

Experience of applying tower foundations to a landslide area with risk assessment

B2_PS1_Q1.9: Would experts from other countries/utilities share their experience in overcoming challenges in design & construction of transmission line towers located in difficult soil conditions, marshy lands, lakes/sea etc. ?

Tomoaki Sei (Japan)

Background

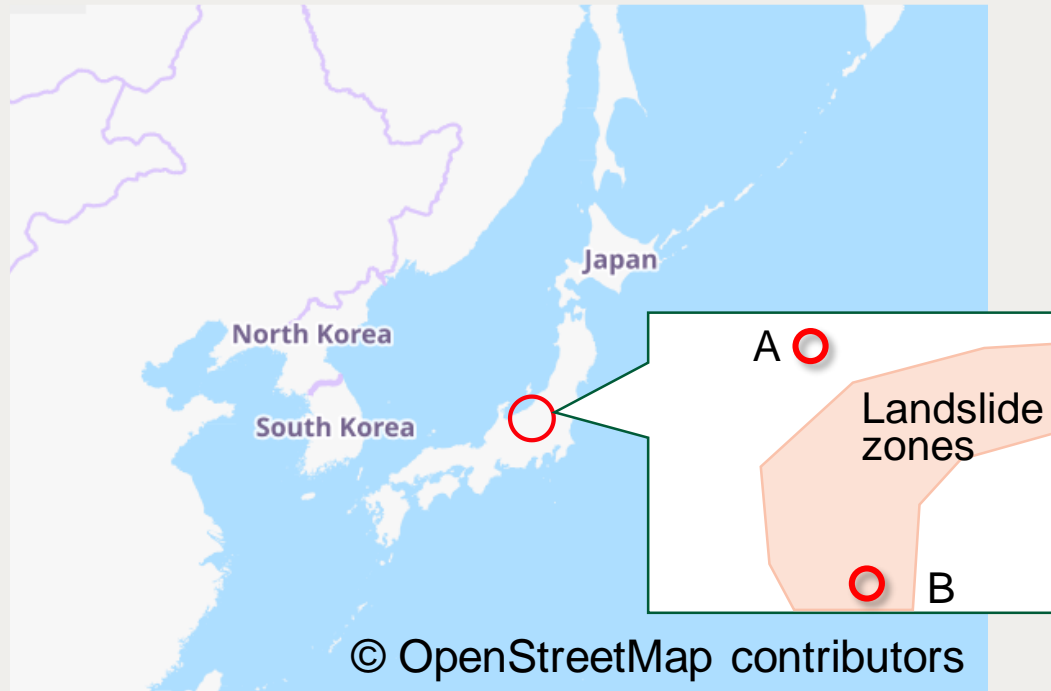


Fig.1 Construction area

A new OHL required constructing to ensure a stable power supply.



However, it was **difficult** for the transmission line route (A to B in Fig.1) to completely **avoid large landslide zones**.



Therefore, **landslide countermeasures in terms of design and construction** were considered, taking into account the long-term risk of OHL.

Procedure for taking countermeasures

STEP1 : Investigation of landslide area

Desk study and field survey like Fig.2 are performed to **make the scale and the activity of each one clear.**



Bending of trees



Crack on a road



Displacement of a road

Fig.2 Example of landslide features in field survey

STEP2 : Evaluation of the risk in each site

Each site is evaluated from STEP1's result (non-active, low, medium, high risk).

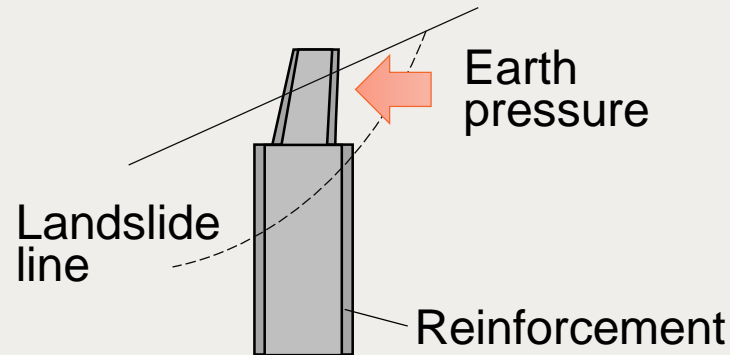
Group Discussion Meeting

Procedure for taking countermeasures and conclusion

STEP3 : Selection of the countermeasures for landslide

Evaluation results	Non-active	Low risk	Medium risk	High risk
Measures	—	①	① + ②	Avoiding to construct

① Reinforcement of foundation in consideration with earth pressure



② Preventive piles for landslide

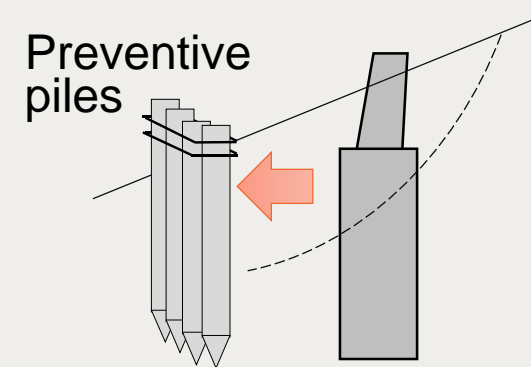


Fig.4 countermeasures for landslide

Conclusion : These countermeasures make the long-term risk reduced.