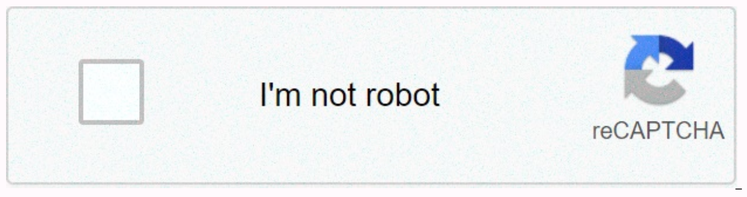

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Three gorges dam address

Dam in Sandouping, Yiling District, Hubei Dam in Sandouping, Yiling District, Hubei Three Gorge Dam|峽坝A dam in September 2009Placement hubei provinceCountryChinaPlacement, Yiling District, HubeiKoorodik30°49′23N 111° 00′12E / 30.82306° N 111.00333° E / 30.82306; 111.00333Coordinates: 30°49′23N 111°00′12E / 30.82306° N 111.0033° E / 30.82306; 111.00333PurposeFlood control, power, navigationStatusOperationalConstruction beganDecember 14, 1994Opening date2003[1]Construction cost¥203 billion (US$31.765 billion)[2]Owner(s)China Yangtze Power (subsidiary of China Three Gorges Corporation)Dam and spillwaysType of damGravity damImpoundsYangtze RiverHeight181 m (594 ft)Length2,335 m (7,661 ft)Width (crest)40 m (131 ft)Width (base)115 m (377 ft)Dam volume27.2 million m3 (35.6 million cu yd)Spillway capacity116,000 m3/s (4,100,000 cu ft/s)ReservoirCreatesThree Gorges ReservoirTotal capacity39.3 km3 (31,900,000 acre·ft)Catchment area1,000,000 km2 (390,000 sq mi)Surface area1,084 km2 (419 sq mi)[3]Maximum length600 km (370 mi)[4]Normal elevation175 m (574 ft)Power StationCommission date2003–2012TypeConventionalHydraulic headRated: 80.6 m (264 ft)Maximum: 113 m (371 ft)[3]Turbines32 × 700 MW2 × 50 MW Francis-typeInstalled capacity22 500 MWCapacity faktor45% Éves generációs101.6 TWh (366 PJ) (2018) A Három Szurdok gát egy vízerőmű gravitációs gát , which embraces the Yangtze River by the city of Sandouping, Yiling District, Yichang, Hubei Province, central China, along the Three Gorges. Three Gorges Dam has been the world's largest power plant for installed capacity (22,500 MW) since 2012. [5] [6] In 2018, the dam generated 101.6 terawatt hours (TWh), breaking its previous record,[7] but was still slightly lower than the Itaipú Dam, which produced 103.1 TWh in 2016. [8] The dam's body was completed in 2006. On 4 July 2012, the dam project's power plant was completed and fully operational,[9][10] when the underground power plant's last main water turbine started production. Each main water turbine has a capacity of 700 MW. [11] [12] Connecting the dam's 32 main turbines with two smaller generators (each 50 MW) to power the power plant itself, the dam has a total electrical production capacity of 22,500 MW. [11] [13] [14] The last main element of the project, the ship lift, was completed in December 2015. [15] In addition to producing electricity, the dam also serves to increase the transport capacity of the Yangtze River. By providing flood storage space, the dam reduces the possibility of downstream floods that could potentially affect millions. China sees the project as a monumental social and economic success,[16] with the design of state-of-the-world large turbines,[17] and greenhouse gas emissions. [18] However, the dam flooded archaeological and cultural sites, displaced some 1.3 million people and caused significant ecological changes, including an increased risk of landslides. [19] [20] As a result, the dam is controversial both at home and abroad. [21] [22] [23] [24] Three gorges dams are simple chinese|峽坝conventional Chinese,峽壩TranscriptionsStandard MandarinHanyu PinyinSānxiá DàbàBopomofoㄙㄢ ㄒㄧㄚˊ ㄉㄚˋ ㄅㄚˋIPA[sán.5j tâ.pâ]other MandarinDungancaнl ся да ба In his poem Swimming (1956) engraved on the Wuhan Flood Memorial in 1954, which was built in his poem Swimming (1956). [25] Map of the location of the three gorges and the most important cities of the Yangtze River The great dam across the Yangtze River was originally dreamed up by Sun Yat-sen in 1919 in China's international development. [26] [27] He stated that after the three gorges, a dam capable of producing 30 million horsepower (22 GW) would be built. [27] In 1932, the nationalist government led by Chiang Kai-shek began preliminary work on the Three Fold plans. In 1939, during the second Sn chinese-Japanese war, Japanese military forces seized Yichang and surveyed the area. The plan, the Otani plan, completed the dam, in anticipation of Japan's victory over China. [Subpoena required] In 1944, John L. Savage, chief design engineer at the U.S. Office of Reclamation, assessed the area and drafted a dam proposal for the Yangtze River Project. [28] Some 54 Chinese engineers went to the U.S. for training. Under the original plans, the dam was to use a unique method of moving ships: ships would enter locks at the lower and upper ends of the dam, and then cranes would move ships from one lock to another. For the sake of efficiency, groups of craft would be raised together. It is not known whether this solution was considered in terms of water saving performance, or because engineers believed that the difference between the height of the river above and below the dam was too large for alternative methods. [29] Some research, surveying, economic study and planning work was carried out, but the government stopped work in the middle of the Chinese civil war in 1947. After the Communist Revolution of 1949, Mao Zedong supported the project, but first began the gezhouba dam project, and economic problems, including the Great Leap and the Cultural Revolution, slowed down development. After the yangtze river floods of 1954, in 1956, Mao Zedong wrote Swimming, a poem about his fascination with the dam on the Yangtze River. In 1958, after the Hundred Flowers campaign, some engineers who spoke out against the project were imprisoned. [30] In the 1980s, the idea of a dam reappeared. The National People's Congress approved the dam in 1992: out of the 2,633 delegates, voted in favour of the report, 177 against, 664 abstained and 25 did not vote, resulting in an unusually low 67.75% support. [31] Construction began on 14 December 1994. [33] The dam is expected to be fully operational in 2009, but other projects, such as the underground power plant with six additional generators, delayed the entire plant until May 2012. [14] [30] [34] The boat lift was completed in 2015. [15] By the end of 2008, the dam had raised the water level in the reservoir to 172.5 m and by October 2010 the planned maximum level of 175 metres. [36] The composition and dimensions of the Dam of the Three Gorges face upwards, showing the body of the dam (middle left), the spillway (in the middle of the dam's body) and the ship's elevator (right). The Model of the Three Gorges Dam shows the ship's elevator and the ship's lock. The boat lift is located to the right of the dam body with its own designated waterway. The ship locks are on the right (northeast) of the ship's elevator. Earthfill south dam in the foreground overlooking the main dam. The wall is beyond that separate spillway and turbine flows into the lock and the ship lift upward approach channel. A similar hyphenation is applied on the later page, which is partly shown in the previous image. The concrete and steel barrier is 2335 metres long and the top of the dam is 185 metres high. The project used 27.2 million m3 (35.6 million cu yd) of concrete (mainly the dam wall), used 463,000 tons of steel (enough to build 63 Eiffel Towers) and ranged from about 102.6 million m3 (134.2 million cu yd) of land. [38] The wall of the concrete block is 181 meters above the rock base. If the water level above sea level is not more than 175 m, 110 metres higher than the river level downstream, the dam reservoir has an average length of 660 km and 1.12 km wide. It contains 39.3 km3 (31 900 000 hectares) of water and has a total area of 1045 km2. Upon completion of the reservoir flooded the entire area of 632 km2 (244 sq mi) of land, compared to 1350 km2 (520 sq mi) in the reservoir created by Itaipu Dam. [39] Economics The government estimates that the Three Gorges Dam project will cost 180 billion yuan (US$22.5 billion). [40] By the end of 2008, expenditure had reached 148.365 billion yuan, of which 64.613 billion yuan had been spent on construction, 68.557 billion yuan for relocation of affected residents, and 15.195 billion yuan for financing. [41] In 2009, it was estimated that construction costs would be reimbursed when the dam produced 1,000 terawatt hours (PJ 3,600), resulting in 250 billion yuan. The full cost recovery thus occurred ten years after the dam was fully operational,[40] but the total cost of the Three Strait Dam [42] Funding sources include the Three Gorges Dam Construction Fund, profits from the Gezhouba Dam, loans from the China Development Bank, loans from domestic and foreign commercial banks, corporate bonds, and revenues before and after the dam are fully operational. The additional fees were assessed as follows: Each province that had power from the Three Gorges Dam had to pay an extra fee of 7.00 yen/MWh. Other provinces had to pay a surcharge of 4.00 yen/MWh. The Tibet Autonomous Region does not pay a fee. [43] Panorama of the Three Strait Dam power generation and distribution of electricity generation in China, according to a source. Comparison: The fully completed Three-Fold Dam contributes about 100 TWh generations a year. Energy production is managed by China Yangtze Power, a listed subsidiary of China Three Gorges Corporation (CTGC) – the Central Corporate SOE managed by SASAC. The Three Gorges Dam is the world's largest capacity hydroelectric power plant with 34 generators: 32 main generators, each with a capacity of 700 MW, and two power plants, each with a capacity of 50 MW, giving a total capacity of 22,500 MW. [11] Of the 32 main generators, 14 were

installed on the north side of the dam, 12 were installed on the south side and the remaining six were installed in an underground power plant on the mountain south of the dam. Annual electricity generation in 2018 was 101.6 TWh,[7] which is 20 times more than the Hoover Dam. [44] Generators The main generators weigh approximately 6,000 tons each and produce more than 700 MW of power. The generator is designed for hydraulic head 80.6 meters. The flow rate varies from 600 to 950 cubic metres (21,000 to 34,000 cu ft/s) depending on the available head. The larger the head, the less water is needed to achieve full power. Three Gorges use Francis turbines. The turbine has a diameter of 9.7/10.4 m (VGS design/ Alstom design) and a rotational speed of 75 revolutions per minute. This means that to generate 50 Hz power, the generator rotors have 80 poles. Rated power 778 MVA with a maximum power factor of 840 MVA and 0,9. The generator generates electricity at 20 kV. The electricity generated is then increased to 500 kV for transmission at 50 Hz. The exterior diameter of the generator stands is 21,4/20,9 m. The inner diameter is 18.5/18.8 m. The statue, the largest of its kind, is 3.1/ 3 m high. The load capacity is 5050/5500 tonnes. The average efficiency is more than 94% and reaches 96.5%. [45] Three Gorges Dam Francis turbine The generators were manufactured by two joint ventures: Alstom, ABB Group, Kvaerner and Harbin Motor, China; the other is Voith, General Electric, Siemens (abbreviated as VGS), and Chinese Oriental Motor. Technology transfer agreement signed with the contract. Most generators are water-cooled. Some are more recent air-cooled, which are easier to design and manufacture, and easier to maintain. [47] Generator installation progress the first north side main generator (No. 2) began on July 10, 2003; on the north side became fully operational on September 7, 2005, the implementation of the generator No. 9. on October 18, 2006 total power (9800 MW) only 156 m after the water level reached 156 m. [48] The 12 south-side main generators are also in operation. No. 22 began operations on June 11, 2007, and No. 15 was launched on October 30, [12] The sixth (No. 17) 2007 [49] [50] [51] On 23 May 2012, when the last main generator, No. 27, completed the final test, the six underground main generators were also in operation, increasing capacity to 22.5 GW. [9] After nine years of construction, installation and testing, the plant was fully operational by July 2012. [14] [53] [54] Milestones in production Annual electricity generation year Number of installed units GWh 2003 6 8.607 2004 11 39.155 2005 14 49.090 2006 14 49 .250 2007 21 61.600 2 008 26 80 812 [55] 2009 26 79 470 [56] 2010 26 84 370 [57] 2011 29 78.290 [58] 2012 32 98.100 [59] 2013 32 83.270 [60] 2014 32 98.800 [61] 2015 32 87.000 [62] 2016 32 93.500 [63] 2017 32 97 .600 [64] 2018 32 101.600 [7][65] 2019 32 96,880 [66] Three Gorges Dam annual power Yangtze River flow rate compared to the dam's input capacity on August 16, 2011, the plant generated 500 TWh of electricity. [67] [68] In July 2008, it generated 10.3 TWh of electricity, above 10 TWh in the first month. [69] In August 2009, the plant briefly reached maximum performance during a flood in August 2009. [71] During the November-May dry season, the flow rate of the river limits performance, as shown in the figure on the right. If the flow is sufficient, power energy is limited by the power plant's production capacity. The maximum power output curves were calculated on the basis of the average flow rate applied at the dam site, assuming that the water level is 175 m and the gross efficiency of the plant is 90,15%. The actual output was based on monthly electricity sent to the grid in 2008. [72] [73] The Three-Fold Dam 2010 [36] Has a combined production capacity of 22.5 million kilowatt-hours and a planned annual it has a capacity of 88.2 billion kilowatt hours. In 2012, the dam's 32 production units produced a record 98.1 TWh of electricity, which is 14% of China's total water production. [74] In 2018, the dam created a new record of 103.1 TWh of electricity. Between 2010 (the first maximum reservoir water level) and 2019, the dam generated an average of 92 TWh of electricity per year, which is only the second in addition to the itaipu dam average, which represents 92.8 TWh of electricity per year over the same period. Distribution State Grid Corporation and China Southern Power Grid 2008. Since then, the price has varied from 228.7 to 401.8 yen/MWh. [75] Nine provinces and two cities consume energy from the dam. [76] The cost of energy distribution and transmission infrastructure is approximately 34.387 billion yuan. Construction was completed in December 2007, a year ahead of schedule. [77] The power supply is distributed through several 500 kV power lines. Three DC lines in the Eastern China Grid carry 7200 MW: Three Gorges - Shanghai (3000 MW), HVDC Three Gorges - Changzhou (3000 MW), and HVDC Gezhouba - Shanghai (1200 MW). The total capacity of the alternating streams of the Central China network is 12,000 MW. The DC power line HVDC Three Gorges - Guangdong in southern China Grid has a capacity of 3000 MW. [78] The dam is expected to give China 10% of its power. However, electricity demand has increased faster than previously forecast. It is still fully operational, on average, that supports only about 1.7% of electricity demand in China in 2011, when Chinese electricity demand reached 4,692.8 TWh.[79][80] Environmental Impact Satellite Map shows areas flooded with the Three Gorges reservoir. Compare November 7, 2006 (above) and April 17, 1987 (below) Flood mark the Yangtze River emissions to the National Development and Reform Commission, according to 366 grams of coal that would produce 1 kWh of electricity in 2006. [81] Between 2003 and 2007, energy production amounted to 84 million tonnes of standard coal. [82] Erosion and settling Two hazards are individually identified with the dam. [83] One is that the sedimentation forecasts were not agreed, and the other is that the dam is sitting on a seismic defect. At current levels, 80% of the land in the area is experiencing erosion, deposited about 40 million tons of sediment in the Yangtze annually. [84] As the flow moves more slowly over the dam, most of the sediment will now settle there, rather than flowing downwards and there will be less sediment downstream. The lack of sludge downstream has three effects: Some hydrologists expect riverbanks to become increasingly vulnerable to flooding. [85] Shanghai, more than 1,600 km away, is a huge sediment The incoming silt , as long as it arrives, strengthens the bed on which Shanghai is built... The smaller the volume of incoming sediment, the more vulnerable this largest Chinese city is to flooding... [86] The accumulation of bentic sediment causes biological damage and reduces aquatic biodiversity. [87] Landslides Erosion of the reservoir, caused by rising water causes frequent major landslides that have caused noticeable disturbances on the reservoir's surface, including two incidents in May 2009 when somewhere between 20,000 and 50,000 cubic meters (26,000 and 65,000 cu yd) of material fell into the flooded Wu Gorge of the Wu River. [88] In the first four months of 2010, there were 97 major landslides. [89] Waste management in Zigui County is meeting a source water protection area in Maoping Town, a few kilometers from groin Italian garbage collection in the southeastern corner of the dam catalyzed right upstream sewage treatment around Chongqing and suburban areas. According to the Ministry of The Environment, as of April 2007, more than 50 new plants will be able to manage 1.84 million tonnes per day, which is 65% of the total need. About 32 landfills have been added, which could handle 7,664.5 tonnes of solid waste per day. [90] More than one billion tons of wastewater are discharged into the river each year,[84] which was more likely to be avoided before the reservoir was created. This left the water looking stagnant, polluted and dim. [89] In 1997, forest cover achieved 10% aforestation in the Three-Fold area, close to 20% in the 1950s. [84] According to research carried out by the Food and Agriculture Organisation of the United Nations, the Asia-Pacific region will win a total of around 6,000 km2 of forests by 2008. This is a significant change from the 1990s to net forest losses of 13 000 km2 per year. This is largely due to China's great reforeforeation efforts. This accelerated after the 1998 Yangtze River floods convinced the government to restore tree cladding, especially in the Yangtze Basin in front of the Three Gorges Dam. [91] Wildlife This section needs to be updated. Update this article to reflect recent events or newly available information. (October 2017) Concerns about the potential wildlife impact of the dam precede the Approval of the National People's Congress in 1992. [92] This region has long been known for its rich biodiversity. It is home to 6,388 plant species, which belong to 238 families and 1,508 genera. 57 percent of these plant species are endangered. [93] These rare species are also used as components of traditional Chinese medicines. [94] The proportion of wooded land in the region surrounding the Three Gorges has fallen from 20 percent in 1950 to less than ten percent in 2002,[94] negatively affecting all plant species in the municipality. The region hundreds of freshwater and terrestrial animal species. [93] Freshwater fish are particularly affected by dams due to changes in water temperature and flow system. Many other fish have been damaged by turbine blades from hydroelectric plants as well. This is particularly damaging to the region's ecosystem, as the Yangtze River basin is home to 361 different species of fish and makes up 27 per cent of all endangered freshwater fish species in China. [95] Other aquatic species are also endangered by the mother animal, in particular the Baiji or Chinese river dolphin,[84] which is now extinct. In fact, Chinese government scientists also claim that the Three Gorges Dam was directly caused by the extinction of the baiji. [96] The Chinese paddlefish was also believed in part because the dam prevented it from migrating. Of the 3,000 to 4,000 remaining critically endangered Siberian cranes, many are currently spending the winter in wetlands that will destroy the Three Gorges Dam. [97] The dam contributed to the functional extinction of the baiji yangtze river dolphin. Although it was close to this level at the beginning of construction, the dam further reduced its habitat and increased ship transport, which is one of the factors causing its final destruction. In addition, the population of yangtze sturgeon is guaranteed to be negatively affected by the dam. [98] In 2005, NASA scientists calculated that the water mass shift stored by dams would increase the earth's daily length by 0.06 microseconds and make the Earth slightly rounder on poles. [99] Floods, agriculture, industry Water levels and inflows during the 2020 Chinese floods The dam's important task is to contain flooding, which is one of the main problems of the Yangtze Seasonal River. Millions of people live along the dam, with many large, important cities like Wuhan, Nanjing and Shanghai by the river. A lot of agricultural land and china's most important industrial area are built by the river. The reservoir has a flood storage capacity of 22 cubic kilometers(5.3 cu mi; 18,000,000 hectares). This capacity reduces the frequency of major downstream flooding once every 10 years and then once every 100 years. The dam is expected to minimize the impact of yet another super flood. [100] [101] In 1954, the river flooded 193,000 km2, killing 33,169 people and forcing 18,884,000 people to move. The flooding covered Wuhan, the city of eight million, for more than three months, and the Jingguang railway was out of service for more than 100 days. [102] The 1954 flood carried 50 cubic kilometres of water. The dam only diverted water over Chenglingji, so 30-40 km3 (7.2-9.6 cu mi) can be diverted. [103] Furthermore, the mother cannot protect itself from tributaries downstream, including Xiang, Zishui, Yuanshui, Lishui, Hanshui, and Gan. In 1998, a flood in the same area caused billions of dollars in damage; 2,039 km2 of land flooded. The flooding affected more than 2.3 million people, killing 1,526 people. [104] At the beginning of August 2009, the largest flooding of the past five years passed through the barrier. The dam is limited to water flow at 40,000 cubic metres (1,400,000 cu ft) per second until 31 December 2009. A total of 4.27 km3 (1.02 cu mi) of flood water was captured and the river flow was reduced to as much as 15,000 m3 (530,000 cu ft) per second. [71] The dam empties the reservoir every year between December and March during the dry season. [105] This increases the flow rate of the river and provides fresh water for agricultural and industrial use. It also improves delivery conditions. The water level drops from 175 to 145 meters,[106] in the preparing for the rainy season. The water also powers the Gezhouba Dam downhill. Since filling the reservoir in 2003, the Three Gorges Dam has delivered an additional 11 km3 of fresh water during the dry season to later towns and farms. [107] During the 2010 floods in southern China, the influx into the Three Gorges reached a peak of 70,000 m3/s, which exceeded the peak of floods in the Yangtze River in 1998. The dam's reservoir rose nearly 3 metres in 24 hours and reduced outflows to 40,000 m3/s (1,400,000 cu ft/s) in downstream emissions, effectively mitigating the severe effects on the central and lower rivers. [108] [109] Navigating the dam locks ship locks into river traffic to bypass the Three Strait Dam, in May 2004 at the other end of three gorges dam locks; in the background of the bridge, the installation of ship locks increases river shipping from ten million tonnes to 100 million tonnes per year; as a result, transport costs are reduced between 30% and 37%. Transportation will be safer as the gorge is notoriously dangerous to navigate. [82] Two series of locks are installed near the dam (30°50′12N 111°10E / 30.83667° N 111.01944° E / 30.83667; 111.01944). Each consists of five stages, the transit time is about four hours. The maximum size of the vessel is 10,000 tons. [110] The locks are 280 m long, 35 m wide and 5 m deep (918 × 114 × 16.4 feet). [111] [112] It is 30 metres longer than the St. Lawrence Sea, but half as deep. Before the construction of the dam, the maximum freight capacity in the Three Gorges area was 18,0 million tonnes per year. Between 2004 and 2007, a total of 198 million tonnes of goods passed through the floodgates. The river's freight capacity has increased six times transport costs have been reduced by 25%. The total capacity of the locks is expected to reach 100 million tonnes per year. [82] These locks are stair locks, which serve as both the upper and lower gates of the inner lock gate pairs. The gates are of the vulnerable articulated type, which, if damaged, temporarily makes the entire flight unusable. Since there are separate locks for upstream and downstream traffic, this system is more water-saving than two-way stair locks. Ship lift The boat lift, a kind of elevator, can lift ships up to 3,000 tons, a fraction of the time to pass through the stair locks. Next to the canal locks there is a boat lift, a kind of elevator for boats. The ship lift can lift ships up to 3,000 tons. [15] [113] The vertical distance travelled is 113 m,[114] and the size of the boat lift basin is 120 m × 18 m × 3,5 m × 3,5 × × metres. The boat lift takes 30-40 minutes to cross, as opposed to 3-4 hours crossing the locks. [115] One complicating factor is that water levels can change dramatically. The ship's lift should operate even if the water level varies from 12 meters (39 feet) on the lower side and 30 m (98 feet) on the upper side. The ship's elevator design uses a spiral gear system, climb or descend to a toothed rack. [116] The ship's elevator was not completed when the rest of the project was officially announced in November 2006 [117] [118] In November 2007, local media reported that construction of the shiplift had begun in October 2007. [35] In February 2012, Xinhua reported that the four towers supporting the ship's elevator were almost complete. [119] According to the report, the towers reached 189 metres from the expected 195 m, the towers by June 2012 and the entire boat lift in 2015. As of May 2014, the boat lift is expected to be completed by July 2015. [120] It was tested in December 2015 and announced in January 2016. [15] Lahmeyer, the German company that designed the ship's elevator, said it would take less than an hour for a ship to cross the elevator. [116] According to an article in Steel Construction, the actual lift time will be 21 minutes. [122] He says the expected size of the 3,000-ton (3,000,000 kg) passenger ships designed to carry the boat lift basin will be 84.5 and 17.2.2 meters (277.2 feet × 56.4 feet × 8.7 feet). The moving weight (including balances) shall be 34 000 tonnes. The cable car was completed in July 2016, the first cargo ship was raised on July 15, the lift time was 8 minutes. [123] The Shanghai Daily reported that the first use of the cable car in service in 2016. [124] Port railways are also planning to build short-term railways. in the dam area. Two short railway lines, one of which is on both sides of the river, shall be built. The 88 km long northern port railway (l坝坝) is located under Yichang from the Taipingxi port facility on the north side of the Yangtze (l, from the dam upwards, through Yichang Keleti Railway Station to the Baiyang Tianjiahe port facility(Yiyang 镇). [125] The 95 km long southern port railway will坝 run from Maoping (the dam upwards) from Yichang South Railway Station to Zhicheng (jiaozuo-liuzhou railway). [125] Preliminary work on both future rail routes began at the end of 2012. [126] The relocation of residents Although the large size of the reservoir caused a huge relocation along the river, it was considered justified by flood protection for the communities down the production and distribution chain. [127] In June 2008, China replaced 1.24 million inhabitants (ending with Gaoyang in Hubei Province) as 13 cities, 140 towns and 1,350 villages flooded or partially flooded by the reservoir,[128][129][130] about 1.5% of the province's 60.3 million inhabitants and 31.44 million in chongqing municipality. [131] Approximately 140,000 inhabitants were transferred to other provinces. The transfer was completed on 22 July 2008. [129] According to some reports in 2007, chongqing municipality will encourage an additional four million people to move from the dam to chongqing's main urban area by 2020. [133] [134] [135] However, the municipality explained that the relocation was due to urbanisation rather than the dam and that the persons concerned involved other areas of the municipality. [136] Funds for the relocation of 13,000 farmers to Gaoyang are said to have disappeared after being sent to the local government, leaving residents without compensation. [137] Other influences Culture and Aesthetics The 600 km long reservoir flooded about 1,300 archaeological sites and changed the appearance of the Three Gorges as the water level rose above 91 meters. [138] Cultural and historical relics are moved to a higher level because of their discovery, but the floods inevitably oversreare undiscovered relics. Some sites could not be moved because of their location, size, or design. For example, the hanging coffins place high in the Shen Nong Gorge part of the cliffs. [139] National Security The U.S. Department of Defense has reported that supporters of strikes against the continent in Taiwan apparently hope that they are merely a credible threat to China's urban population or high-value targets, such as the Three Gorges Dam, deter Chinese military coercion. [140] The idea that the Taiwanese army was trying to destroy the dam provoked an angry reaction from mainland Chinese media. People's Liberation Army General Liu Yuan quoted in China Daily Daily that the People's Republic of China would be seriously wary of the threats posed by Taiwanese independence terrorists. [141] The Three Gorges Dam is a steel concrete gravity barrier. Water is held back by the innate mass of each section of dam. As a result, damage to each section should not affect other parts of the mother animal. However, damage to the entire dam through means such as rockets can cause flooding along a large area of the Yangtze River due to overflow. [142] Structural integrity refers to days after the reservoir was first replenished, with approximately 80 hairline fractures observed in the structure of the dam. [143] [144] [145] However, the three gorges dam's 163,000 concrete units met the quality tests and the deformation was within design boundaries. A team of experts gave the project a good quality assessment. [146] A German-based hydraulic engineer, Wang Weiluo, who has been critical of the Three Gorges Dam project for years, claims that financial abuse by related government bureaucrats and rushed construction work have led to structural weaknesses that could cause the dam to fail due to the foundation's leak. [147] In 2019[148][149][149][150][151] photographs on Google Earth showing a serious deformation of the structure circulated rumors on social media of the possible collapse of the dam. Chinese officials rejected the allegations and reiterated an earlier assessment of the safety and structural integrity of the dam. Rumours resurfaced in 2020,[150][152] and a Chinese hydrologist based in Germany warned of an impending collapse. [152] [153] 2020. Chinese official media mentioned the displacement, leakage and deformation of the dams of the three gorges. In a July 21, 2020 report, China's Global Times criticized Western media reports for its coverage of the Three Gorge Dam report, accusing them of jumping on bias, taking the reports out of context and lacking basic physics knowledge. The report explained that the deformation was to be a traditional engineering concept and never claimed that the dam was not structurally. [154] [155] Longitudinal profile of upstream dams in the upper Yangtze River In order to maximise the usefulness of the Three Strait Dam and reduce the settling of the jinsha river, the upper river yangtze river, authorities plan to build a series of dams on jinsha, including Wudongde Dam, Baihetan Dam, and the now completed Xiluodu and Xiangjiaba dams. All of these four dams, 38 500 MW[156] is almost double the capacity of the Three Fold. [157] Baihetan is under development and wudongde is seeking government approval. There are eight more dams in the middle of the Jinsha, and eight more against the js. [158] See also China Portal Renewable Energy Portal Energy Portal Water Portal Water Portal Baiheliang Underwater Museum Energy policy of China List of largest power plants in the world List of largest hydropower plants list power plants in China List of dams and reservoirs in China Three Gorges Liang Weiyan, one of the leading engineers who designed water turbines for dam references

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