

Note:

# Structure of Rumor Disaster – On Fukushima Daiichi N.P.P. Unit 4 –

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The misleading information spreads into the society, the people move on the basis of it. This mechanism, what I call “rumor disaster” is examined in this note. Authorities, specialists, intellectuals, and so on, often-times, might take part in this process. In this note, the spent fuel storage pool of Tokyo Electric Power Fukushima Daiichi N.P.P. Unit 4 is the case used for discussion because there are relatively abundant materials and the resulting impact to the society is very big.

**Keywords:** rumor, Fukushima Daiichi N.P.P. Unit 4, U.S. Nuclear Regulatory Commission, Ooi N.P.P. Units 3 and 4, court

## 1. Prologue

The following description can be observed at an article [1] in the Journal of the Atomic Energy Society of Japan (AESJ) *ATOMOS*: “It was nothing but a luck that Japan could escape “death” despite the pool of Unit 4 was on the edge of collapse.”

It was a great surprise for me to read this description, and asked the office of ASEJ immediately to relay the following two questions to the author of the *ATOMOS* article. The questions were (1) What is the basis of this argument? (2) Are the pools of Units 1, 2, and 3 unsafe now? The answer given by the author was “it is my manner that the questions to the solicited manuscript are refused.”

This answer made me to ask to the chief editor of *ATOMOS* next question: “Is it appropriate the question-answer system for the comment by readers?” Through the discussion between the chief editor and myself, I had a chance to learn about the 2014 court decision [2] about Ooi Nuclear Power Plant (N.P.P.) Units 3 and 4 operation – prohibition claim case.

After investigating matters related to the legal issues, Fukushima Daiichi N.P.P. Unit 4 seems to me that it is a good example about how the misleading information influence the society.

## 2. An Event That Is Complex and Hard to Understand

Around 14:46, on March 11th, 2011, the 2011 Off the Pacific Coast of Tohoku Earthquake occurred. At that time, Tokyo Electric Power Fukushima Daiichi N.P.P. Unit 4 was under regularly scheduled inspection, and all the fuel was in the spent fuel storage pool (SFP) [3].

At a little after 6 o'clock on March 15th, a big crashing sound and shaking occurred, and damages at the roof and 5th story of the Unit 4 reactor building were observed [3]. Even though it was clear that an explosion occurred at the top story of the building as a result, the cause of this explosion was rather difficult to be explained because the Unit 4 had not been working under inspection.

It was hydrogen gas produced in the Unit 3, accompanying with the damage of the core, flowed into the Unit 4 and exploded. This is a widely accepted explanation at the present. It took a long time before the cause of the explosion in the Unit 4 was understood.

The explosion in the Unit 4 was an event that was complex and hard to understand not only for laypersons but also for experts and participants.

## 3. Information from U.S.

In reference to the explosion in the Unit 4 which was under regularly scheduled inspection, it spreads a wrong message that the water in the SFP of the Unit 4 had been empty or not enough. The source of this wrong information was U.S. Nuclear Regulatory Commission (NRC) [4].

NRC dispatched the supporting team to Japan at the very early stage [5]. This wrong information resulted in “80 km evacuation recommendation” which was issued by U.S. government to the American citizens [4]. This recommendation seems to be the result of an integrated judgment based on the various information obtained not only from NRC, but also from the reconnaissance data by unmanned plane “Global Hawk,” which was sent to Tohoku area by the request of Japanese government, the data measured by the aircraft carrier “Ronald Reagan” which was deployed off the pacific coast of Miyagi prefecture, and so forth.



In response to a Japanese article in which “80 km evacuation recommendation” was described, I asked to the author to reveal the evidence for this recommendation [6].

The author just said that he has enough evidence [6]. In Japan, the information from U.S. seems to be easily believed by the people.

#### 4. A Strange Material

There exists a 15-page MS PowerPoint presentation which involves several strange points [7]. In the first page of this presentation, there is a note that “This information was provided from the Cabinet Office as on January 30th in 2012.” This is so called “the worst scenario” by prepared the chairman of the Japanese Atomic Energy Commission (JAEC).

According to the official record of hearings by governmental investigation commission on the accident [8], the author of this material said “I compiled this material just for my eyes, not as a chairman of JAEC, but as an individual with no intention to be published.”

Later this material was quoted in a court as follows [2]. “The chairman of JAEC considered the possibility of issuing an evacuation recommendation to the residents within a radius of 250 km.” The materials in the form of MS PowerPoint presentation [7] might allow the possibility to be interpreted as cited above.

When the material is spread against author’s will, when it is interpreted by mistake not as originally intended, or when it is quoted in an arbitrary fashion, there left no way for the author to take. It is a very difficult problem.

Anyway, materials like this becomes a seed of the rumor. It has a big influence as an evidence even on a court.

#### 5. Overcountermeasures

Strengthening work [3] to the SFP of the Unit 4 after the earthquake might be misunderstood as a cover-up not to reveal some unsafe status. General public may wonder if there were some peculiar troubles about the SFP of the Unit 4 due to the earthquake shaking and the explosion at the upper story. Since this structure had survives the truly strong earthquake shaking, the reliability of this structure should be higher than those structures without experience. It is my conclusion that it was not necessary to strengthen the Unit 4. This is another case where the misleading information from U.S. might have a big influence.

#### 6. Court

The rumor has a big influence on a court decision, and the court decision spreads into the society as a seed of a rumor. Gradually, differences between rightness and wrongness become unclear. In the structure of the rumor, influence of the court is quite big.

In the decision [2] at Fukui district court, we can

find the following description “It is only an unexpected stroke of good luck that the SFP of the Unit 4 was saved from devastating state.” There were, at least, seven units at Kashiwazaki Kariwa N.P.P., three units at Onagawa N.P.P., four units at Fukushima Daini N.P.P., and five units at Fukushima Daiichi N.P.P. which had suffered the strong earthquake shaking, at almost same time as the Unit 4 or earlier. If there was no large difference between the Unit 4 and these units in terms of the structure of SFPs, all the pools should have been unbelievably lucky.

AESJ expressed an opinion [9] about this court decision [2] “It had some fear to lead the Japanese people to very serious misunderstanding.”

There exists another problem about this decision [2]. For example, at least, an important academic paper [10] was neglected. There are many rudimentary and essential mistakes in this decision [2] and related books [11, 12]. I will discuss those problems on another occasion.

#### 7. Epilogue

Misleading information, unexpected interpretations, mere assumptions, etc. spread into the people, while being associated with authorized titles such as U.S. NRC, Chairman of JAEC, Journal of AESJ, etc., and have big influences even on the court. Those are linked together as a spiral. This is a rumor disaster.

One brake against this chain reaction is to discuss whether it is right or not. About the scientific papers, discussion systems are established which help to increase social credibility of academic papers. To refuse academic questions is equal to self-complacence which would be the base of rumor disaster.

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- K. Takiguchi, “Non-linear Structural Mechanics: Multi-axial Behaviors of a Structure and the Theory of Plasticity,” Suurikougaku-Sha, 2002.

**Academic Societies & Scientific Organizations:**

- Architectural Institute of Japan (AIJ)
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