

## An overview on development of safety culture of regulatory body in Korea

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### 1. Introduction

Fukushima accident revealed not only licensees but also regulatory bodies' (RBs) establishment of robust safety culture (SC) is crucial to implement effective safety regulation. Result of the IAEA IRRS held in 2011 required regulatory body in Korea to make improvement measure for the enhancement of safety culture of regulatory body (SCRB). Compared to works done to assess SC focused on working organizations of nuclear industry, not enough attention has been paid to assess the RBs. However, strong SC is considered a critical tool for RBs to achieve their objectives and discharge their responsibilities in an effective and efficient manner. To achieve this goal, long-term comprehensive drive plan has to be made.

The IAEA is putting great effort to establish and enhance SC in RBs. OECD/NEA CNRA is planning to produce Green Booklet on SCRБ for regulatory guidance. SCRБ is an organization's culture, RBs ultimately has to possess in order to assure secure use of nuclear energy. An organization's culture emerges from, and is manifested in, the interplay of its members' emotion, cognition, attitudes, behaviors and interaction patterns. As a result of this mechanism, organizational structures and culture influence individual's attitude and behavior when entered into a situation [1].

Each organization has its strengths and weakness in SC. Safety culture defective components of the Fukushima accident was analyzed by JNES in 2012. According to the casual factors indicated in the investigation report, Nuclear Regulatory Organizations (NROs) of Korea also had weakness of the SCRБ in terms of questioning attitude, continuous learning, issue identification and resolution and safety leadership.

Current position of SC traits are not fixed but constantly moving along the continuum toward either good or not-good direction, thus, in need of daily reinforcement. We focused on dynamics and possible change by sustained leadership based on the Three-level model of organization culture [2].

### 2. Methods and Results

Regulatory framework of Korea is ran by the government, NROs, licensees and other stakeholders. Interacting with related governmental entities, NSSC (Nuclear Safety and Security Commission) and KINS (Korea Institute of Nuclear Safety) constitute NROs, which are responsible for regulating licensee's nuclear facilities and activities. NROs must possess a high level

of standard as an SCRБ to cope with the situation when conducting regulatory activities and daily works which include verifying and monitoring, setting rules and standards and enforcing and changing.

#### 2.1 political-economic view on SCRБ

Development of SCRБ was performed by extracting common value among elements shared by all the members. The core values and principal of NSSC and mission statement with code of conduct of KINS were promulgated in 2011 and in 2000 respectively. The key elements of each are summarized as below:

##### A. Core Value of NSSC

- ✓ Technical Excellence : Accumulate expertise and experiences that people can build trust on
- ✓ Independence : Progress vigorously with works only for the nation and people
- ✓ Transparency : Leave no doubts throughout the safety regulatory process
- ✓ Impartiality : stand with impartiality and objectiveness
- ✓ Reliability : comply with principles and maintain clarity and consistency

##### B. Principal of NSSC

- ✓ Service for the people is our top priority
- ✓ Mutual respect based on trust
- ✓ Effective management to improve performance
- ✓ International collaboration that lives up to the national status
- ✓ Active communication with people and disclosure of information

##### C. Mission Statement of KINS

- ✓ Fairness & Independence: Recognizing that ultimate clients are the general public, KINS shall perform nuclear safety regulatory functions objectively and with fairness, and also maintain independence from stakeholders including the licensees
- ✓ Information & Public Confidence: Make the information on the results of its works available to the public sincerely to build public confidence in nuclear safety regulation.
- ✓ Technical Capability & Clear Regulatory Decision: Carry out regulatory functions with state-of-the-art technology and knowledge, maintain and improve its technical capability

continuously, and make a clear regulatory decision without any undue delay.

- ✓ Effectiveness & Rationality: Pursue effectiveness and rationality in safety regulation.
- ✓ Cooperative Relationship: Recognizing that the nuclear safety is a matter of international concern, KINS shall maintain close cooperative relationship with international agencies and foreign institutes.

#### D. Ethical Code of Conduct of KINS

- ✓ Observing regulations
- ✓ Maintaining dignity
- ✓ Reasonable thinking
- ✓ Participation and respect
- ✓ Prohibition of unjust use and disclosure of information
- ✓ Expertise
- ✓ Positive and supportive working environment
- ✓ Objectivity
- ✓ Working attitude and self-Control
- ✓ Attitude toward licensee
- ✓ Prohibition against Conflicts of Interest
- ✓ Prohibition of criticism in the presence of any licensees
- ✓ Prohibition of personal opinion to any pending regulatory issue
- ✓ Prohibition of accepting bribery

Core value (NSSC) and Mission statement (KINS) are values to be shared and Principal (NSSC) and Ethical code of conduct (KINS) are behavior patterns to be promoted or enforced among all members.

#### 2.2 External Adaptation

External risk of the government can be categorized into 3 sources: Internal-driven pressure, Market economy pressure and Public opinion pressure [3]. Internal-driven pressures are pressure to reflect regulatory activity from interests of organized groups rather than diffuse group such as consumers or unidentified concerned individuals. Market economy pressures are pressures to adopt 'proportionate' responses in regulating risky business with due consideration of benefits. Public opinion pressures are from general opinion, way the public feels about the risks involved, by which government is influenced.

Component of core value and mission statement gives guiding principles essential to effectively perform their mission and to assure balanced response to each external pressures when they are applied to their works.

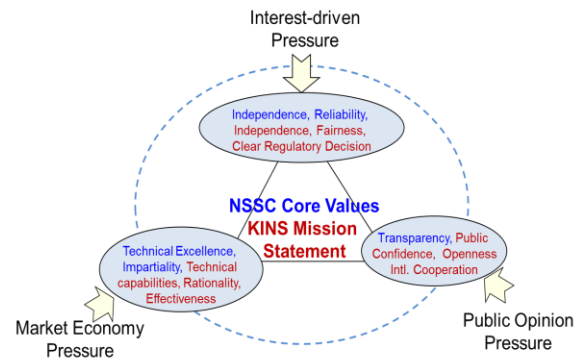


Fig. 1. External adaptation

### 3. Discussion

Despite the same organization purpose, NROs have different roles and responsibilities. Whether it is possible and desirable to harmonize the two culture still remains in question. It doesn't have to be same but necessary for both NSSC and KINS to be consistent in building SC traits to carry out a coherent policy with synergy effect. NROs should communicated and convey consistent message to the stakeholders. Not limited to development of SCRB itself, influence of SCRB on licensee's SC is recommended for further study. Also, what behaviors are expected to make positive effects and whether they can be discerned from other negative ones will be useful to have a clearer picture of SCRB.

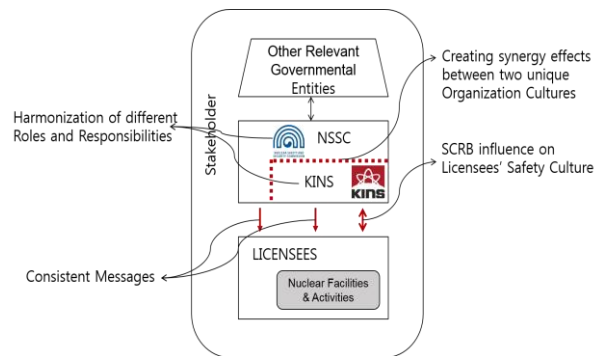


Fig. 2. Safety culture within NROs and interactions

### REFERENCES

- [1] K. M. Branch and J. L. Olson, Review of the Literature Pertinent to the Evaluation of Safety Culture Interventions, 2011.
- [2] E. H. Schein, Organizational culture and leadership, 2010.
- [3] C. Hood, H. Rothstein, and R. Baldwin, The Government of Risk: Understanding Risk Regulation Regimes, 2001.