

수소동위원소의 취급저장 운반기술 연구
Safe Handling and Storage of Hydrogen Isotopes

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요약

중수로형 원자로에서 발생하는 트리튬을 안전하게 취급 저장 운반하기 위한 기술을 연구하였다. 트리튬 안전 취급을 위한 실험 장치를 제작하여 성능을 시험하였다. 저장 용기 기술을 분석하고 수소동위원소 저장 성능에 관련된 제반 실험을 수행하였다. 운반용기는 원자력 관련 법규를 충족하도록 설계 제작 시험하였다.

Intelligent Surveillance System Based on the Self-organized Feature
Mapping and RGB Color Plane Threshold Approach

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Abstract

After about 10 years of technology development and closer international cooperation with the US, AECL and the IAEA, DUPIC project has come to the point where hot material was introduced in the DUPIC process and has been in normal use. DUPIC safeguards program has been conducted to support DUPIC fuel development study from the earliest stage of the research. The major safeguards technology involved here is to design and fabricate a neutron coincidence counting system for process accountability, and also an unattended continuous surveillance system. Unattended continuous surveillance systems result in large amounts of data, which require much time and effort to inspect. Therefore, it is necessary to develop software that automatically pinpoints and diagnoses the anomalies from the data. In this regard, this paper presents a novel concept of a continuous surveillance system that integrates visual surveillance and NDA data by the use of a neural networks based on the self-organized feature mapping. The integral part of the multi-sensory system and analytical paradigm may provide an effective technological alternative for safeguarding of high-level radioactive material handling facilities.