

## Public Perception of Radiation

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### 1. Introduction

Nuclear power generation is a representative low-carbon green energy source, but due to the nature of nuclear power generation, radioactive waste and tritium are generated, and workers and residents around nuclear power plants may be exposed to radiation. Not only the residents around the power plant but also the radiation industry workers are exposed to the radiological environment, but the controversy continues without accurate knowledge about it. Since the general public's knowledge about radiation was found to be very insufficient in Korea, a survey was conducted on the general public's social interest in radiation and related issues prior to this project.

### 2. Methods and Results

#### 2.1 Methods

##### 2.1.1 Survey period

The survey period is from 2024.01.01 to 2025.01.24

##### 2.1.2 Survey methods

##### 2.1.3 Domestic

Korea Press Foundation (KPF) investigated and analyzed the number of news articles and their content during the investigation period.

##### 2.1.4 Survey words

Keywords related to radiation, nuclear power, communication, tritium, radioactive waste, radiological emergency, radiological exposure, radiological environment, and renewable energy were investigated and analyzed. In the results of the survey targeting the entire world, the number of related reports was large, so only the weighting of interest was calculated.

##### 2.1.5 Analysis Method

In Korea, after entering the keyword, if related articles are searched, they are classified by core keyword, data, and online publisher. The number of related keywords per articles is limited to 10, and additional analysis is conducted on the top 100 news articles by weighting the keywords that are duplicated in all articles.

Keyword	Case
Radiation	8,630
Nuclear Energy	20,054
Tritium	912
Radioactive Waste	17
Radiological Emergency	23
Radiological Exposure	37
Radiological Environment	236
New and Renewable Energy	16,346
Radiological Public Relations (PR)	0
Public Relations (PR) For Nuclear Energy	0

Table. 1. Frequency of the keyword searched in KPF during the period.

In the case of overseas countries, after entering the relevant keywords, the change in interest over a certain period of time and the level of interest in the country with the highest interest were analyzed. In addition, the level of interest was visualized by comparing and analyzing the main keywords at once

#### 2.2 Results

##### 2.2.1 Radiation & Nuclear power

We searched for communication and publicity related to radiation and nuclear power, but we couldn't find any related results in Korea or abroad. However, the most reported articles on radiation and nuclear power were related to the KHNP, the Nuclear Safety and Security Commission (NSSC), and the Korea Atomic Energy Research Institute.

##### 2.2.2. Tritium

Regarding tritium, 9 institutions, 6 places, and 4 people were found to be highly related, and among them, Fukushima, Japan, and Tokyo Electric Power Company had the highest weights in that order. This is closely related to Tokyo Electric Power Company starting to discharge contaminated water from the Fukushima nuclear power plant, and radioactive substances ranked first among related words. [Fig. 1]

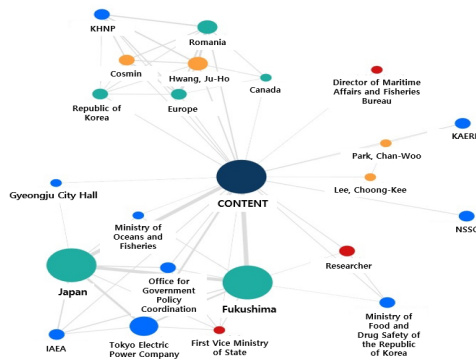


Fig.1. Analysis of tritium-related relationship

### 2.2.3 Radioactive Waste

9 institutions, 12 places, and 3 people had high weights, and among them, Busan, which had the highest weight, was because the 24<sup>th</sup> geological Sciences Olympics and the international Conference on High-Level Radioactive Waste were held there. [Fig. 2]

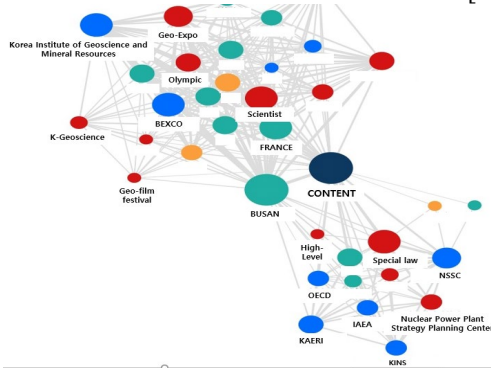


Fig.2. Analysis of radioactive waste-related relationship

### 2.2.4 Radiological Emergency

Among the number of related articles, 27 institutes, 24 places, and 20 people had high weights in each area, and among them, the Southeast Medical Academy had the highest weight. [Fig. 3]

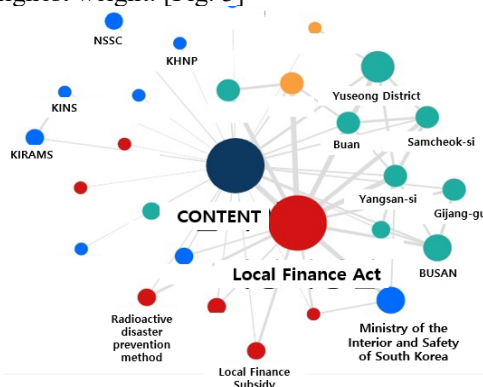


Fig.3. Analysis of radiation emergency-related relationship

This seems to be related to the annual radiological emergency training and the it hosting a symposium on ‘establishing a base for responding to radiation disease.

### 2.2.5 Radiological Environment

Among the 2 institutes and 9 places, KHNP, NSSC, and Yeonggwang County had the highest weights in that order. This is related to the radiation environmental assessment of Hanbit Nuclear Power Plant Unit 1 and 2, and the public hearing had an overwhelmingly high weight as a related word. [Fig. 4]

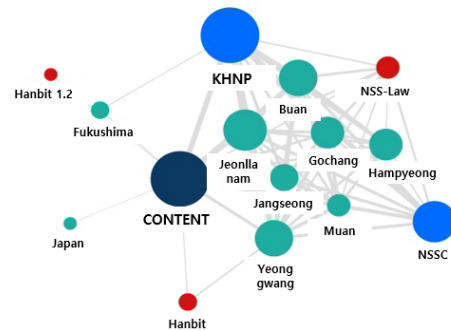


Fig.4. Analysis of radiological environment-related relationship

### 2.2.6 New and Renewable Energy

5 institutes, 3 places, 1-person related keywords were analyzed, with the Ministry of Trade, Industry and Energy, Kora Energy Agency, and RE100 having the highest weights in that order. This appears to be due to MTIE’s ‘2025 Renewable Energy Convergence Support Competition’ and interest in companies’ voluntary participation in electricity use through eco-friendly renewable energy sources. [data not shown]

## 3. Conclusions

Although articles create social issue, the level of interest in the issue is also reflected in the article. In this sense, the issue of radiation is of limited interest only to related organizations or people, and although there are many more positive effects of radiation, it becomes a national concern only when a negative issue arises. In this respect, the general public is likely to be exposed to only negative issues about radiation, and thus acquire only negative knowledge. Therefore, it is necessary to think about the correct understanding of radiation and how to convey this to the general public.

Lastly, one thing that is regrettable is that when conducting a search using KPF, if you search multiple times with the same conditions, the results are different within the margin of error. However, since there was no significant change in the main interests, the analysis was conducted based on the search results.

## REFERENCES

- [1] bigkinds.or.kr
- [2] Construal-level theory of psychological distance. Psychological Review. Trope.Y., & Liberman.N (2010)