

Report on the Analysis of Business Risk Issues

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ABSTRACT

Risk management in the business sector has recently become a major trend. This paper compares and analyzes the crisis management of The Japanese and Chinese governments in the Fukushima nuclear leakage accident by using Augustine's six-stage theory of crisis management. Conclusion The relatively effective risk management steps are analyzed. The innovation of this paper lies in the comparative analysis of the different results brought by the different measures taken by the two countries in different stages of crisis management.

Keywords: Business Risk, Crisis Management, Fukushima Nuclear Power Plant.

1. INTRODUCTION AND AIMS

With the continuous expansion of society, not only commercial organizations, public institutions and governments are also facing the harm of external environment. In this context, the understanding of risk management by governments and public institutions, and their ability to identify and limit problems, is crucial. When governments and public institutions fail to manage risks, as they did in The Fukushima nuclear disaster in Japan in 2011, it can have a profound negative impact on national health.

This paper will expound on the Fukushima nuclear power plant leakage accident of the main problems and the analysis of failure in risk management measures, and to explore risk management failure of the main reasons behind, in order to prevent the recurrence of a worldwide disaster like this, and the residents who were negatively affected had not been properly dealt with in the situation. According to Augustine's Six Stages of Crisis Management, the report will provide solid factual evidence at the beginning and then analyze the reasons for failure one by one. Especially in the preparation of crisis management, identification of crisis, containment of crisis, and crisis resolution of the four stages, the Japanese government had crisis management, including ineffective follow-up maintenance ineffectively. One of the most critical failures was the irretrievable health impact of the Japanese government's largely ineffectual follow-up efforts on people living in the Fukushima region of Japan. The materials used in this report are announcements from traditional institutions, media

reports, and journals. The report will also compare the Chinese government's strong response to the outbreak and its handling of affected Chinese residents.

2. RISK MANAGEMENT ISSUES AT FUKUSHIMA DAIICHI: A CASE STUDY

In this section, we will explore the two most significant issues in the entire disaster and how they affect the lives and deaths of nearby populations, based on the Fukushima nuclear leakage accident in Japan. During the COVID-19 period, the report will also investigate the root cause of the problem and compare the steps taken by the Japanese government with those done by the Chinese government to preserve the health of the Chinese people.

2.1. Issue 1: Lack of a complete and effective risk prevention and control system

The Japanese government and Tokyo Electric Power (Tepco), the operator of the Fukushima Nuclear Power Plant, did not have an adequate risk management strategy, according to Augustine's second stage of Six Stages of Crisis Management, preparing for Crisis Management. Despite the crisis initially is caused by the tsunami and earthquake in Japan. However, the Japanese government and Tepco Fukushima in Japan have several plants, and if a nuclear power plant detonated, it will have a significant influence on the health of the surrounding inhabitants since they are not equipped with sufficient preventive measures. More seriously, the release of harmful radioactive materials is a potential threat to people's health around the world.

2.1.1. Facts

The following facts demonstrate that the people living near the Fukushima nuclear power plant have not been handled correctly.

First, 2,313 people evacuated from Fukushima prefecture have died as a result of the disaster, according to the World Nuclear Association. The death toll from the earthquake and tsunami reached 19,500 (World Nuclear Association, 2021) [1]. And the Japanese government initially ordered residents within three kilometers of the plant to evacuate, but the radioactive leak has spread to at least 20 kilometers. Contrary to the Japanese government's request, the United States Government eventually ordered all United States residents within 80 km of the facility to leave (U.S. Embassy & Consulates in Japan, 2013) [2]. Second, and more seriously, the Globe's Fukushima report says that people living near Japan's nuclear power plants have been deprived of daily items such as food, medicine and other necessities because the government has forced them to stay indoors. In addition, while some iodides can reduce the potential risk of nuclear exposure, the Government's failure to inform the Japanese population of the effects of iodides, let alone provide guidance on their purchase, has resulted in the local population missing the most effective opportunity to reduce radiation damage.

2.1.2 Analysis of Issue 1

Given the possibility that residents in the plant's vicinity would be exposed to significant levels of radiation, the Japanese government and the Fukushima nuclear power plant are lacking in effective risk information and awareness. As a result, when the nuclear tragedy struck, the Japanese authorities advised residents in the region to remain indoors, and the entire evacuation plan proved to be incredibly difficult. For example, the Japanese government failed to visit the site for timely inspection and investigation and did not gather reliable information about the nuclear radiation-affected land. As a result, the evacuation strategy lacked a clear boundary of the evacuation zone. Namie, in Fukushima Prefecture, was eventually unable or mistakenly instructed to flee to a location with still high radiation levels. At the time of the explosion, the community of Okuma had gotten no notification about the disaster or evacuation. According to information from Akiyama et al. (2012), residents living 20 to 30 kilometers from the nuclear explosion were only told to seek shelter indoors on March 14, 2011, four days after the accident [3]. Compared to the US government's plan to require Americans residing in Japan to stay 80 kilometers away from the site of a nuclear accident, Japan's proposal appears premature.

The second risk management failure was the Japanese government's inability to provide inhabitants

with a comfortable temporary living environment. According to Fukushima on the Globe (2013), the initial refuge in the coastal region near Fukushima Daiichi is a playground, with residents sleeping on the ground on sleeping mats. There is no privacy for women, children, or the disabled. A hundred thousand people had been evacuated as of December 2011 [4]. The Japanese government could have managed the evacuees' resettlement better. For example, they can build emergency shelters during the risk prevention phase, but the Japanese government did not understand the need for risk prevention. As a result, when residents face difficulties, the Japanese government is helpless to intervene.

2.1.3. Comparison to China's response to the COVID-19 case

When the epidemic first broke out in Wuhan, China, in early 2020, the Chinese government acted rapidly to put a stop to it. According to a BBC report dated February 2, 2020, 300 people had died and 14,000 were infected in China as a result of COVID-19. However, in only two weeks, the Chinese government acted fast, constructing a 1,000-bed Fire God Hospital in Wuhan, China's hardest-hit city. Five days later, the 1,500-bed Thunder God Mountain Hospital opened [5]. Leishenshan hospital treated a total of 2,011 patients in just two months. Furthermore, from the beginning of the pandemic in February, the Chinese government has undertaken a city-level lockdown policy in Hubei Province. In other regions where the outbreak is not as serious, certain measures have been taken to lock down the city or province, such as increasing community oversight and paying persons who report noncompliance with the rules (Feng & Cheng 2020) [6]. There are also links to update the data on social media sites like Weibo and Moments to track the number of COVID-19 infections in real-time. QR codes are put at the entrances of each location to monitor the flow of people in real-time, and security officers are stationed to watch everyone scanning and filling in their personal information before entering.

2.2. Issue 2: Safety Instructions was not implemented properly

According to Augustine's six stages of crisis management, crisis containment and crisis resolution are two key elements of risk management. The most critical element of these two measures is to contain the adverse effects of the crisis as soon as possible. However, the Japanese government made the problem worse by squandering a golden opportunity for risk assessment and mitigation.

2.2.1. Information

Willyard (2011) found that apart from terrorism, nuclear power plant disaster was the main cause of acute radiation syndrome (ARS) [7]. In addition, according to the radiation level map (Figure 1) drawn by the Accident Investigation Committee of Fukushima Nuclear Power Plant (2011), the radiation level near the No. 4 monitoring station of Fukushima Nuclear Power Plant was in a rising state on the morning of March 13, 2011 [8]. Unfortunately, the Japanese government has done little to prevent the adverse effects of high doses of radiation, and there are currently no approved drugs for extreme radiation sickness. In addition, the World Nuclear Association updated 2021 on Radiation Exposure, on March 16, 2011, Japan Nuclear Safety Commission advised local authorities to guide evacuees under 40 years old to take stable iodine, To prevent the ingestion of radioactive iodine-131 through a medium such as milk. Even if pills and syrups have been pre-placed in evacuation centers, it is not clear whether this has been implemented [9]. So despite the NRC's efforts, people living in shelters still don't know what radiation is or how it could damage their lives and health because of the poor implementation of the order. According to a March 4, 2021 science article by Dennis Normier, Fukushima shelter residents are not worried about their health; Instead, they worry about whether staying in shelters will keep them and their children safe (Normile 2021)[10]. By September 2014, five of the 754 Fukushima plant workers who received medical treatment had died, and 12 had been contaminated with radioactive material by March 2011. Between March 11, 2011 and August 31, 2013, the radioactive material in the employee's body is shown below in Figure 2. Data come from Japanese Ministry of Health, Labour, and Welfare[11].

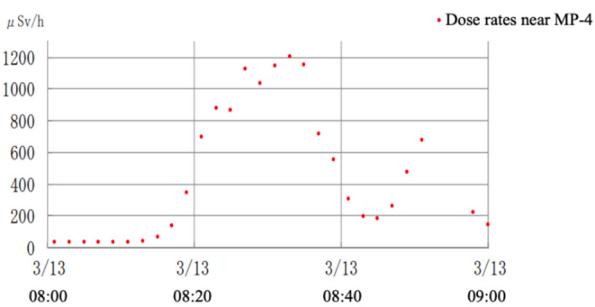


Figure 1 Does rates behavior near the monitoring post 4 (8:00 – 9:00 March 13) Created by based on TEPCO’s “Measurement Data at Fukushima Dai-ichi NPS site” (May 2011)

	TEPCO	Contractor
<10mSv	2034	17164
10-50mSv	1144	7470
50-100mSv	553	794
100-150mSv	118	20
>150mSv	31	4

Figure 2 Radiation doses and numbers of emergency and recovery workers at the Fukushima Daiichi Nuclear Power Plant (From March 11, 2011 to August 31, 2013)

2.2.2. Issue 2 Analysis

Tepco could have corporated with social media and sent out announcements immediately after the nuclear explosion to inform the affected people about the dangers of nuclear fallout and the most appropriate methods to minimize the threats. Unfortunately, the Japanese government failed to do so. As a result, Japanese citizens in emergency shelters are unaware of radiation hazards, and they are more concerned about their safety than their health. It had been six months since the nuclear catastrophe when Tepco stated in the Japanese Government's Additional Report to the IAEA in September 2011 that it had experimental detection evidence to back up its radiation and saltwater pollution exposure. According to the World Nuclear Association, the majority of the hazardous radioactive material, including Chernobyl, was discharged in March, demonstrating that Japanese authorities failed to limit the blast's effects. In 2015, Japan's nuclear leak of harmful radioactive substances was discovered, and the ramifications are terrifying. It was reported that Japan's nuclear leak of harmful radioactive substances had contaminated seawater in Vancouver, across the Pacific, Washington, and California, among other places, and that radiation had affected the health of people in disaster areas. And the nuclear pollution had likely spread globally as a result of the flow of water (Sherwood 2015) [12].

Second, during the quarantine stage, the Japanese government assumed that all the radioactive particles were traveling in concentric rings. The assumption was misleading because air currents impact radioactive particle diffusion (Pöllänen et al. 1995) [13]. People in the affected areas also did not get immediate updates on how Tepco and the Japanese government planned to evacuate them. However, they could have utilised social media to help individuals understand how to escape and avoid risk. For instance, multiple studies have shown that utilising iodide at the proper time can successfully reduce the health risk provided by hazardous radioactive substances. Nonetheless, the Japanese government has been slow to publicise this policy. As a result, the Japanese government failed to provide timely significant solutions to the situation.

2.2.3. Reaction of Chinese Government to COVID-19

In March, at the height of China's epidemic, 67,799 persons were infected in Hubei province. According to xinhuanet.com, the Chinese government ordered 346 medical teams from throughout the nation, totaling 42,600 medical workers, to carry out medical rescue operations in Hubei province in March 2020, resulting in a scarcity of medical equipment and human resources to cope with the pandemic. Since around March, the worst-affected provinces had received adequate medical and material assistance, and the number of infected people in the country had been effectively controlled, due to extremely swift and orderly risk management.

3. CONCLUSION

To conclude, the 2011 tragedy in Japan began as a succession of natural disasters. This purportedly natural disaster is an artefact of managers' and authorities' lack of responsibility and capability. It would be unthinkable for the Japanese government and Tepco to face another crisis as severe as the one at Fukushima if they could follow Augustine's Six Stages of Crisis Management prior to the tragedy. The horrifying incident serves as a reminder to businesses that risk prevention and management is an important and required component of their operations, yet it is often overlooked or devalued.

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