

Three Gorges Dam Proves Its Worth

by William Jones

Aug. 3—The famous Three Gorges Dam in central China, the world's largest, faced its greatest test last month, and passed with flying colors. With unusually heavy rains pounding the region, on July 24, at 8 p.m., the water flow into the dam's reservoir reached its highest peak ever, at 71,200 cubic meters per second, and on July 25, the dam released water at the rate of 43,000 cubic meters per second.

Heavy rains on the upper reaches of the Yangtze have caused high waters in all of the tributaries flowing into the river, along with heavy flooding in the towns and cities along the flood reservoir, including the waterfront sections of the city of Chongqing, with a metropolitan population of 32 million. More than 600 ships are at anchor in the reservoir, delayed by the flooding. These vessels will proceed downstream through the system's locks, as soon as the floodwaters recede.

Thanks to the recent completion of the Three Gorges Dam, even though a Level II emergency was declared in the region, it did not entail the massive military evacuation mobilization which would have been mandatory in years gone by. The trouble spots nowadays are no longer in the Yangtze River valley, but in other parts of the country which have been hit by massive flooding, without the protection that the dam provides.

The Yangtze River, the longest in China and the third-longest in the world, has experienced extreme flooding at fairly regular intervals. The 1954 flood inundated 48 million hectares of farmland, affecting 18 million people, and claimed 30,000 lives. In 1998, another huge flood affected 21.8 million hectares of farmland and destroyed 5 million houses; 4,150 people were killed. Flood control and rescue operations involved the de-

ployment of 300,000 Army troops to the regions.

This year saw an unprecedented amount of rainfall, and not only in the Yangtze River region, but in the entire country. In the generally arid northern regions on the Yellow River, which in some sections is often dry as a bone, there was extensive flooding, not seen since 1988 or earlier. Similarly, in the South, in Guangzhou. Even in Beijing, there was so much water that the city's drainage system could not cope with it. In addition to a general tie-up of traffic for days, dozens of people were killed.

Sun Yat-sen's Great Project

The location of the present Three Gorges Dam, just up-river from the town of Yichang, had already been identified in 1919 as a prime location for a hydroelectric power facility by Dr. Sun Yat-sen (1886-1925), in an article entitled "Industrial Plan." He further elaborated on the idea in a lecture on his "Third Principle of the People: Peoples' Livelihood"; it also figured prominently in his 1922 programmatic work, "The Industrial Development of China."

During World War II, the site was investigated by engineers from the U.S. Bureau of Reclamation, taking



The stunningly beautiful Three Gorges Dam on the Yangtze River creates a new infrastructure platform in China that will lift the conditions of life for hundreds of millions of people. For exactly that reason, the radical Green movement opposed it, and is campaigning to prevent any further such development in China.

the successful development by the Tennessee Valley Authority as a paradigm for what could be accomplished if a dam were built. The Bureau's John Savage had even outlined a program for how many engineers, physicists, electricians, mechanics, and skilled workers would be required for its construction. The ensuing civil war in China, however, put a stop to this development.

But in 1969, when China was just coming out of the disastrous Cultural Revolution, a call was again raised by officials in Hubei Province, where the Three Gorges is located, for construction of a dam. A decision was made to build a dam further downstream from the Yichang site. Here, the Gezhoubo Dam began producing electricity in 1981, giving Chinese engineers practical experience which would be put to good use in tackling the bigger project farther up the river at the Three Gorges.

In 1992, the Seventh National People's Congress made the final decision to construct a dam in the middle section of the first of the gorges, just above Yichang. Construction on the dam was finished in 2009. Officials with the Three Gorges Corporation say that the dam has actually prevented at least 10 major floods since it was completed.

The last of the 32 turbines for producing electricity—hydroelectric power being another major function of the dam—was just installed in June, bringing the dam to its full production of electricity. Electrical production at the Three Gorges represents 11% of the total hydroelectric power generation in the country, and has so far generated 564.8 billion kilowatt hours.

Like any major water-management project of this size, construction of the Three Gorges Dam required tremendous amounts of labor and sacrifice by the people who built it, and by those who were forced to move to allow its construction. Hundreds of thousands of people had to be relocated from the areas which had to be flooded to create the dam reservoir.

Enter, the Greenies

The dam was heavily criticized internationally by the so-called environmentalist movement when it was

FIGURE 1
Three Gorges Dam



FIGURE 2
Location of the Three Gorges Dam on the Yangtze River



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first proposed; the Greens claimed that it violated the major tenet of their insane ideology: It was a great project, which would prevent the forces of nature from sweeping man away—just the type of project the Green movement was created to prevent! It became an ideal target around which to organize the burgeoning environmentalist movement in China, which launched an effort to prevent its construction. The dam also became a banner issue for the international Green movement, which saw it as a “dangerous model,” which might well be followed by other countries lacking sufficient energy and flood control.

The success of the Three Gorges Dam during the recent terrible floods has no doubt infuriated the Greenies, who have embarked on an global offensive to stop all dam-building, particularly in the developing nations of Asia and Africa, where it is needed the most. Malaysia plans to build 12 hydroelectric dams in the Sarawak province of Borneo. Malaysian and Swiss (yes, Swiss!) protestors presented a petition to the UN

office in Geneva, with 6,000 signatures protesting the dam project.

Impoverished Laos hopes to build 60 dams to become what it calls an electric “battery” for Southeast Asia. This too has been met by protests by the international Green movement. Brazilian dams on the Amazon River have also met with protests. Unable to stop the Three Gorges in China, the Greens have targeted China’s dam-building in Africa, where China is constructing or financing numerous water projects in Sudan, Zaire, Ethiopia, Nigeria, Zambia, and Ghana.

Assistance from the United States for construction of the Three Gorges Dam had been forthcoming in the beginning, when closer relations with China were established under the Reagan Administration in the 1980s. When construction began in the 1990s, the Clinton Administration also considered assisting China’s great project. But the Greenie movement, with Vice President Al Gore as its chief spokesman—he had been handed the environmental portfolio by President Clinton—succeeded in sabotaging that cooperation, and prevented the U.S. Ex-Im Bank from providing any funding whatsoever for the dam’s construction.

Even now, following its completion, the Greenies have continued their campaign against the dam. As recently as last year—a year of significant drought in China as a whole—Greenie critics claimed that the cause of the drought was the construction of the dam, and said the dam’s reservoir was “depriving” the natural lakes downstream of water. The recent floodings, however, effectively “drowned out” all talk about the dam creating a drought. The achievements of the Three Gorges Project, in the face of the worst flood in decades, is there for all to see.

But the flood season is far from over. “Controls will not be eased back any time soon, as rainfall is again expected on upper reaches of the Yangtze,” Three Gorges Corporation informed the public. And Premier Wen Jiabao, visiting the devastation in the southern provinces, has called for vigilance during the next few days as rains are still forecast for most of the country.

But the people of the Yangtze Valley can rest assured that this great bastion at the foot of the Three Gorges is keeping careful watch over the flow of water, protecting the nation from its worst ravages.

Yangtze Water to the Arid North China Plain

For the Chinese government, the Three Gorges Project has another important function: to bring the

water of the Yangtze to the arid northern plains region. China is generally water-short, due to an arid climate and insufficient water-management programs.

In spite of the massive flooding this year, the North China Plain is generally extremely arid. This region contains one-third of China’s population, and cultivates two-fifths of its farmland, but contains less than 8% of the country’s water resources. The region depends upon groundwater for 60% of its water usage. At the present rate, experts fear that the groundwater will be exhausted in 30 years. Therefore, the government has launched the South-to-North Water Diversion Project, to bring water from the Yangtze to the heavily populated northern cities and to the Yellow River.

Three South-North routes have been laid out, but construction has only started on two of them. The easternmost branch will follow an ancient water route, the Grand Canal, which will bring water from Hangzhou, a city northwest of Shanghai, to Beijing. The Grand Canal has been in use for maritime traffic since ancient times, but requires a significant makeover and cleaning, as it has become heavily polluted through the centuries. Additional water can be pumped into the canal from the Yangtze River when it reaches it on its way north from Hangzhou.

The central route will be built largely from scratch, taking water from the Danjiangkou reservoir, which is fed by the Han River, a tributary of the Yangtze, and tunneling under the Yellow River to bring water to Beijing. To alleviate concerns that this might significantly drain the water in the Han River, there are proposals to build a second tunnel from the Three Gorges reservoir to the Danjiangkou reservoir tunnel to maintain its level.

The third, westernmost, leg of the project remains to be finalized. There are additional concerns here, as it would bring water through the Ningxia-Tibet Plain, a sensitive ecological area, and one with difficult mountainous terrain which would have to be tunneled. Here the Greenie opposition converges with the ethnic Uyghur and Tibetan independence movements to give the authorities additional political headaches. The western leg is aimed at replenishing the Yellow River with water from the upper reaches of the Yangtze and its tributaries, for irrigation in the Gansu-Ningxia region.

The Three Gorges Dam project has been labeled the greatest water-management project in the world—and until the realization of the NAWAPA project in the western United States and Canada, it will no doubt remain so.