

Application of Environmental Management Tool to Nuclear Energy Policy related with Environmental Issues

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Abstract

Energy policy is addressing environmental issues and energy conservation has come to be regarded as an important element of environmental policy. According to current situation, concern for environmental preservation has increased the demand for more efficient management and environmentally sound and sustainable development of nuclear energy. Also International Standardization Organization (ISO) has been in the standardization of the detail methodologies of environmental management tool in ISO 14041 - 44 series. In accordance with this movement, Life Cycle Assessment (LCA) has received much attention in industries and decision makers. Therefore, this study explained the international trend of environmental management system and validated the application of LCA to nuclear energy system and radioactive waste management. Also the controversial issues when LCA was directly applied to nuclear industries was pointed out and suggested the new concept to improve the methodologies for the calculation of radiological impact within the LCA framework. Finally, as a preliminary result, LCA of once-through fuel cycle were studied using suggested methodologies. This result could be used as the source materials for the further development of comparative assessment of nuclear and non-nuclear energy as well as decision-making of back-end fuel cycle alternatives.

슈페터의 성장이론과 원자력 연구개발

Schumpeterian Growth Theory and Nuclear R&D

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요 약

이 논문에서는 슈페터의 기술혁신을 통한 성장이론과 연구개발 체제의 혁신을 효과적으로 달성하기 위해 대두되고 있는 제4세대 연구관리 체제를 분석하고, 이를 원자력 연구개발 활동에 접목하기 위해 고려하여야 할 요소들을 도출한다. 그 요소들은 거시적 측면에서는 원자력 연구개발 체제의 운영방법과 국가혁신체제의 필요성이고, 미시적 측면에는 혁신기술의 보유와 기술확산의 필요성 그리고 기술구조와 구현능력 등을 들었다.