



東電勘察海底 續推福島核污水排海

TEPCO seabed survey takes forward discharge of Fukushima wastewater

原文

下文摘錄自11月28日香港《文匯報》：

日本政府早前決定將福島第一核電站 (Fukushima Daiichi Nuclear Power Station) 的核污水排放入海，遭受國際社會譴責和質疑，然而負責管理核電站的東京電力公司 (Tokyo Electric Power Company)，仍繼續推進污水排海準備工作，執意展開海底地質調查 (geological surveys)，為建設用於排放福島核污水的海底隧道 (undersea tunnel) 作準備。由於福島第一核電站仍然存在不少安全隱患，例如控制核污水的凍土擋水牆 (frozen soil wall) 可能局部融化，以及員工疑似吸入放射性物質 (radioactive substances)，反映東電管理出現問題，能否妥善處理核污水的能力成疑。

福島第一核電站內現保存約130萬噸核污水，全部儲存在大型儲水罐中，日方準備將核污水過濾 (filter) 並稀釋 (dilute) 後排放入海。東電計劃在2023年初完成建設長約1公里的海底隧道，屆時會將稀釋的核污水，通過海底隧道排放入太平洋 (Pacific Ocean)。

由於海底隧道需貫穿堅固的岩床 (bed-rock)，故東電在工程啟動前，對海底地質等情況展開調查，首先利用探測器檢視海床 (seabed) 是否有障礙物。海底調查原定今年9月進行，但需向當地政府部門解釋相關工作，導致調查開始時間延遲。

核污水排海計劃可能持續數十年，福島居民擔心此舉損害當地形象 (image)，福島縣漁業協會 (Fukushima fisheries association) 一直強烈反對核污水排放入海。由於核污水排海關乎全球海洋生態環境安全及各國人民生命健康，國際社會對此普遍感到憂慮。

東電管理不善 (mismanagement)，亦令外界對核污水排放計劃增添憂慮。東電在2017年3月於福島第一核電站1號機組安全殼 (containment vessel) 底部，發現大量估計為熔落核燃料的堆積物，原定前年向安全殼內部投放機械人，希望掌握這些燃料碎片的狀況。不過在遭遇現場輻射量 (radiation level) 上升等問題後，投放機械人的工作需延至明年1月展開。

東電亦沒有嚴格監管核電站員工的工作環境。為防止核污水淡水化裝置 (nuclear sewage desalination device) 出現凍結 (freezing)，兩名員工日前在有暖氣和空氣循環裝置的設施內更換管道。但他們的鼻腔 (nasal cavity) 內其後附着放射性物質，估計遭受微量輻射。雖然兩人根據規定穿上輕便裝備，包括工作服和防塵口罩等，但東電在事發後認為，應改為讓他們戴覆蓋全臉的口罩並穿上防護服 (protective clothing)。

至於同在現場的另外兩名男員工，他們的工作服上也附有放射性物質，可能是更換管道時沾有放射性物質的灰塵等飛揚所致。



● 福島核電站

資料圖片

Q&A

1. 福島第一核電站事故於何時發生？
2. 福島縣附近地區曾被禁漁多少年？
3. 該核污水排放計劃預計為期多久？
4. 該計劃將受哪個國際機構監管？
5. 哪個環保組織曾表示放射性物質會危害水質和食物鏈？

1. 2011年3月11日 2. 10年 3. 30年 4. 國際原子能總署 (International Atomic Energy Agency) 5. 綠色和平 (Greenpeace)

Answer

譯文

The Japanese government's earlier approval of a plan to discharge contaminated water from the destroyed Fukushima Daiichi Nuclear Power Station into the sea was condemned and questioned by the international community. However, the Tokyo Electric Power Company (TEPCO), which operates the power plant, continues to take forward the preparation work and insisted on conducting geological surveys several days ago for construction of an undersea tunnel designed for the radio active waste discharges. The power plant is still full of many potential security risks, such as the possibility of partial melting of the frozen soil wall that reduces the pollut-

ed water and the suspected inhalation of radioactive substances by employees, reflecting the management problems and giving rise to a doubt of whether the company is capable of handling the wastewater properly.

Nearly 1.3 million tonnes of contaminated water are now stored in huge tanks at the Fukushima Daiichi Nuclear Power Plant, and the government plans to filter and dilute the wastewater and release it into the sea. TEPCO will build an approximately 1 kilometer-long undersea tunnel by 2023, and the treated but still radioactive water will be released into the Pacific Ocean through the undersea tunnel by then.

As the tunnel needs to penetrate through the bed-rock, TEPCO needs

to conduct a sea bed survey before the start of the project, and it had conducted a magnetic probe to check for seabed obstacles few days ago. The geological survey was originally planned to be launched in September, but it was time-consuming to brief local authorities, which caused a delay in conducting the works.

The plan to discharge the polluted water into the sea may continue for decades. The local residents are worried that such initiative will bring about negative impact to the image of the prefecture, and the Fukushima fisheries association has even expressed strong opposition. As the radioactive materials will affect the global marine ecological environment and bring fatal health risks to the human body, many coun-

tries around the world generally expressed serious concerns.

TEPCO's mismanagement has also led to more worries among the international community over the wastewater discharge plan. The company found a large amount of deposits suspected to be molten nuclear fuel at the bottom of the power plant's unit 1 containment vessel in March 2017. It was originally scheduled to send robots into the containment vessel with an aim to locate the molten fuel in the unit. Yet, due to the rising on-site radiation levels, the launch of robots has to be postponed to January next year.

Besides, TEPCO does not strictly supervise the working environment for employees of the nuclear power plant. To prevent freezing of the nuclear sew-

age desalination device, two employees of the company performed pipeline replacement operations in facilities with heating and air circulation devices. Yet, it was later revealed that radioactive substances were attached to their nasal cavity that they might have received trace amounts of radiation. Although the two staff wore light equipment as required, including work clothes and dust masks, TEPCO considered that they should have worn gas masks covering the entire faces and protective clothing instead. Radioactive materials were also attached to the work clothes of two other on-site male employees, which might be caused by flying dust that was stained with radioactive materials during the maintenance works.

孩童扭計哭鬧 驚「暗黑版聖誕老人」

恒 大英萃

隔星期一見報

You better watch out
You better not cry
You better not pout
I'm telling you why
Santa Claus is coming to town

這首膾炙人口的聖誕歌，相信讀者一定聽過，可是，各位有沒有仔細留意歌詞？既然 Santa Claus (聖誕老人) 來派禮物了，大家應該高高興興才對，為什麼要 watch out (當心)，better not cry (最好別哭鬧) 又 better not pout (最好別噘嘴) 呢？難道說，聖誕老人會懲罰哭鬧的孩子嗎？原來，在歐洲的古老傳說中，聖誕節不單只有和藹可親的聖誕老人，還有人見人怕的「暗黑版聖誕老人」。

紅衣主教悄悄雪中送炭

蓄着白鬍鬚、身穿紅棉襖、形象溫暖親切的聖誕老人，原來並非純屬虛構，他的原型人物本名為 Saint Nicholas (聖·尼古拉斯)，他並非芬蘭人，而是公元三世紀一位來自土耳其的紅衣主教，為人善良慷慨，習慣雪中送炭，每年12月總會悄悄探訪貧苦大眾，向有小朋友的草根家庭派發金錢、禮物和糖果。

他於西元343年12月6日過世後，天主教徒為了紀

念他，就把12月6日定為 St. Nicholas Day (聖·尼古拉斯節)，大人會模仿聖·尼古拉斯大派禮物，小朋友則會收到心愛的玩具。其後，聖·尼古拉斯的事跡傳遍歐美，成為了家喻戶曉的傳奇人物。

1809年，美籍荷蘭作家 Washington Irving 出版了饒有趣味的《荷蘭人的紐約歷史》(Knickerbocker's History of New York) 一書，將聖·尼古拉斯的悄然探訪寫成為成煙囪進來送禮物的聖誕老爹 (Father Christmas)；後來又有 William B. Gilley 在1821年出版的童詩《小孩的朋友》(The Children's Friend) 和 Clement Clark Moore 的童謠《這是平安夜》(Twas The Night Before Christmas)，把聖·尼古拉斯描繪成會乘坐飛天馴鹿雪橇、爬煙囪進屋派禮物給小朋友的聖誕老人。

羊角惡魔教訓頑皮小孩

至於要大家「better not cry」和「watch out」的那位暗黑版聖誕老人，其實是一名叫坎卜斯 (Krampus) 的惡魔，在芬蘭、德國和奧地利等地都有記載。相傳牠長有羊角，常戴着樹皮面具，披着獸皮、手執木條，通常在聖誕老人送完禮物之後，就會找上門來討食物和物資，當牠看見頑皮的小朋友，就會把他們抓起來鞭打，如果小朋友不聽教訓扭計哭鬧，坎卜斯就會把他們抓回山洞煮來吃，很是嚇人。美國童書作家 Dr. Seuss (蘇斯博士) 筆下的經典反派角色 Grinch (聖誕怪怪傑)，就是根據坎卜斯塑造出來的。

● 曹穎賢博士
香港恒生大學英文系副教授

香港恒生大學
THE HANG SENG UNIVERSITY
OF HONG KONG

趣談英語

逢星期一見報

BRITISH COUNCIL

LearnEnglish Teens

Writing skills practice: A social networking site

1. Check your understanding: true or false
Circle True or False for these sentences.

1. Kenta is from Australia. True False
2. Megan is older than Kenta. True False
3. Megan likes water sports. True False
4. Kenta's got blond hair and dark brown eyes. True False
5. Both Kenta and Megan like karate. True False
6. Kenta likes playing soccer. True False

Writing practice

Write a message to introduce yourself on a social networking



Top Tips for writing

1. Use capitals for towns, cities and countries.
2. Use capitals for nationalities and languages.
3. Use capitals for names.

Answers Check your understanding: true or false
1. False 2. True 3. True 4. False 5. True 6. True

To find more English language activities visit www.britishcouncil.org/learnenglishteens

© British Council 2020