



## CERTIFICATE OF COMPETENT AUTHORITY FOR RADIOACTIVE MATERIAL PACKAGE DESIGN

- CERTIFICATE NUMBER:** UAE/0001/AF-96 (Rev 2)
- EXPIRY DATE:** 25 Jan 2020
- ISSUED TO:** KEPCO Nuclear Fuel Co., Ltd.  
989 Beon-Gil, Daedeok-daero, Yuseong-gu, Daejeon, 305-353, Korea  
[www.knfc.co.kr](http://www.knfc.co.kr)

The Federal Authority for Nuclear Regulation (FANR), certifies that the package described below has been demonstrated to meet the regulatory requirements for the packaging for fissile radioactive materials as described in FANR regulations, FANR-REG-13 "Regulation for the Safe Transport of Radioactive Materials" and IAEA Safety Requirements TS-R-1, "Regulations for the Safe Transport of Radioactive Material", 2009 Edition.

- PACKAGE IDENTIFICATION:** PIONEER 1-L (from certificate ROK/0040/AF-96(Rev 5))
- PACKAGE DESCRIPTION AND AUTHORIZED RADIOACTIVE CONTENTS:**

- Description:** PIONEER 1-L may carry up to two (2) unirradiated uranium dioxide fuel assemblies for an APR1400 nuclear power plant.
- Drawings:** PIONEER 1-L packaging is manufactured in accordance with KEPCO Nuclear Fuel Co., Ltd, Drawing No. A0-7A7D2-950-P01 (Rev 3).
- Contents:** Unirradiated uranium in the form of uranium dioxide fuel pellets contained within fuel rods. The <sup>235</sup>U enrichment shall not exceed five (5) percent by weight total uranium.
- Criticality Safety Index (CSI):** Zero (0)  
The criticality safety analysis of the package is documented in "Request for FANR's Multilateral Approval of the Fresh Fuel Shipping Cask", Enclosure 3, dated 27 April 2012, and "Safety Analysis Report for the HERMES PWR Fresh Fuel Shipping Package", Rev D.
- QA Requirements** The QA requirements are documented in "Request for FANR's Multilateral Approval of the Fresh Fuel Shipping Cask", Enclosure 4, dated 27 April 2012.

- CONDITIONS:**

- Each user of the PIONEER 1-L package must have in its possession a copy of this certificate and all relevant documents necessary to properly prepare the package for transportation.
- Each user must prepare the PIONEER 1-L package in accordance with the relevant documentation and FANR applicable regulations.
- This certificate does not relieve the consignor or carrier from compliance with any of the requirements of the government of any country through or into which the package will be transported.

Ian Grant  
Deputy Director General - Operations  
Issued in Abu Dhabi  
May 2016