

The Three Gorges Project in China



by Ir. Tham Kum Weng

MY wife and I, together with some friends, travelled to Zhangjiajie to tour the UNESCO World Heritage Forest Park of unique towering mountain peak formations. The Zhangjiajie Mountains were also popularised by the movie "Avatar". We then travelled seven hours eastward by road, running almost parallel to the Yangtze River to Yichang, the World Energy City.

The Three Gorges Project (TGP) was built across the Yangtze at Yichang in Hubei Province, some 1,800km upstream of Shanghai. The TGP is the world's largest hydroelectric power plant (21,000MW capacity). The annual generated capacity in 2009 was 79.4TWh. However, the Itaipu Dam (by Brazil and Paraguay with a smaller 14,000MW capacity), which opened in 1984, has a larger annual generated capacity of 91.6TWh.



Nevertheless, with 32 turbines, the TGP production output is set to rise when the dam is fully impounded at a maximum of 175m from the current level of about 162m. The power supply coverage radius exceeds 1,000km, hence covering over 50% of the Chinese territory.

The construction of the TGP, from 1994 until the commencement of operation in 2003, culminated a long 90-year period of dream, gestation, planning and much human perseverance since the idea was first envisioned by Dr Sun Yat-Sen of the Kuomintang Party in 1919. The construction with full completion in 2009 was carried out during the New Communist Party era, thus transgressing the political divide.

From Yichang, we boarded the President Prime luxury cruise ship, intending to have a leisurely 4-day cruise 660km upstream to Chongqing City, including an initial 4-hour transit through the two-way five step shiplocks (280m x 35m each) designed for 10,000-tonne vessels. The shiplocks would raise each transiting vessel from 62m downstream to a maximum level of 175m upstream.

Unfortunately, due to the heavy river vessel congestion, regular leisure ships were no longer allowed to transit the shiplocks at will. We, therefore, had to be contented with only viewing the dam, the shiplocks and other facilities in the accessible areas of the TGP.



Another transit facility in the form of a 11,800 tonne capacity 113m vertical ship lift has been under construction since 2007. The lift, catering for 3,000 tonne vessels is scheduled for completion in 2014, cutting the transit time to only 45 minutes.

The TGP at 180 billion Renminbi (or about RM90 billion) is China's pride and touted as an engineering and economic feat. Besides power generation, it also serves the functions of flood control and irrigation, and enables a multiple-fold increase in shipping operations, allowing 10,000 tonnage fleets to navigate directly from Shanghai to Chongqing.

However, its success came with a heavy toll from the social, cultural, environmental and human perspectives. The initial impounding of the dam from 2003 was made possible after a massive five-year planned relocation and resettlement of some 1.3 million of the population and resulted in the permanent flooding of some 13 cities, 140 towns, 1,352 villages and 657 factories.

The 350 multinational passengers had a relaxing and enjoyable cruise through the magnificent Xiling Gorge, the Wu Gorge and Qutang Gorge with daily stops at various local jetties. Along the way, we passed under many spectacular long span bridges built across the Yangtze River.

We also passed by the entirely new booming Badong township where up to 100,000 of the resettled population now live in two- or three-storey high western style buildings with modern facilities. Surely, the TGP and the Yangtze will become increasingly popular as tourist attractions. ■