

Comprehensive Plan for Public Confidence in Nuclear Regulator

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1. Introduction

Public confidence in nuclear regulator has been discussed internationally. Public trust or confidence is needed for achieving regulatory goal of assuring nuclear safety to the level that is acceptable by the public or providing public ease for nuclear safety. In Korea, public ease or public confidence has been suggested as major policy goal in the "Nuclear regulatory policy direction" annually announced. This paper reviews theory of trust, its definitions and defines nuclear safety regulation, elements of public trust or public confidence developed based on the study conducted so far. Public ease model developed and 10 measures for ensuring public confidence are also presented and future study directions are suggested.

2. Discussions on Trust and Confidence

2.1 Why trust is necessary?

Public confidence in regulator has become increasingly important and actively discussed worldwide and in Korea as well. It also has been emphasized in "Nuclear safety policy statement", "Nuclear safety charter" and also "Annual nuclear regulatory policy direction". Providing the public with information on the results of the regulation properly is by itself a part of regulation. Public confidence in regulator leads to the public's ease for nuclear safety, which is major outcome of regulation. Worries related to nuclear safety degrade the quality of residents' life and also decrease the welfare of them. Degraded trust may cause from operator's viewpoint unnecessary loss of plant operation and generate additional costs for activities to recover public trust. Low trust, from regulatory perspective, may decrease satisfaction with nuclear safety, which might hinder the achievement of regulatory goals. It also acts as burden to the regional administration, as it causes tensions and conflicts related to nuclear safety issues. In this way, loss of trust increases social costs, therefore improving trust is necessary for enhancing regulatory effectiveness and reducing national costs.

2.2 Theory of Trust and confidence

Trust is "an expectation that another party will not allow you to be harmed at a time when you are vulnerable." It is defined as "the extent to which one believes that others will not act to exploit one's vulnerabilities (Barney and Hansen, 1994; Mayer et al., 1995; McAllister, 1995)." Trust is characterized as "the expectation that arises within a community of regular, honest, and cooperative behavior, based on commonly shared norms, on the part of other members of that community"(Fukuyama,1995). There are other definitions suggested by scholars. Particularly, as the trust is directed on a party or actor, "trust in regulator" would be appropriate than "trust in nuclear safety".

General trust is one's overall belief that another individual, group or organization will not act to exploit one's vulnerabilities. The term confidence is widely used instead of

the term "trust". However, there are some conceptual differences between trust and confidence. Trust is "putting his fate voluntarily to others, where they maintain mutually dependant relationship, based on the optimistic expectations to others, recognizing the risk or dangers.(Mayer, et al. 1995)". Confidence is "the judgement on the capability and intention of others, in the situation that cannot be chosen by the trusters who recognizes the risk.(Giddens, 1990). It is asserted that trust conceptually includes confidence.(Deutch, 1960; Cook and Wall, 1980). Therefore, the words "public confidence in regulator" would be appropriate, as radiation risk caused by nuclear installations was not voluntarily chosen by the residents. In that regard, 'public confidence' is now widely used worldwide.

2.3 Definition of Public Confidence in Regulator

Nuclear regulation is government intervention to the electricity production activities to reduce and maintain the risk of radiation caused by the operation of nuclear installations to the level that general public may accept. Public confidence in regulator is "the willingness of the people to take the risk that may be caused by the nuclear installations and may be imposed to them, based on their expectations on regulatory body (MEST and KINS)." More specifically, public confidence in regulator is as follows. Firstly, the "expectations of the public that regulator would not harm the public who have no control of the nuclear installations, during its licensing process and operation, by preventing incidents or accidents through various regulatory activities". Secondly, it is the "expectation that, in case of incidents or occurrences, stringent investigations will be performed putting highest priority on safety not to harm the public." Public or residents would feel ease and free from worries and anxieties against safety through this process of securing public confidence.

3. Measures for Enhancing Public Confidence in Regulator

3.1 Public's Ease Model

A model has been developed to determine the relationship among regulator, utility and stakeholder including the public, specifically to determine how the elements of confidence are related to the trusters' or public confidence in regulator. This has been developed by KINS and also by the expert feedback from other organizations. Regulator regulates utility and provides the society with the information in an open manner. Stakeholder monitors regulatory activities and communicate with regulator to provide opinions as feedback. Utility also provides information and the public participates through opinion offering and monitoring and communication is made. Engineering safety achieved by the utility efforts and regulatory activities, combined with communication activities, influence the perceived safety and it contributes public confidence and also in utility. These interactions and feedback constitute public ease on nuclear safety, which consequently achieve regulatory goal, one of societal goals that are pursued

by the government regulation. It may contribute the acceptance of nuclear safety. The acceptance of nuclear power would be achieved as shown in the model, however, it is not the goal or objective of regulator, as a matter of course.

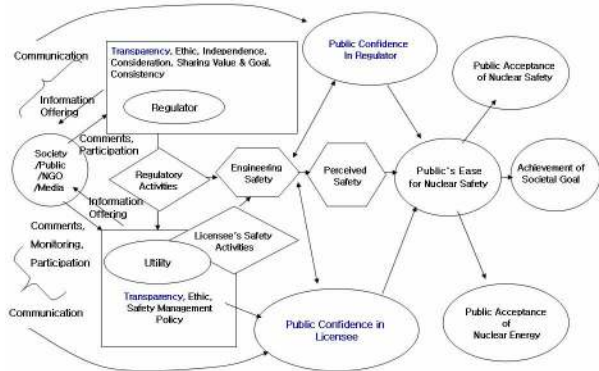


Figure 1. Public's Ease Model

3.2 Elements of Public Confidence in Regulator

After the various study results on trust or confidence, elements of trust were obtained. They are behavioral consistency of trustee, competence, consideration of truster, sharing values and goals. Communication between trusters and trustees are also important element. Considering specified public characteristics provided by IAEA, NGO, resident people, media and the general public are selected as major stakeholder by the order of high involvement and knowledge. Elements of trust or confidence in regulator derived for these high involvement trusters are presented as shown in the table below.

truster	Elements of trust in regulator
resident	Observance of government commitment, behavioral consistency, regulatory independence, prompt response in case of events, consideration(kindness), emergency response capability, sharing values, communication, expertise
NGOs	Regulatory independence, information offering, cooperativeness, sharing values, communication, expertise
Media	Openness, prompt information offering, regulatory independence, communication, expertise
General public	Prompt response to incidents shown in media, conservatism in dealing incidents(forced shutdowns), communication, expertise

Table 1 Elements of trust per trusters

3.3 10 Measures for Enhancing Public Confidence in Regulator

Ten plans for enhancing public confidence derived from the definition and elements are as follows.

1. Improvement of regulatory framework and public activities on regulatory expertise
2. Presentations to residents on regulatory inspection results

3. Strengthening contacts between resident offices and people
4. Stakeholder participations in regulatory process
5. Development of regulatory perception index and its utilization
6. Provision of sufficient information in case of incidents as well as normal operation
7. Establishment of public relation division
8. Regular meetings and forum with NGO and media(stakeholder)
9. Sociodrama with stakeholder
10. Others for public confidence

Among the plans above, some could be selectively implemented by the policy decision. "Handbook on the public confidence in regulator" was developed for officers dealing with this public matters and senior regulators.

4. Conclusion

Theory of trust and confidence were reviewed and their definitions were determined and also the public's ease model was also developed. Elements of public trust or public confidence were derived and plans for improving public confidence were suggested. As confidence is not concrete concept and not easy to understand, it was intended to prepare measures that could be practically implemented, rather than developing more elaborate concepts or model. However, the public ease is not achieved only by improving public confidence in regulator. The public confidence in utility is also important for achieving public ease, as shown in the Figure.1. Therefore, the relationship with confidence in utility shall be determined and also NGOs' interactions and various feedback loops should be considered in the future study. A study on the measuring the public confidence would be also needed.

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