

## Design Requirements of A Consolidating Dry Storage Module for CANDU Spent Fuels

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### Abstract

This paper presents a technical description of design requirement document covers the requirements of the MACSTOR/KN-400 module, which is under development to densely accommodate CANDU spent fuels with more efficient way. The Design Requirement is for the module that will be constructed within a dry storage site after successfully licensed by the regulatory body. This temporary outdoor spent fuel dry storage facility provides for safe storage of spent nuclear fuel after it has been removed from the plant's storage pool after being allowed to decay for a period of at least 6 years. The MACSTOR/KN-400 module is being designed to the envelope of site environmental conditions encountered at the Wolsong station. The design requirements of MACSTOR/KN-400 module meets the requirements of the appropriate Codes and Standards for dry storage of spent fuel from nuclear power reactors such as 10CFR72, and Korea Atomic Energy Act and relevant technical standard.

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### 조사핵연료봉의 산화층 두께측정

### The Measurement of Oxide Layer Thickness of the Irradiated Fuel Rod

구대서, 박광준, 석호천, 김은가, 민덕기  
한국원자력연구소  
대전광역시 유성구 덕진동 150

### 요약

산화층 두께측정시스템 장치를 사용하여 고리 2호기에서 2주기동안 연소한 핵연료봉의 산화층의 두께를 측정하였다. 표준시편을 사용하여 본 산화층 두께측정시스템 장치를 교정하였고, 또한 산화층 두께측정방법을 설정하였다. 본 핵연료봉의 산화층 두께는 핵연료봉 하부의 수  $\mu\text{m}$ 에서 시작하여 핵연료봉 중앙부로 진행함에 따라 점차 증가하였고 핵연료봉 하단으로부터 3000mm 근방에서 산화층 두께가 최대 23 $\mu\text{m}$  이었다. 또한 본 산화층 두께측정 시험의 결과는 핵연료봉의 금속조직시험의 결과와 잘 일치하였으며, 이것은 본 핵연료봉의 산화층 두께측정시험이 상당한 신뢰성이 있다는 것을 검증한다.