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A Study on Understanding of Nuclear Power Energy

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1. Introduction

Efficient energy sources are to be on demand owing to the domestic natural resources deficiency in the future. For decades, the high power energy demand rates, two digits, beyond the economic development rates were recorded. The government put the nuclear power energy as a main energy source, because of the limitation of fossil fuels energy, air pollution, and the unpractical use of several substitute energies. The country made a plan to construct an additional decades of nuclear power plants until 2030. According to the nation's survey on nuclear power plant, while most of people, 79.3%, were in favor of the necessity of nuclear power plant, 22.6% were in favor of the stability of nuclear power plant, and only 13.6% were in favor of building the nuclear power plant in their back yard (Korean Gall-up and KNCF 1999).

Recently, it is very difficult for nation's nuclear power developments to be taken because anti-nuclear, and environment group activities have been strongly against the nuclear policy, especially on setting up the candidate place of nuclear power waste disposal facilities. Therefore a nation's adjustment on nation's understanding on nuclear related group is needed, such as a muli-dimensional publicity strategy, namely, converting strategy from necessity for nuclear power into stability and eco-oriented future energy.[1][2]

In this study, we surveyed the recognition of nuclear power energy for the junior school offspring and teacher living near to the nuclear power plant. The importance of this study is that if offspring have a false or negative recognition on nuclear power energy teacher should give correct information on nuclear power energy from early education in class.

Therefore, the purposes of this study are to understand how offspring recognize the nuclear power energy, and give means to develop the various publicity tools for people.

2. Study problems

We set problems to accomplish the purpose of the study as blows.

First, How offspring recognize on nuclear power energy according to sex and grades?

Second, How far recognition differs between nuclear power plant staff's offspring and non-staff's ones?

3. Contents and Models

In the study, we set a place of residence as independent factor and recognition as dependent factor to know the difference of the recognition of nuclear power energy between the staff's offspring and non-staff's ones.

<Table 1> Recognition model on nuclear power energy

Independent factor	Dependent factors		
Staff's offspring	Recognition	Nuclear Power plant	Safety
			Necessity
			Economical efficiency
			Environmental control
		Nuclear waste disposal	Safety
			Necessity
			Comparison with NPP
Non-staff's offspring		Etc,.	Reliability on working forces
			Safety on atomic hospital
			NIMBY phenomenon
			A degree of danger in daily life
			An ideal energy sources
			Building a nuclear power plant

4. Method of Study

We accomplished the experiments through the preliminary investigation to know the recognition on nuclear power energy of offspring.

4.1 Object of Study

Setting "B" middle school offspring and teacher near to Uljin nuclear power plant as objects of study

4.1.1 Data Processing

We accomplished t-test to know the difference of recognition on nuclear power energy according to offspring' sex and grades. Second, we accomplished t-test to know the difference of recognition on nuclear power energy for nuclear power plant staff's offspring and non-staff's offspring. Third, we accomplished t-test to know the difference of recognition on nuclear power energy for teachers. Forth, we accomplished t-test to know the difference of recognition on nuclear power energy for offspring and teachers.

The points of recognition marks are shown in <Table 4>.

<Table 2> Points of recognition marks

Answer	I think Positively	I think so	I don't know	I don't think so	Never
Point	1	2	3	4	5

5. Experiment Results

5.1 Difference of recognition of nuclear power plant for staff's and non-staff's offspring

We accomplished t-test to know the difference of recognition on nuclear power energy for nuclear power plant staff's offspring and non-staff's offspring.

5.1.1 Difference of recognition of safety for nuclear power plant

<Table 3> Difference of recognition of safety for nuclear power plant

Divisions	Cases	Avg	Dev	t – value	Df	Sig
Staff's offspring	97	3.27	0.82	3.555	238	0.000
Non-Staff's offspring	143	2.93	0.65			

p<0.05

As shown in <Table 3> in response to the question「The birth of deformed livestock near to the NPP is owing to the nuclear radiation」, The result was meaningful. The recognition of safety is higher for the staff's offspring.

5.1.2 Difference of recognition of necessity for nuclear power plant

<Table 4> Difference of recognition of necessity for nuclear power plant

Divisions	Cases	Avg	Dev	t – value	Df	Sig
Staff's offspring	97	2.35	0.78	-2.100	238	0.037
Non-Staff's offspring	143	2.57	0.83			

p<0.05

As shown in <Table 4> in response to the question「The development of nuclear energy must increase, by which various fields are applicable such as cancer treatment」, .The result was meaningful. Both offspring recognized positively.

5.1.3 Difference of recognition of economical efficiency for nuclear power plant

<Table 5> Difference of recognition of economical efficiency for nuclear power plant

Divisions	Cases	Avg	Dev	t – value	Df	Sig
Staff's offspring	97	2.10	0.88	-1.651	238	0.100
Non-Staff's offspring	143	2.29	0.82			

p<0.05

As shown in <Table 5> in response to the question「Nuclear power is cheaper than fuels and hydraulic power」, The recognition of economical efficiency is higher for the staff's offspring. Both offspring, however, have the right recognition of the economical efficiency of nuclear power energy.

5.1.4 Difference of recognition of environmental control for nuclear power plant

<Table 6> Difference of recognition of environmental control for nuclear power plant

Divisions	Cases	Avg	Dev	t – value	Df	Sig
Staff's offspring	97	2.98	0.82	1.734	238	0.084
Non-Staff's offspring	143	2.80	0.73			

p<0.05

As shown in <Table 6> in response to the question「Owing to the hot water discharge in nuclear power plant, fish raising industry is badly damaged」, Non-staff's offspring recognize that environmental affect of nuclear power plant is more negative than staff's offspring.

5.2 Difference of recognition of nuclear waste for staff's and non-staff's offspring

5.2.1 Difference of recognition of safety for nuclear waste

<Table 7> Difference of recognition of safety for nuclear waste

Divisions	Cases	Avg	Dev	t – value	Df	Sig
Staff's offspring	97	2.88	1.00	-2.079	238	0.039
Non-Staff's offspring	143	3.13	0.85			

p<0.05

As shown in <Table 7> in response to the question「Nuclear waste disposal center doesn't do damage to the agricultural affairs」, The result was meaningful. The recognition of safety of nuclear waste for the staff's offspring is more positive than the non-staff's offspring.

4. Conclusion

In this study, we surveyed the recognition of nuclear power energy for the junior school offspring and teacher living near to the nuclear power plant. The importance of this study is that if offspring have a false or negative recognition on nuclear power energy teacher should give correct information on nuclear power energy from early education in class.

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