Transactions of the Korean Nuclear Society Spring Meeting
Chuncheon, Korea, May 25-26 2006

A Suggestion for the universality of the U.S. nuclear policy GNEP

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1. Background of the GNEP

During the last several decades, the world has tried to prevent the proliferation of nuclear weapons throughout the nations. However after the collapse of the ex-Soviet Union, this kind of concern has been focused more on the challenges by non-state actors to possess nuclear weapons [1]. Also signs have been detected for a withdrawal from the global nuclear non-proliferation regime to develop nuclear weapons after an acquisition of enrichment or reprocessing technologies under the mask of a peaceful application of nuclear energy. After all, these issues suggest that a control of enriched uranium and plutonium is the key [2], despite the world's efforts on the non-proliferation of nuclear weapon in the past.

For the reduction of greenhouse gases, to protect the environment and to keep it clean, and to preserve fossil resources, expansion of nuclear energy can be considered as one of the alternatives to the existing energy technologies using fossil resources. However an expansion of nuclear energy raises concerns on the proliferation of dual use technologies, such as enrichment and reprocessing. Thus such perceptions were raised recently that no more proliferation of enrichment or reprocessing can be admitted while we seek the promotion of nuclear energy.

2. Highlights of the GNEP

The GNEP (Global Nuclear Energy Partnership) announced by U.S. Administration in February 2006 seeks dual purposes. These are the promotion of nuclear energy and the non-proliferation of nuclear weapons. The seven major programs suggested under the GNEP are as follows [3]:

- Expand domestic use of nuclear energy
- Demonstrate more proliferation resistance recycling
- Minimize nuclear waste
- Develop advanced burner reactor
- Establish reliable fuel services
- Demonstrate small-scale reactor
- Develop enhanced nuclear safeguards

There is a program that does not affect the interests of other nations directly, such as the expansion of a domestic use of nuclear energy. However the majority of programs could affect the utilization of nuclear energy in the other nations in the near future whether they want the changes or not.

3. Suggestions for the universality of the GNEP

The GNEP contains some discriminatory elements whatever its original idea is aiming at. For example, the categorizations of the user nations and the supplier nations, and the restrictions on the participation for an advanced fuel cycle development could be listed.

The establishment of reliable fuel services can be summarized that the so-called supplier nations guarantee a reliable supply of nuclear fuel to the so-called user nations who declare to forgo enrichment and reprocessing technologies in advance. The choice by a nation whether it would belong to a user nation can be done voluntarily.

It is not clear whether the supplier nations cover the whole nuclear fuel cycle services or parts of the services. However, the qualification of the supplier nations to possess the existing commercial scale enrichment or reprocessing facilities displays a controlled element in categorizing the supplier nations. Considering such a categorization is based on a limitation of the accomplishment of a whole fuel cycle of each user nation, measures should be taken to compensate for such an inequality.

The inequality could be partially resolved if supplier nations, user nations, and the third group who do not belong both nations but have some of fuel cycle capacities transact with each other. Under this scheme, the so-called third group gets an enrichment service from a supplier nation to sent fresh fuel to a user nation. And the spent fuel arising in the user nation is sent to the supplier nation to be stored or reprocessed.

In addition to evaluate the effectiveness of the GNEP for a global non-proliferation regime, it is also important to evaluate whether a cartel by supplier nations has any elements for contrasting a world trade regime pursuing a fair competition. Another example of the discriminatory element in the GNEP is the limitation in the participation in the development of advanced recycling technology. Though the limitation partially stems from a protection of existing reprocessing technology, it could violate a future valid possession of a reprocessing capacity.

Such a weakness could be adjusted if the so-called third group develops proliferation resistance fuel cycle technology, such as a dry reprocessing, as it could diminish the impact of the technology monopoly by the supplier nation.

Also the GNEP fixes the current situation to a long-term period. A country considering its first introduction of nuclear power can be categorized as a user nation. However the country could operate dozens of nuclear power plants in the future. In that time, the country could insist in the validity of its own fuel cycle facilities including enrichment and reprocessing. Thus the GNEP may be understood as a limited solution for the near term, not as an ultimate solution for the long term.

4. Conclusion

The GNEP has many constructive ideas. The waste reduction technology, once realized, could drastically improve many problems arising from spent fuel stockpiles. The Advanced burner reactor could be a valuable solution to diminish a proliferation threat.

Despite such advantages, some of the inequality elements in the GNEP could result in a more severe situation as time goes on. To avoid such undesirable results, it is suggested to review the GNEP in a more cooperative manner. As the current philosophy in the GNEP stems from a protection of existing rights of the countries who already possess sensitive nuclear technologies, the future solution may be addressed as to how to share such rights with other nations in a balanced manner.

References

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[3] The Global Nuclear Energy Partnership, Greater Energy Security in a Safer Cleaner World, US DOE, February 6, 2006