

Research Study on Typical Feature of the Media Coverage on Nuclear Accidents in the National Newspapers in Japan

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Abstract

This study focuses on survey of the characteristics of the media coverage on three well-known nuclear accidents. From a quantitative standpoint of the media reporting, it was revealed that the amount of the articles in the surveyed national newspapers tend to increase soon after accidents happen. Plus, as a qualitative research the author interviewed three leader writers, who suggested that the Japanese nuclear industry should prepare to distribute information more timely and sufficiently. They also answered the PR staff needs to contact journalists regularly in order to recognize their awareness and earn their trust.

1. The media coverage on nuclear energy in Japan

1.1 Background of the research study

For more than a generation of active research we have found several hypotheses about the effects and influence of mass communication. For example, the agenda-setting is one of the most well-known hypotheses as McCombs and Shaw [1] wrote “This ability to affect cognitive change among individual is one of the most important aspect of the power of mass communication”. McQuail and Windahl [2] referred to DeFleur’s idea [3] and mentioned that the media do not only act directly on individuals, but also affect the culture, the stock of knowledge, the norms and values of a society.

Taking into account the effect of the mass media, it is considered that the mass media has the potential to effect the utilization of nuclear power in Japan. This research study focuses on the previous media coverage published in the Japanese national newspapers¹⁾ and is to illustrate how the Japanese national papers distributed news especially on the occasion of accidents and troubles in nuclear facilities. This study is expected to help find tendency of the Japanese news coverage on nuclear accidents and troubles. Plus, it is hoped that the knowledge gained in the research of the Japanese national newspapers will contribute to be peace of reference material in the study of the media coverage on nuclear accidents in other countries in the future.

1.2 The positive and negative media report on nuclear energy matters in Japan

The national newspapers distribute a broad range of information about nuclear energy to the general public. According to the survey conducted by the Japan Newspaper Publishers and Editors Association in 2006, the newspaper is recognized as the media that gives people accurate

¹⁾ A national news paper is defined as a paper, which is nationally distributed throughout the whole country as contrasted a local newspaper serving a city or region. There are numerous national newspapers such as *The Globe and Mail*, *The New York Times*, *The Independent*, *Times of India* etc.

information and reaches people on regular basis. Meanwhile, the survey says that people think TV is good at giving prompt reports or breaking news. Based on the previous data, regarding the news coverage on nuclear energy, it is also considered that information about nuclear energy matters is released by the newspapers precisely and broadly.

The media coverage on nuclear energy has variable aspects. For example, positive news coverage consists of topics like achievements of R&D, partnership with foreign organizations, cooperation activities with other research fields and promotion of the industry-academia-government collaboration.

On the other hand, negative coverage includes subjects such as accidents and troubles in nuclear facilities, radiation leakage, legal action of siting problem and so forth. Especially, when nuclear accidents and troubles occur in Japan, journalists request prompt release of sufficient information from the nuclear energy industry (hereinafter called “the industry”) in order to verify safe conditions and report the information to the public as soon as possible. The negative and critical media coverage tends to receive a great deal of press media, which sometimes becomes problematic when the industry’s behavior is inappropriate and uncovered.

2. Recognition of the mass media about nuclear energy in Japan

2.1 Purpose and approach of this study

When journalists edit information on nuclear accidents and report it to the general public, were there certain characteristics or remarkable tendency of the media coverage in the national newspapers? When nuclear accidents occurred, what kind of timely reaction did the national newspapers show? In order to seek answers to these questions, it is necessary to examine the typical feature of the media coverage on nuclear accidents and troubles in the national newspapers. In this regard, this study aims at clarifying elements needed for the industry to transmit information to journalists smoothly.

Smooth distribution of information from the industry to the mass media will contribute to facilitation of nuclear energy projects because the mass media’s information helps the general public know nuclear energy matters more easily. Taking into consideration the effects and influence of the mass media in case of accidents it will be meaningful to understand what kind of factor the industry should pay attention to so as to communicate with the journalists smoothly.

As for the approach of this study, from a quantitative point of view the tendency of the media report is to be grasped. Next, after verifying the typical feature of the media reporting on nuclear accidents, this study also has a purpose for understanding the aspect of the journalists’ awareness. On the occasion of nuclear accidents, what did journalists recognize about smooth communication between the mass media and the industry? A qualitative analysis such as an interview is one of the practical and effective ways for understanding in a deeper and greater detail way to achieve this purpose. Therefore, the author interviewed journalists in order to figure out what the mass media considered about communication with the industry when accidents and troubles occurred in particular.

Regarding a table of contents, firstly preceding studies related to the media coverage are introduced. Secondly, explanation of the PR activities by the industry is followed by the outcomes of the quantitative and qualitative research. In conclusion, what the industry should deal with and

concentrate on in order to improve their attitude for the smooth communication with the newspapers will be described with a future perspective.

2.2 Preceding studies about the applicable mass communication model

From a historical angle with respect to communication process in which the mass media is involved, the Lasswell Formula is referred to as one of the most famous models. H. D. Lasswell (1948) [4] described an act of communication in the form of answering the following questions:

Who? Says what? In which channel? To whom? With what effect?

These questions were transformed to a graphic model called the Lasswell Formula as in Figure 1.

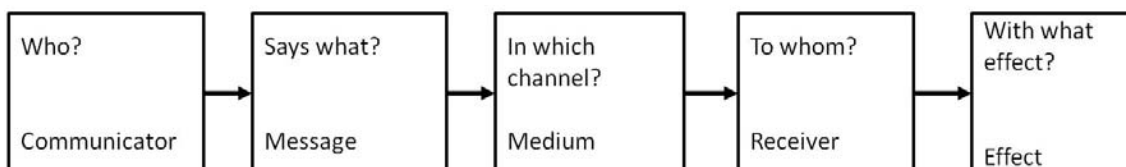


Figure 1 The Lasswell Formula with corresponding elements of the communication process

The Lasswell Formula has been used in several ways, mostly to organize and to give structure to discussions about communication. In reference to Figure 1, this study focuses on the first part “Communicator (who?)”.

3. The PR activities from the industry to the mass media

Generally speaking the public prefers to obtain easier and simpler information than technical knowledge, which is typically seen in the area of nuclear science and technologies. In order to satisfy the needs of the general public and provide readers with simple information the mass media always edits information and intends to deliver clear and simple news in an understandable way.

3.1 Communication between the mass media and the industry in Japan

In the course of production of the news journalists who gather information about nuclear energy usually contact the public relations (PR) section in the industry to obtain various information about nuclear energy. The PR section is one of the main sources for the journalists. Thus, the PR staff members within the industry are always required to provide journalists with the latest information in a concise manner.

3.2 The General procedure from the industry to the mass media

Considering the preceding study in Figure 1, the information flow from the industry to the mass media is relatively simplified in Figure 2. The diagram shows a general flow of information from the industry to the mass media. The industry becomes an information source for the mass media, which becomes a communicator. Reflecting the Lasswell Formula, a source, a communicator and a receiver are likely to correspond to the industry, the mass media and the general public, respectively.

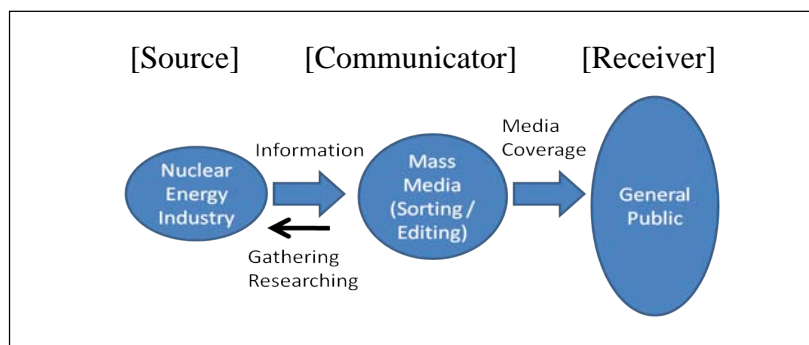


Figure 2 Information flow from the industry to the mass

As a preliminary research, in order to know the normal process of information flow from the industry to the mass media on a daily basis, the author contacted PR section staff members, who were working for the electric power organizations in 2008. The author asked them about their activities and ordinal communication process to journalists. The usual information flow was grasped as follows:

- All the companies organize the PR sections in-house. The PR members usually stay in touch with the journalists concerned or the press clubs which are situated in every local public entity such as prefectures, cities and villages. Since journalists need to gather information as soon as possible, they are keeping in daily contact with PR staff members.
- In case of emergency, the PR section immediately starts to prepare for a press conference. The journalists and the press clubs are informed when and where the press conference will be held by the PR section by phone, fax or e-mail.

As journalists need to learn nuclear energy projects to write articles, the PR section is one of the key sources. In this manner, journalists always expect to collect accurate information from the industry timely.

4. Comparison of the media coverage of the three cases

As a quantitative investigation, the Sodium leaked accident of FBR Monju (Monju accident) and the fire and explosion accident of the Tokai Reprocessing Plant (TRP accident) and the trouble of the Kashiwazaki-Kariwa Nuclear Power Plants (KK-NPP trouble) after the Niigata Chuetsu-Oki earthquake (Niigata earthquake) are chosen as well-known nuclear accidents and troubles in Japan. On the occasion of these cases extensive media coverage was generated. Since Asahi Newspaper is one of the Japanese leading papers, this study uses the articles of the three cases in Asahi Newspaper for the quantitative surveys. All of the data as indicated in Figure 3-6 is based on the online search system provided by Asahi Newspaper.

4.1 The sodium leaked accident of FBR Monju in 1996

The prototype First Breeder Reactor (FBR) Monju is located in Tsuruga-city, Fukui Prefecture, Japan. After Monju attained criticality in April 1994 and generated electricity in August 1995, a sodium leak accident occurred in December 1995. In the event of Monju accident, after the announcement given by the PR person to the press club, news reporters gathered together immediately at the press conference. Accordingly, media attention was received. Figure 3 shows the result of the character count of the articles in Asahi Newspaper.

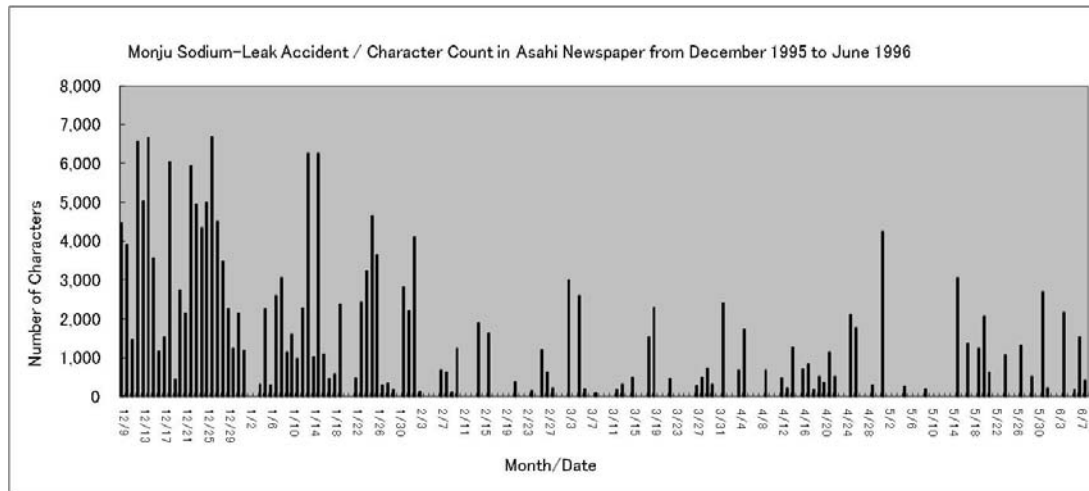


Figure 3 Quantitative Research of Monju Accident

The amount of media coverage can be quantified in Figure 3. The diagram shows the trend of the number of the characters in the articles related to Monju Accident day by day. It was clear that the media coverage on Monju accident was maximized soon after the accident occurred. The amount of media reporting progressively diminished during the following weeks. The maximum number within one week was 6,600. The average of the character per day reached 4,500 within seven days following the accident.

However, Monju Accident turned out to be a lengthy social issue. The accident changed into a social affair in the third week after the accident occurred. When newspaper reporters uncovered a video footage of the on-site images, in which sodium was leaked from a part of the drains in the secondary loop. After that, intense media coverage was not only received, but a bad press was also attracted. The national and local newspaper companies dispatched reporters to the press conference room set up near the Monju site temporarily and media scrum happened. Concealing the video footage caused sensational media coverage. The number of the characters in Asahi Newspaper fluctuated from day to day.

One of the articles in Asahi Newspaper says “Monju would have to spend at least two years preparing for restart”. However, in reality the nondisclosure of the video caused strong distrust and in consequence the industry pushed back the operation more than 14 years. It is considered that media coverage on Monju Accident is one of the typical examples of prolonged and on-again-off-again media reports, triggered by information hiding.

4.2 The fire and explosion accident at the nuclear fuel reprocessing plant in Tokai-mura

The similar case occurred after the Monju accident in Tokai-mura on the 11th of March in 1997. In the bituminization processing facility at the Tokai Reprocessing Plant (TRP) a fire and an explosion occurred. The international nuclear event scale of this accident was ‘Level 3’, which is recognized as a serious incident. Figure 4 shows six moth trend of the number of the characters in the articles concerning TRP accident.

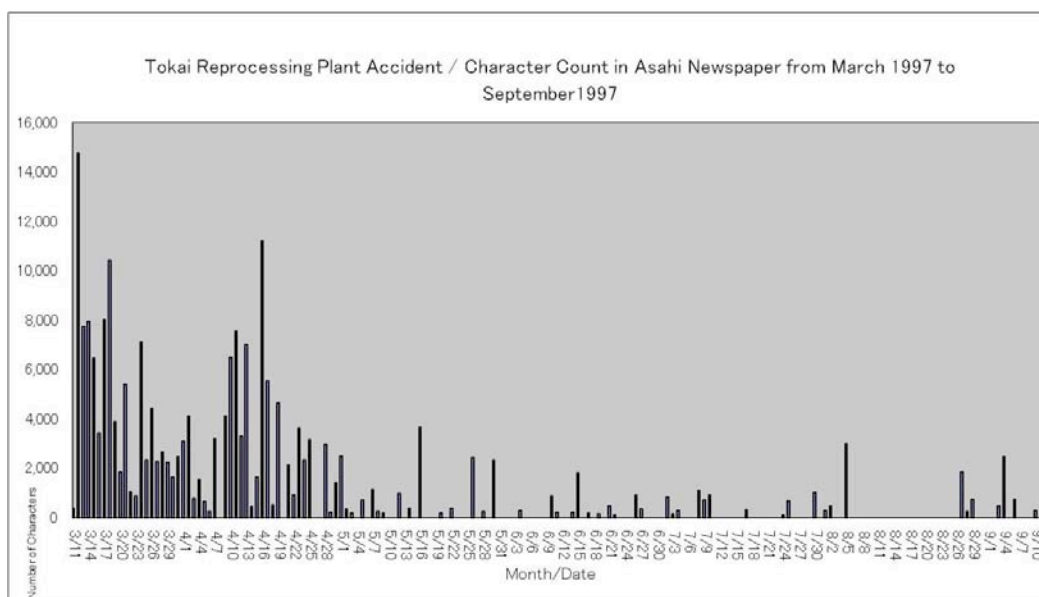


Figure 4 Quantitative Research of TRP accident

Due to a false report from the industry to the authority, the media coverage of TRP accident was lengthened and this case became a longstanding example, which is similar to the case of Monju Accident. On the second day of the accident the number of the character was 14,761. The average of the character per day reached 8,407 within seven days following the accident. The maximum and average numbers exceed those of Monju Accident. It means an intensive media report was made. But, from the viewpoint of continuity of the media report, the number of the characters decreased in a shorter period compared with the media coverage on Monju Accident.

It appears that the media coverage on TRP accident is one of the typical examples of the concentrated reports, triggered by a false report made by the industry. Whilst the intense media report on TRP accident was relatively protracted, this case did not continue in longer term than that of Monju Accident.

4.3 The aftermath of Niigata Chuetsu-Oki earthquake

Regarding the media coverage on KK-NPP trouble, the concern about the nuclear trouble can also be reported in parallel with the media attention about the earthquake in Asahi Newspaper. As for this case the author not only surveyed the articles of Asahi Newspaper quantitatively, but also used data from on-line news in Yomiuri Newspaper so as to make a comparison of the interest level between the nuclear troubles and the earthquake.

4.3.1 The media report on KK-NPP trouble in Asahi Newspaper

The Niigata-Chuetsu-Oki earthquake occurred in Niigata Prefecture on July 16, 2007. The earthquake caused automatic scram of Unit 2, Unit 3, Unit 4 and Unit 7 of KK-NPP. All major Japanese news papers provided a broad coverage of the nuclear trouble as well as the aftermath of the earthquake.

As far as the target of the media attention is concerned, what the media is wanted to gather was principally information on quake damage. On top of that, technical defects in KK-NPP caused by

the earthquake were also reported widely. The fire trouble of the electrical transformer in the KK-NPP also attracted media attention. The trend of the character count of KK-NPP trouble was indicated in Figure 5.

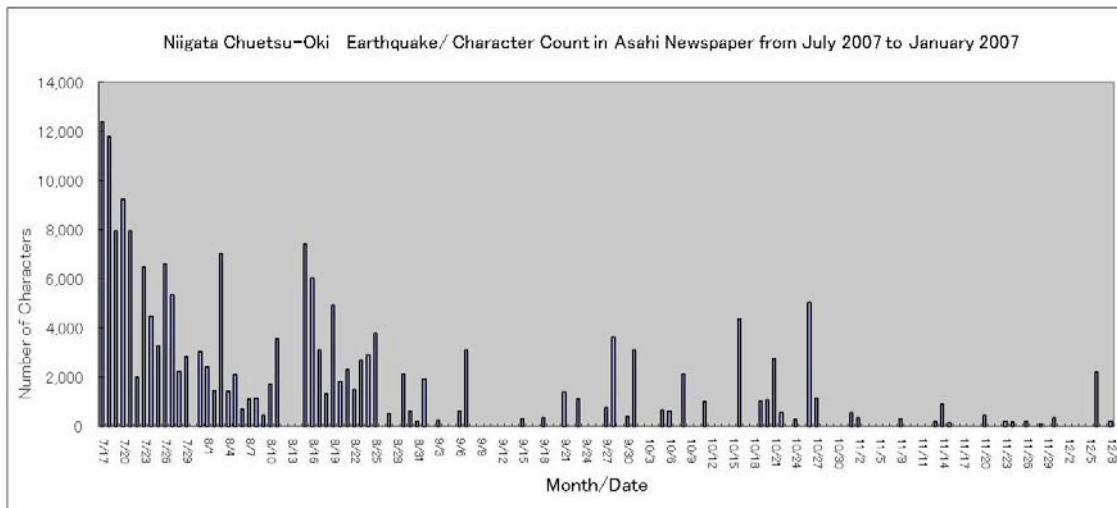


Figure 5 Quantitative Research of Trouble of KK- NPP after Niigata earthquake

One day after the earthquake happened, there were no articles that explained the details of the trouble at the power stations because full discovery was still under way at this stage. On the second day, a small amount of radiation leak and the plant-suspension order stated by the mayor were reported in the articles. On the fourth day from the quake, a flood of cancellations of hotels got a lot of media exposure and the attention of the mass media was widely reported in Japan, the U.S. and Europe. Even though the radiation leak was hardly influential to the environment, insecurity feeling and anxious thought were reported in the front page of the papers.

Asahi Newspaper distributed the average of 8,100 characters a day for one week from the earthquake, followed by 4,000 characters on average in the second week. Thereafter, the average of the characters per day gradually decreased to 2,300 in the third week. In the middle of August 2007 the average number of the characters was about 1,000 per day. Yet, one month after the earthquake, the feature articles were still highly publicized and the average number of the characters reached 3,800 per day. In the sixth week articles on the radiation leak almost disappeared and the average number of the characters went down to 1,800 per day. After the seventh week, less than 1,000 characters a day were distributed and it appeared the media coverage on the troubles at the nuclear power stations was calmed down.

Some articles said that the initial response from the industry was delayed and the local residents ran short of information about safety and stability of the nuclear power stations. Due to the shortage of information from the industry, fear of insecurity concerning the radiation leakage was reported and harmful rumours remained in the articles of the national newspapers.

It is considered that the media attention decreased gradually once the widespread attention reached a peak. Afterward, sensational headlines and exaggerated information were inclined to drop. As for the industry's reaction toward the mass media, except for the failure of the initial response by the industry, there were no distinctive failures of distributing information from the industry to the mass media. There was neither cover-up nor untruth given by the industry. Finally, the amount of the media reporting dropped down within seven weeks.

4.3.2 The online news on KK-NPP trouble in Yomiuri Newspaper

Nowadays, newspaper companies distribute news on the websites. The articles about the news reports on the nuclear trouble and the earthquake were put online through the Internet, too. Yomiuri Newspaper is also a popular national paper along with Asahi Newspaper and posted all related news online. Since all articles including back numbers of the earthquake and the nuclear trouble were preserved in one special section on the website of Yomiuri on-line news, the number of characters can be counted even later. The Figure 6 shows the number of the characters in the online articles.

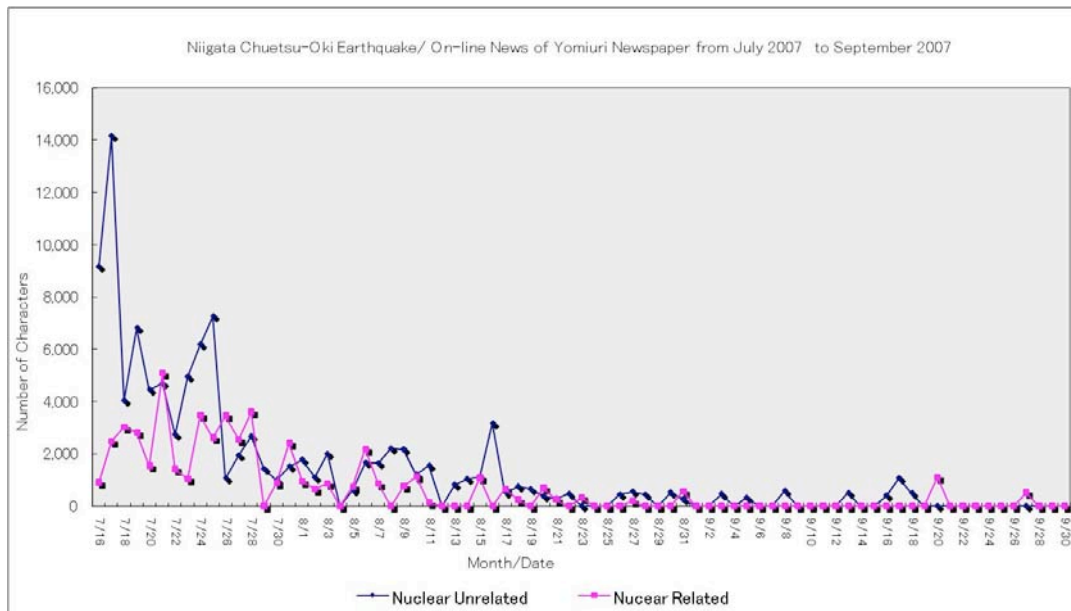


Figure 6 Quantitative Research of the Trouble in KK- NPP after Niigata earthquake

For the purpose of measuring the interest level about the nuclear troubles all of the online articles are divided into two parts as follows;

→ News A related to the nuclear troubles (pink line)

→ News B unrelated to the nuclear trouble but related to the earthquake (blue line)

The pink line indicates News A. The blue line indicates News B. As with the trend of Asahi Newspaper in Figure 5, the amount of the online article peaked soon after the earthquake occurred on July 16. As described above, due to lack of information related to the nuclear trouble in KK-NPP, in the early period News B exceeds News A and the pink line is placed under the blue line. The media report on the earthquake was more focused on in early times. Subsequently, what occurred in KK-NPP was revealed and information about the details of the nuclear trouble was gradually distributed by the industry. Toward the end of July 2007, News A increased rapidly.

Figure 7 shows the total number of the characters month by month between July 2007 and September 2007. The dark purple bars represent the total number of the characters related to nuclear troubles. The pale purple bars represent the total numbers of the characters in various articles related to the earthquake such as house damage, recovery operations, traffic accident, rescue and so forth.

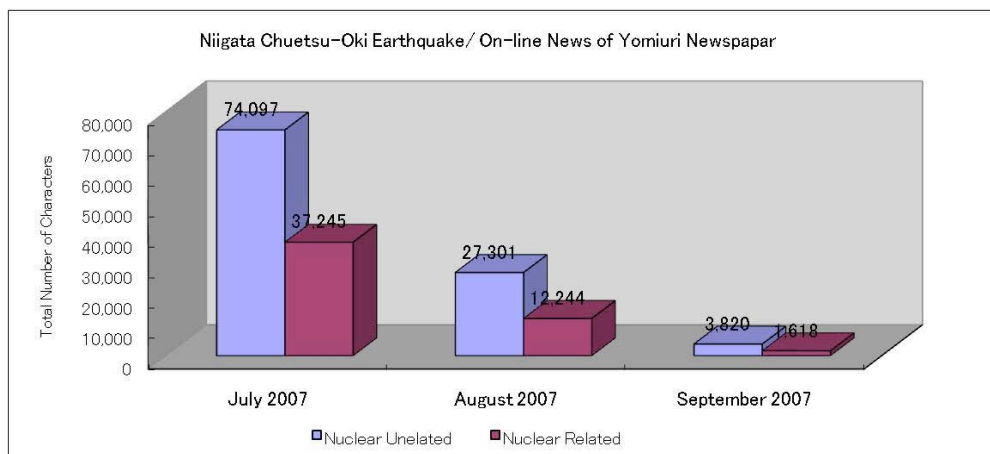


Figure 7 Quantitative Research of the trouble in KK- NPP after Niigata earthquake

According to the Figure 7, the total sum of the characters is 312,610 between July 2007 and September 2007. The total number of the characters in the articles related to nuclear energy matters is 102,174. This means that one third of the on-line news was related to the nuclear trouble. Even though the major cause was the earthquake, it is revealed that the news about nuclear trouble was one of the main concerns. The nuclear trouble attracted media attention as well as the attention to the earthquake.

5. Interviews with three leader writers

As described next, the author selected “gatekeepers”, who have authority to edit articles in the organizational structure. The author interviewed managing editors and editorial writers in order to see what they consider about the nuclear accidents.

According to earlier studies, Kurt Lewin [5] was apparently the first one to use the term "gatekeeping". The gatekeeper is the person who decides what shall pass through each gate section. The phrase “gatekeeping” was first applied to the study of news by David Manning White [6]. In a 1950 study he examined copy submitted to a small city daily newspaper during a one week period. D.M.White found the decision making process to be 'highly subjective'.

Based on Lewin’s and White’s study, the author interviewed three leader writers, who were recognized as gatekeepers. When interviewed, each of them worked for three different national newspaper companies such as Asahi Newspaper, Yomiuri Newspaper and Mainich Newspaper, which are called “The Big Three Papers” in Japan at present. The three journalists were responsible for editorial in the scientific fields like nuclear energy, space development, medical care, environmental issues, etc. When they were interviewed, they answered they had memories of Monju accident, TRP accident and KK-NPP trouble.

Considering the purpose of this study, in order to comprehend journalists’ awareness about communication between the mass media and the industry, the author came up with three questions. All the questions were relevant to the interaction between the mass media and the industry. Regarding smoothness of the communication, the organizational efforts made by the industry and the PR activities conducted by the industry, the following questions were provided;

⇒ “Do you think the industry makes an effort to communicate with the mass media smoothly?”

⇒ “Do you think the industry is promoting an organizational scheme for the PR activities?”

⇒ “Do you think the industry recognizes roles and significance of the PR activities?”

When the author asked them to have a meeting individually at a certain place, they accepted it on condition of anonymity. The interviews were conducted at each newspaper office. Table 1 shows their summarized answers.

Table 1. Answers collected from the leader writers of the national papers

Interviewee (Company) Time of Year	Summarized Answers
Editorial writer (Asahi Newspaper) December, 2007	<ul style="list-style-type: none"> ✎ I value individual explanation given by the industry. ✎ It seems the industry is starting to figure out importance of the PR activities through the experience. PR activities seem to be promoted gradually. ✎ The initial motion might reflect tone of the media coverage.
Managing Editor (Yomiuri Newspaper) October, 2007	<ul style="list-style-type: none"> ✎ I understand the industry is making efforts to plan site tours for journalists who want to learn the nuclear power system. ✎ The industry must not undervalue influence of the media coverage. ✎ Some power companies lack awareness of significance of the PR activities. ✎ The system of initial motion for prompt release of information has to be established. ✎ A press conference is one of the important opportunities in order for journalists to obtain information related to accidents promptly.
Managing Editor (Mainichi Newspaper) December, 2007	<ul style="list-style-type: none"> ✎ There is a certain gap among the electric companies in terms of organizational preparedness for information release. ✎ Electric companies should distribute information according to journalists' knowledge and job carrier. ✎ Training of the PR experts and spokespersons inside the industry is very important for the future. ✎ The organizational scheme for information disclosure inside the industry seems to be established.

The outcome of the interviews revealed that some journalists still expressed distrust because they found a passive attitude of the industry toward information disclosure some time ago.

The interviewees emphasized importance of timing of the initial response such as scheduling a press conference. The interviewees answered that the media attention was increasingly captured in the early period after the accidents and troubles. Their answers were found partially associated with the trend of quantitative research. According to their answers, the move of the heavy media attention corresponds to the sharp increase of the number of the characters shown in Figure 3-6. Referring to a press conference which the PR section is usually in charge of preparing for, they answered that it is essential that a press release should be more easily understandable and information should be disclosed immediately. Besides, the interviewees negatively mentioned that first motion of the industry remained still in an unstable condition. One of the interviewees said “negative press coverage could be inevitable without establishing a relationship of trust with the industry”.

Next, it is revealed that there is still a certain gap among the electric companies in the degree of readiness to respond to the mass media. The interviewees answered that the degree of the improvement in the PR activities would depend on companies' experience. For example, they responded that “Company T” was well-prepared, but “Company S” was not. The interviewees also

answered that learning from past experience, the industry was improving the information release system in-house.

Regarding the organizational framework for information disclosure, the interviewees acknowledged that the PR section was working systematically and able to transmit information to journalists with high efficiency. They figured out the organizational structure for the PR activities within the industry had been enhanced.

From the viewpoint of the awareness of the interviewed journalists in the national newspapers, as a whole, it became clear that the industry seemed to be learning how information should be disclosed to the mass media immediately and understandably. The interviewees positively evaluated efforts of the industry concerning the PR activities. The interviewees thought that the PR activities carried out by the industry were gradually making progress.

6. Conclusion - Proposal for the industry following the researches

This study takes the characteristics of the Japanese national newspapers into account and surveyed the number of the characters in the articles related to the nuclear accidents and troubles. Plus, the interviews with three journalists recognized as “gatekeepers” were conducted as a qualitative research.

As far as the media coverage in the national newspapers is concerned, as illustrated in Figure 3-6, it was quantitatively revealed that intensive media reports were made soon after the accidents occurred. This means that the national newspapers highly valued breaking stories such as nuclear accidents and troubles. These subjects became matters of concern for the national papers and were inclined to be negatively reported. It is considered that the first motion initiated by the industry is of importance so that the industry will improve in the information flow. The above points were grasped through the answers given by the leader writers who worked for the well-known national papers in Japan.

As for another feature, it is considered that the national newspapers tend to make a long-term media report if information is hid or a false report is made by the industry. Meanwhile, as the leader writers mentioned, the organizational scheme is currently being promoted in the industry and positively evaluated by the journalists.

Considering the case of the trouble in KK-NPP, even when the main subject was a natural disaster like an earthquake, nuclear hazard was also paid attention to by the national newspapers. Attention-grabbing headlines related to nuclear troubles were put in the articles of the national newspapers. For the national papers nuclear accidents and troubles are considered to become high-publicity subjects.

According to the interviewees' comments, the industry should not only pay attention to the way of press release, but also try not to confuse journalists and try to give easy-to-follow explanations especially in the case of accidents.

Another challenge is a frequent contact between staff members in the industry and journalists for distributing information immediately and smoothly. Maintaining an interchange between the two sides is to be helpful so that journalists will prevent misunderstanding and will not feel disturbed by

insufficient information in time for the publication. The bottom line is that the industry should keep contact with the mass media constantly and always prepare for the disclosure of information.

In accordance with one of the journalists' summarized comments, they proposed that the industry should pay attention to the importance about the PR activities. It is considered that positive attitude from the industry toward the mass media will enable the industry to earn the trust of journalists. As a consequence, it is expected that smooth communication between the mass media and the industry will be reflected in the facilitation of the energy project.

This research took only a few examples to observe the typical feature of the media coverage and remains to be still insufficient. In order to improve the precision of the data it is necessary to proceed with this sort of investigation. It is hoped that continuous research will obtain accuracy of the analysis by using another examples concerning nuclear accidents and troubles.

For the future perspective of the research area of communication between the industry and the mass media, the articles of the local newspapers need to be surveyed and journalists who work for TV, news service and a speciality journal also need to be interviewed for the enhancement of generality.

7. References

- [1] McCombs, M.E and Shaw, D.L, "The agenda-setting function of mass media", *Public Opinion Quarterly*, 36: 176-87, 1972.
- [2] Denis McQuail and Sven Windahl, "Communication Models for the study of mass communication", Addison Wesley Longman Publishing, New York, U.S.A, 98-99, 1993.
- [3] DeFleur, M, "Theories of Mass Communication", New York: David Makay, 1970.
- [4] Lasswell, H.D. "The structure and function of communication in society", in Bryson, (ed.), *The Communication of Ideas*. New York: Harper and Brothers, 1948.
- [5] Lewin, k. "Channels of group life", *Human Relations*, 1: 143-53, 1947.
- [6] White, D. M. "The Gatekeepers: a case study in selection news", *Journalism Quarterly*, 27: 383-90, 1950.