

The Ages of Fault Activities of the Ilkwang Fault in Southeastern Korea, Revealed by Classification of Geomorphic Surfaces and Trench Survey

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Abstract : The Ilkwang Fault is NNE-striking, elongated 40 Km between Ulsan and Haeundae-ku, Busan in southeastern part of the Korean Peninsula(Kim, D. H. *et al.*, 1989; Kim, J. S. *et al.*, 2003). This paper is mainly concerned about the ages of the fault activities especially in the Quaternary, inferred from classification of geomorphic surfaces and trench excavation for the construction of Singori nuclear power plant.

The geomorphic surfaces are classified into the Beach and the Alluvial plain, the 10 m a.s.l. Marine terrace, the 20 m a.s.l. Marine terrace, the Reworked surface of 45 m a.s.l. Marine terrace and the Low relief erosional surface, from lower to higher altitude. The Beach and the Alluvial plain are elongated to the Holocene terrace (1st terrace, Choi, 2003). The 10 m a.s.l. Marine terrace is correlated to 2nd terrace (MIS 5a, 80 Ka. y. B.P.), the 20 m a.s.l. Marine terrace to 3rd terrace(MIS 5c, 105 Ka. y. B.P.), or to the Lower marine terrace 1 (MIS 5e, 125 Ka. y. B.P., Choi, 1998). The 45 m a.s.l. Marine terrace is correlated to 4th terrace (MIS 7, 220 Ka. y. B.P., Choi, 2003 or MIS 9, 320 y. B.P.) to the Gwanganri terrace(Penultimate interglacial age, 200-200 Ka. y. B.P., Oh, 1981).

The Low relief erosional surface is distributed coastal side, the Reworked surface of 45 m a.s.l. Marine terrace inland side by the Ilkwang Fault Line as the boundary line. But the former is above 10 m higher in relative height than the latter. The 20 m a.s.l. Marine terrace on the elongation line of the Ilkwang Fault reveals no dislocation. A site was trenched on the straight contact line with N30° E-striking between the 10 m a.s.l. Marine terrace and the 20 m a.s.l. Marine terrace. Fault line or dislocation was not observable in the trench excavation. Accordingly, the straight contact line is inferred as the ancient shoreline of the 10 m a.s.l. Marine terrace.

The Ages of the Fault activities are inferred after the formation of the Ichonri Formation - before the formation of the 45 m a.s.l. Marine terrace (220 Ka. y. B.P. or 320 Ka. y. B.P.). The Low relief erosional surface was an island above the sea-level during the formation of the 45 m a.s.l. Marine terrace in the paleogeography.

Key Words : fault activity, geomorphic surface, marine terrace, trench excavation

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