

Major Geologic Hazards And Prevention of Resettlement Sites at the Three Gorges Reservoir of the Yangtze River,China

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The resettled population of the Three Gorges Reservoir of the Yangtze River is about 1.2 million. During the first period project on migration from 1993 to 1997, 82 thousands of population is resettled, and 550 thousands of population will be resettled during the second period project from 1997 to 2003, over 600 thousands of population will be resettled during the third period project by 2009. The population resettlement is a great challenge, since in the area of reservoir the flat to suit construction is rare and geologic hazards are quit often occurred. The paper discusses on the engineering geology, especially geologic hazards and controlling, while relocating. Geologic hazards in the Three Gorges Reservoir could be divided into three periods: the first period is before 1993, when the dam project began, mainly natural geologic hazards, of course, some caused by human activity • the second period is from 1993 to 2003, geologic hazards mainly caused by toe-cut landslide and waste rock material storage • the third period is after 2003, espically, from 2003 to 2009, geologic hazards will be caused by water level fluctuation ,and during third period, over 600 thousands of population will be relocated that will be surge of geologic hazards. The third period of geohazard will extend by 2020. Lots of problem on geologic hazards will be met, such as, protection, remedy and utilization of landslide and rockfall deposit, “large-scale excavating and large-scale filling”for the construction and relocation. The controlling engineerings are illustrated

on major geologic hazards that has potential to stop the navigation of the Yangtze River, such as, Lianziya dangerous rockmass, Huanglashi landslide, Jiguanling rockfall. And the geologic hazard prevention project has been carried out for the resettlement in the new sites, such as Waxian, Wushan, Badong, etc.

It is high risk to utilize the hazardous geomass on the base of stabilization, such as landslide, but, is very realistic subject. The pre-stressed anchoring pile is applied to controlling large-scale landslide and creating a flat to build. The loose falling & sliding mass is reconstructed with cement grout that is greatly to decline the price of foundation and slope. Cutting-caused waste materials are threatening the course of the Yangtze River, and endangering the relocation sites by man-made sliding and debris. The fabric retaining wall, max height, 57m, is build to store the waste material and create the suitable land to relocation.