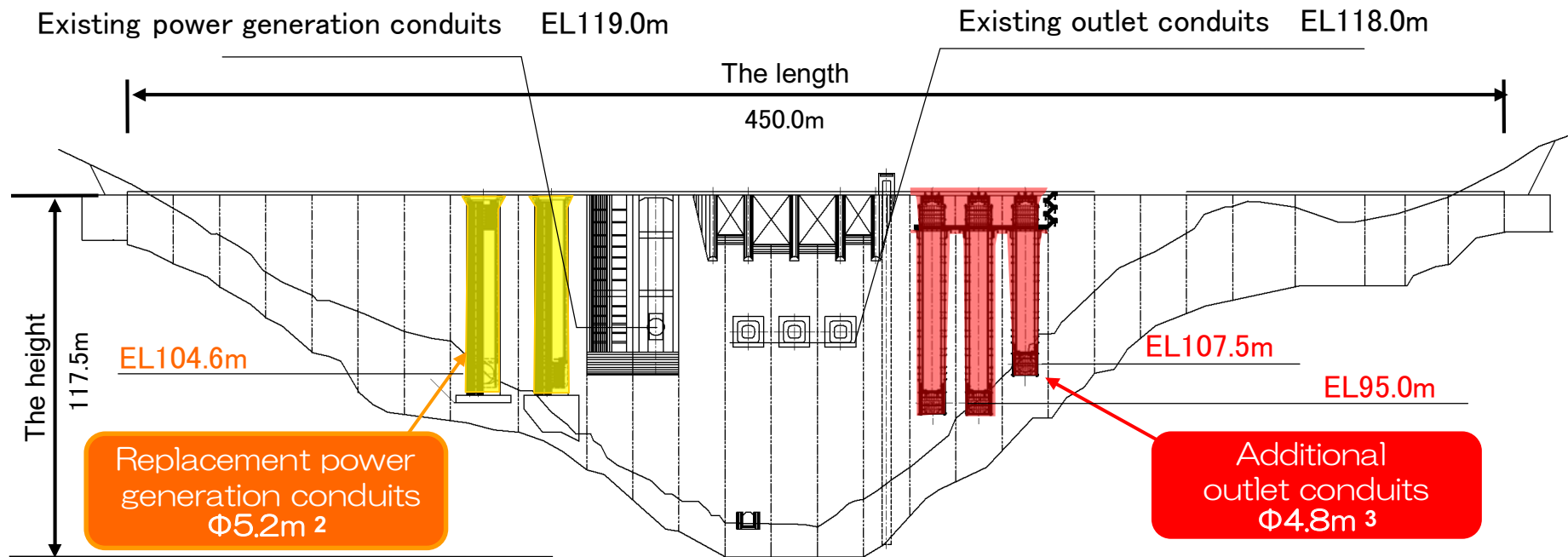
The plane figure

We considered an influence over the powerplant on the left bank and the slope drilling on the right bank. We decided the best shape of the energy dissipation.



The figure from upstream

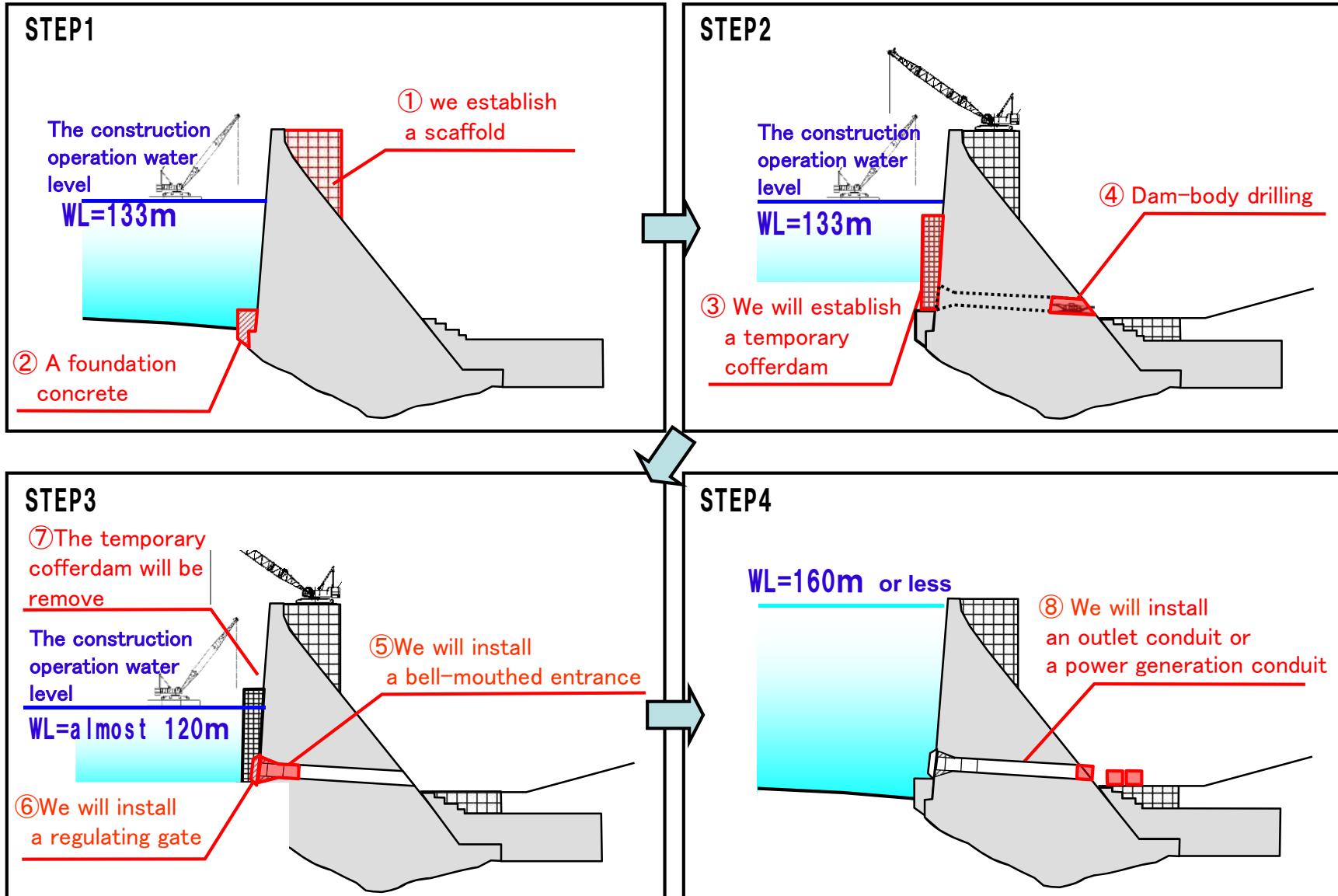
We'll make five holes with the additional outlet conduits and the replacement power generation conduits.



Tsuruda Dam redevelopment is one of the largest dam redevelopments in Japan.

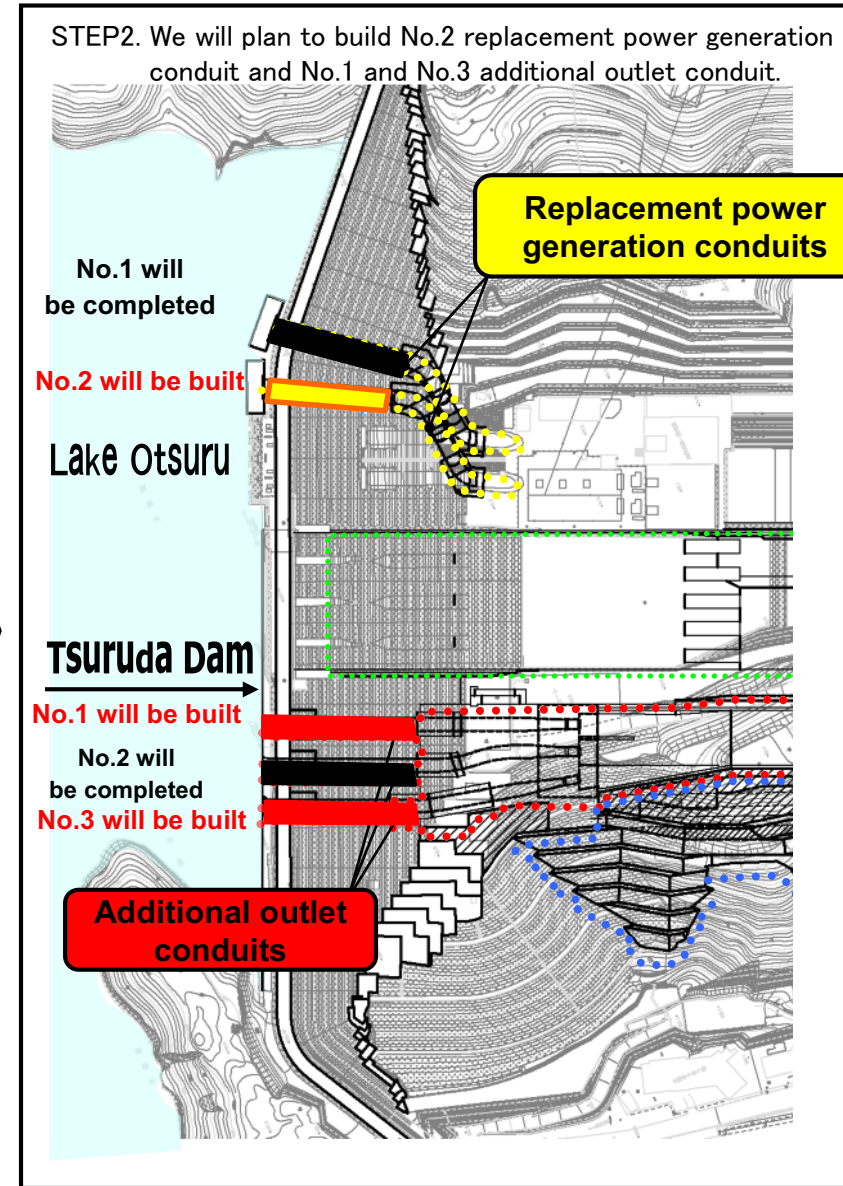
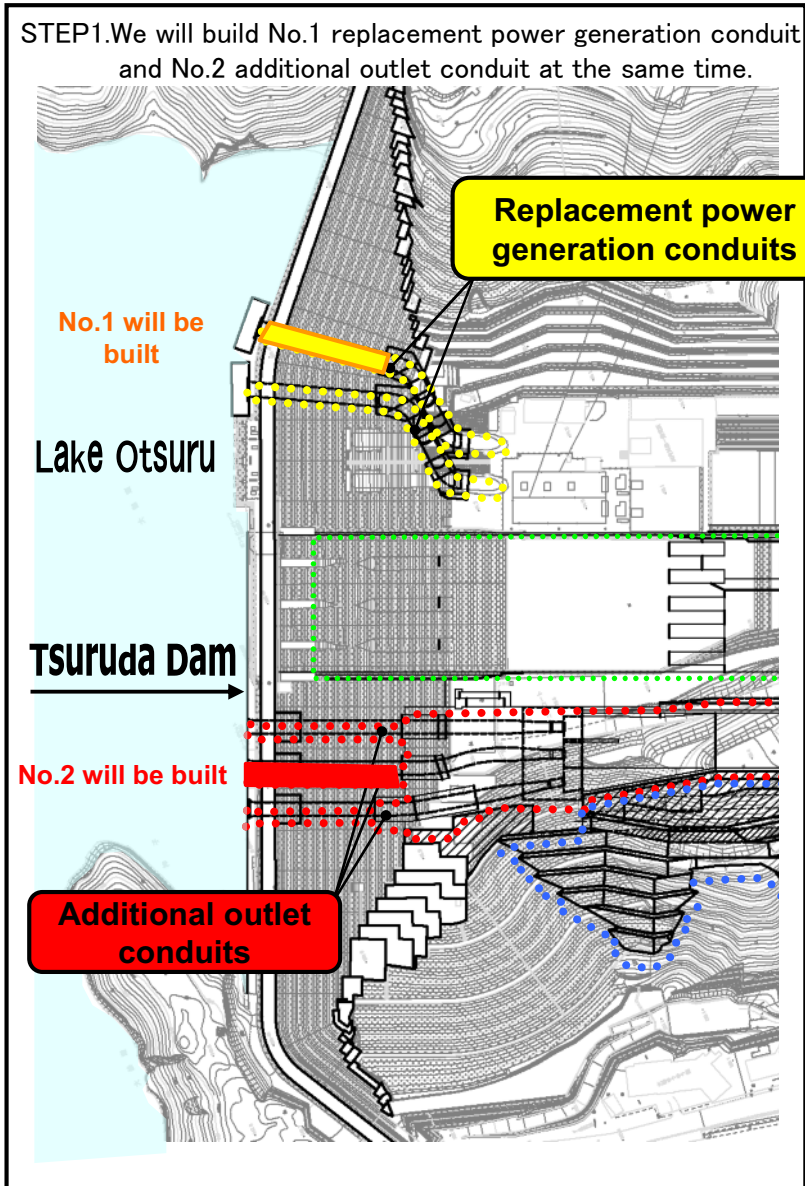
The construction methods of the conduit

To secure the safety of the construction in the reservoir,
we avoid flood season as much as possible.
In addition, we will lower a water level than usual.



The plan of the construction of the conduit

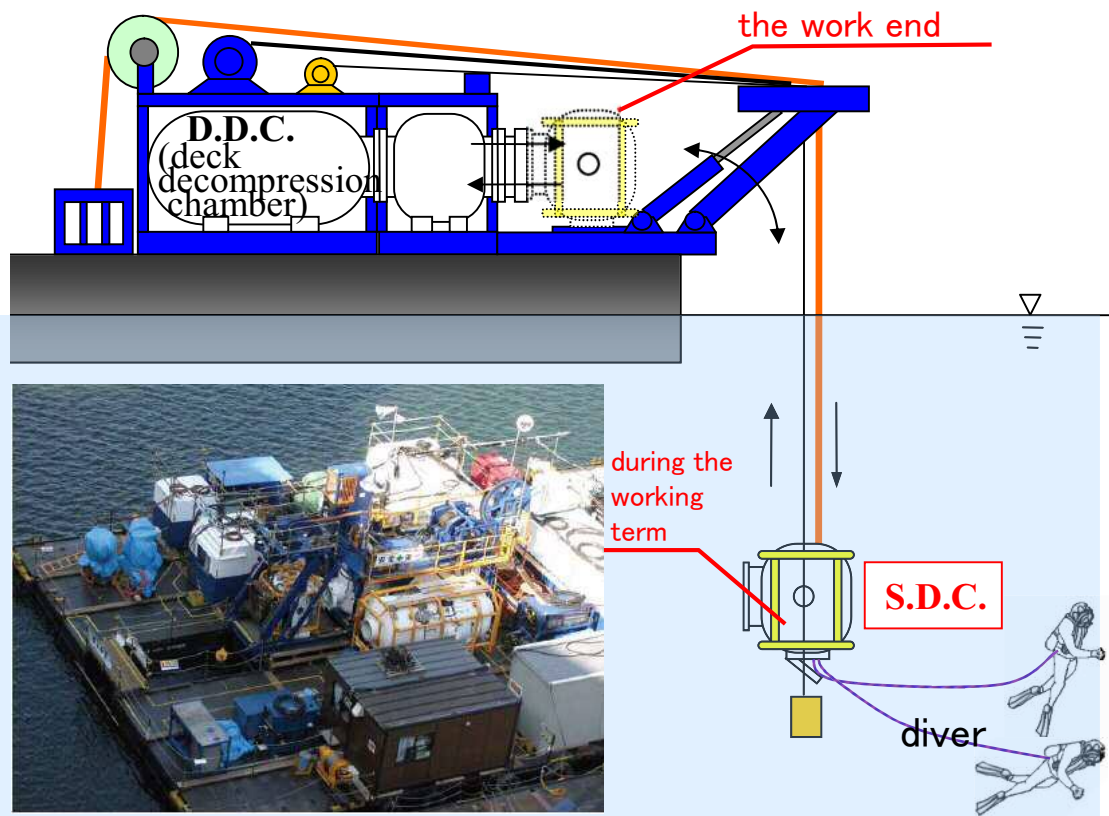
we'll plan to do the construction of the outlet conduit and the power generation conduit, dividing it into the following two steps.



The Saturation Diving

- The Saturation Diving is the following method. The diver must live at the residential space of the atmospheric pressure which is the same as the working water depth during the working term. The diver is decompressed in the work end and return to the atmosphere pressure.
- The diver must stay at the deck decompression chamber about 1 month.

Because we must work at 65 m water depth in maximum, we adopt " the Saturation Diving" for the increase in efficiency of the work and the safety of the diver.



Filming at february,2012



S.D.C. (submersible decompression chamber)

The picture of the expectation after completion of Tsuruda Dam redevelopment

We expect that the necessity of the dam redevelopment becomes increasingly bigger in the future.

