Chapter 3

Public Communication on Nuclear Power

Amongst the members of ERIA, strong growth of nuclear capacity is expected in China and India (IEA, 2017). These countries should introduce nuclear energy in a harmonious way to respond to expected increase in energy demand. The experiences of European countries and the US are useful in this regard.

3-1. Experiences and cases in the United States

Instead of focusing only on the technological aspects, the social aspects related to nuclear power generation, such as health, air pollution, the environment, and the economy, should also be discussed. It is important to talk about nuclear power as a valuable resource, and to explain why it is necessary.

The media often create and propagate a negative image of nuclear power, instilling fear and panic in many people (Stieghorst and Hampel, 2014). We must change such images. To achieve public acceptance, trust is vital. To realise trust, it is necessary to understand its relationship with integrity, competence, and benevolence. How can we improve communication in order to realise trust? Instead of adopting a cold attitude like that of a university lecturer who harshly reprimands a student who has performed badly, it is important to approach the public with the same warmth that we use for our families. We should incorporate a diverse group of people, and it is important that mothers and children lead to promote a forward-looking attitude.

To foster public acceptance, it is useful to find out how an individual's opinion on nuclear power changes from opposition to approval, or the reverse. Rather than asking people for their general views, there is a greater possibility of generating interest by asking about personal experiences. Genuine discussions about one's experiences, for example, 'I began thinking about nuclear power in this way because of such an event, which led me to study nuclear engineering and finding a job in the nuclear field', are valuable. It is also important to convey information about nuclear power at elementary schools, junior high schools, universities, and other education institutions.

3-2. Experiences and cases in the United Kingdom

The Menai Science Park was established by the Welsh Government in 2013. Its decision to collaborate with the Government of the UK to deliver the project as part of the UK's new nuclear research programme was based on the importance it places on the legacies of nuclear facilities for the local community (Welsh Government, 2018). Established within Bangor University, the science park provides business support for energy-related projects, including ocean energy and nuclear power utilisation on the island of Anglesey. Not only is it directly related to the power plant, it also provides support for expanding related businesses (SPARC, 2015).

To achieve public acceptance of nuclear power it is important to ensure coordination and co-operation between diverse elements, including communities, economic organisations, the national government, local governments, education institutions, and nuclear power developers and managers. Trust is of particular importance in a community. Employing a member of the local community in a key position is also effective in gaining the understanding of the local community. Emergency evacuation plans must take into consideration not only the evacuation of people from the site itself, but also the evacuation of local residents.

It is also important to build strong co-operative ties with local schools and universities. Bangor University has established the Nuclear Futures Institute, which is engaged in a wide range of activities such as building a boiling water reactor network hub in co-operation with the Imperial College of Science, Technology and Medicine in London. Furthermore, the operation of a nuclear power plant not only requires nuclear engineers, mechanical engineers and electrical engineers, but also experts in fields such as law and economics. Hence, these experts need to be nurtured too. Activities will also be carried out to create experts within the local community and expand employment opportunities for them.

3-3. Experiences and cases in Finland

The municipality of Eurajoki in Finland has 9,400 residents, and 53% of the working population is employed in industry. The circumstances that led to the siting of a final nuclear waste repository in this municipality can be traced back to the 1970s. A geographical survey on disposal sites was commenced in 1978. In 1999, more than half of the residents (59%) indicated their approval of the development of a final disposal site in the municipality.

As ensuring safety was a matter of the highest priority, the focus was placed on formulating the legal means to ensure safety. Two laws were eventually enacted: the Act on Environmental Impact

Assessments and the Nuclear Energy Act. These laws included provisions related to transparency and acceptance of the local community.

The municipality of Eurajoki had been selected as a final disposal site because it had optimal technological and economic conditions and because the residents understood the positive effects that a repository could bring, including employment and economic benefits. Hence, most residents approved of the plan, and the local government also gave strong indications of its intentions to promote this development. On the strength of these factors, the municipality made the decision to become a final disposal site in 2000.

The case of the Eurajoki municipality illustrates how the safe disposal of waste is a prerequisite in the establishment of a new nuclear power plant and acceptance by the local community is an important element in the selection of a site. It is important to provide local residents with much more information than residents in other regions of the country receive, and to ensure that sufficient communication takes place.

One of the differences between Finland and other countries is its extremely hard and stable geological foundations. It has been technologically proven that in Finland, final disposal of used fuels is safer than intermediate storage. Another important characteristic is Finland's success in fostering understanding amongst its citizens about the technological aspects of the final disposal method.

To achieve public acceptance, the language used is of great importance. It is not necessary to use technical jargon, such as 'scram' (run away), 'trip' (an emergency stop when referring to stopping operations safely), or 'decommissioning' (measures associated with the shutdown of nuclear power facilities). Unfamiliar words like these can create negative images. Instead, familiar words that can easily be understood by everyone should be used, such as 'stop using' instead of 'decommissioning'.

Nuclear power facilities were constructed in Finland in 1993, 2002, and 2010. One of the experts invited to the workshop had been a philosopher who was opposed to the use of nuclear power. However, she described how her perceptions changed while observing the construction of nuclear power facilities, and how as an environmental specialist she now actively supports nuclear power. This is an example of how understanding the facts of nuclear power can utterly transform a person's attitude. It is important to facilitate such changes in attitude.

3-4. Experiences and cases in Japan

In Japan, when a nuclear power plant resumes operations, the power company must pass a safety-related regulatory review by the Nuclear Regulatory Authority, formulate an evacuation plan in preparation for an accident, and gain the understanding of the local government. Gaining the understanding of local governments entailed experts providing explanations about nuclear power to the local residents. However, this approach was not very effective in gaining residents' understanding, so interactive methods, such as dialogues, are being explored.

Efforts to gain the understanding of the local government need to consider (i) who would be the optimal individual or organisation to serve as a facilitator to promote long-term dialogue with the local community, and (ii) how to improve the financial assistance offered by the Ministry of Economy, Trade and Industry to the municipal and local governments for such purposes.

Concerning the first issue, there is a trend amongst the younger generation in Japan to support the use of nuclear power because of the cost savings in electricity charges that it brings. However, the support rate for nuclear power falls as people marry and age. The trends in the support rate also differ by gender. For these reasons, it is important to capture the characteristics of public acceptance by age group and gender. If the government carries out one-sided communication (from government to residents), residents will not believe that the government is being honest. Hence, the government is putting more effort into communication with local governments and residents.

As for the second issue, the government is reviewing ways to improve its financial assistance to local governments. It is considering introducing mechanisms to allow local governments that have accepted the resumption of nuclear power facilities to enjoy financial rewards. However, when introducing this method, it is important to realise that the population that shoulders the risks of nuclear power generation is different from the one that enjoys the benefits. In other words, the question remains how to reward the local community, which bears a higher burden.

While the general public's view is that nuclear power plants impose more risk on the local community than on the country at large in the event of an earthquake or tsunami, there are also instances where hosting a nuclear power plant has been advantageous in such situations. For example, Tohoku Electric Power Company's Onagawa Nuclear Power Station performed impressively during the 11 March disaster, withstanding the tsunami, achieving cold shutdown, and even serving as an evacuation shelter for residents living along the coast. Tohoku Electric Power Company's story comes amidst the loss of trust in the company. It is hoped that power companies will continue to make steady progress in gaining the trust of the local community.

Exchange of views with Aomori Prefecture. Aomori Prefecture's stance is to co-operate with the national government's policy in ways that contribute to regional revitalisation, based on the premise of assured safety. It has consolidated the views of 40 cities, towns, and villages within the prefecture. As described below, there are cases where it is preferable for a prefecture to adopt its own initiatives, as Aomori Prefecture has done, which are different from those of the national government and business operators.

For example, Aomori Prefecture is engaged in efforts to develop an environment for residents to think about nuclear power and make decisions at each stage of a project. It is not enough to simply leave the work of providing information to the national government and business operators. Rather, the prefecture needs to carry out information campaigns from the viewpoint of the residents to help them make independent decisions. Every type of nuclear facility can be found in Aomori, and this calls for publicity efforts of the highest level, in terms of type and scale, that can be found in Japan.

Besides providing information, Aomori Prefecture provides financial assistance to private corporations from its own budget and draws on the national government's subsidy systems to develop public infrastructure. In addition, prefectural staff members enter nuclear power facilities to conduct safety inspections. They also carry out disaster prevention drills and environmental monitoring, which includes the setting up of monitoring posts to measure radiation levels.

Aomori Prefecture's stance is based on the premise that the national government should ultimately take the responsibility for enacting and promoting nuclear power policies. At the same time, however, it also recognises that the intentions of the residents of municipalities where the nuclear power facilities are established are the starting point for considering nuclear power policies. To that end, the prefecture has adopted a procedure of carefully affirming the intentions of all municipalities in the prefecture, and ultimately, engaging in discussion at the Prefectural Assembly and having the prefecture governor make a decision based on the intentions of the residents. The prefecture's approach of verifying the intentions of all municipalities will remain unchanged in the future. There are no special, predetermined procedures that the prefecture follows in consolidating the consensus in the municipalities. There are also times when discussions are held at the Prefectural Assembly based on discussions carried out in the municipalities, or when discussions in the municipalities are carried out in parallel with discussions held at the Prefectural Assembly. The governor makes the final decision.

Sometimes the information the residents obtain is biased and the decisions they make can be emotional and short-sighted. On the other hand, the national government must make decisions from a long-term perspective, without being constrained or disproportionately influenced by short-term emotions. The

prefecture is positioned between the residents and the national government, and therefore must focus on the circumstances of both. It would face immense difficulties if the national policy were to be uncertain and changeable, and for this reason it needs the national government to take a firm stance. Correcting the bias in the information obtained by residents, while compensating for inadequacies in the information provided by the national government and business operators, are the two significant functions of the information activities at the prefectural level.

The attendance rate of residents at a public briefing held in the prefecture may be about 50 people for a municipality with a population of 10,000. Since the audience is limited to those who are interested in the topic, it is important to convey information properly to those who say they do not have a clear understanding of the issues.

Aomori Prefecture's initiatives in the area of nuclear power. Aomori Prefecture's relationship with nuclear power began with a bid to host a nuclear-powered vessel ('Mutsu') in 1970. Since then, many nuclear power cycle facilities and other facilities have been established in the prefecture. Despite serious efforts to prevent the potential risks of nuclear power from materialising, the Fukushima accident occurred and shocked everyone. Many Fukushima residents are still unable to return home. On the other hand, efforts to resume operations based on new regulatory standards are underway, and the national government, regulatory agencies, and local governments recognize that communication is even more import than before.

The responsibility for ensuring safety falls to the operators and regulatory agencies. However, the prefecture must also think independently, and not simply receive the information. Local governments engage in disaster prevention efforts that the regulatory bodies are not involved in. They carry out activities focused on securing residents' safety and responding in the event of a severe accident. During the current transition period, it is even more important to communicate with the residents to ensure that the safety standards for nuclear power facilities are determined in jointly with society.

To promote understanding by residents, the prefecture has (i) provided public relations brochures and pamphlets and carried out public relations campaigns through media such as newspapers, prefectural information magazines, and radio (Figure 3-1); (ii) provided learning experiences on the energy business, visiting schools to teach primary school students about energy (Figure 3-2); and (iii) held meetings to exchange of opinion on nuclear power, which residents of Aomori Prefecture can attend.

Figure 3-1: Public Relations Brochures and Pamphlets

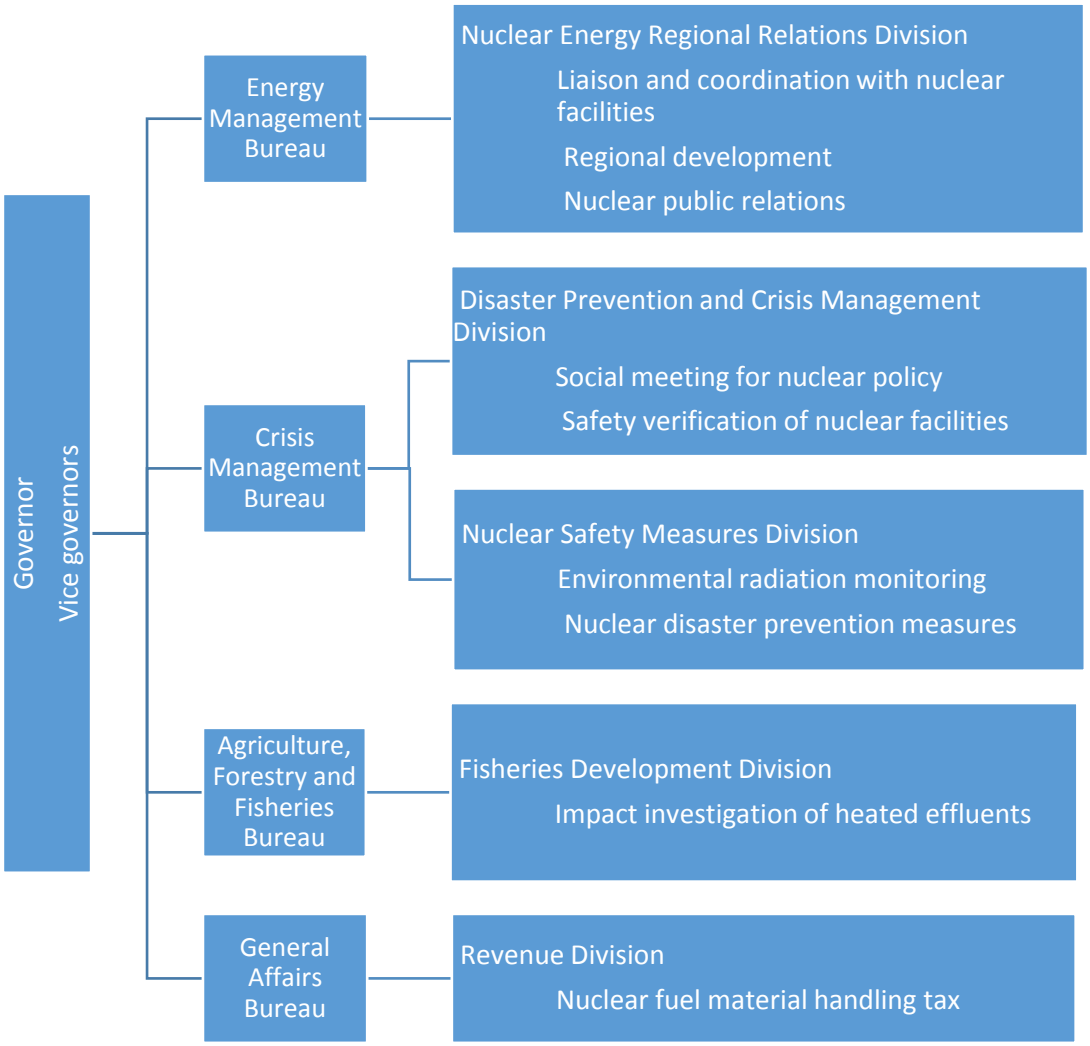
Figure 3-2: Energy Education for Primary School Students

Source: Aomori Prefecture*, Information on Electricity's Delivery Class*.

The prefecture hosts facilities such as the Higashidori nuclear power plant, the Ohma nuclear power plant, and the spent fuel interim storage facility. Other nuclear fuel cycle projects are also being implemented. Therefore, the prefectural government strengthened the administration's system for (i) conducting liaison and coordination, (ii) implementing regional development, (iii) securing the safety of the local residents and protection of the environmental, and (iv) instituting nuclear disaster prevention measures (Figure 3-3).

While it is important to publicise the useful aspects of nuclear power, such as its economic effects, this has become exceedingly difficult since the Fukushima accident. Aomori Prefecture faces a situation in which it must avoid putting too much emphasis on the contribution of nuclear power to the local community. From the perspective of developed country sensibilities, it may be difficult to understand why it is not a good idea to emphasise the benefits of nuclear power. In Japan, however, this has led to difficulties in gaining public acceptance, so the method of communication adopted by Aomori Prefecture are difficult to understand. Hence, the way in which public acceptance is promoted must be country- or region-dependent.

Figure 3-3: Aomori Prefectural Organisation Relating to Nuclear Power



Source: Aomori Prefecture, Nuclear Administration February 2017.