

## International Transport of Uranium Materials from China

*Xu Chizhi, Long Xiuaowei*

China Nuclear Energy Industry Corporation, Beijing, China

*G. Achilles*

Nuclear Cargo + Service GmbH, D-6450 Hanau, Germany

The paper gives an example of international cooperation in the transport of frontend materials from a country entering large-scale application of nuclear energy.

The case described in the paper refers to the shipment of frontend materials from China to Europe.

The CNEIC organization has the task to organize international transfer of nuclear material.

Due to problems encountered with shipping lines CNEIC started to perform shipments by air which is of course a costly way to do the job.

With the assistance of NCS CNEIC entered into discussions and negotiations with COSCO, the national Chinese shipping line in order to make the much cheaper sea transport possible. One of the difficulties to overcome was the passage through the Suez canal. This was not due to problems raised by the canal authorities but it was necessary to establish the proper way of applying for the passage by the shipping line and to clarify insurance matters. During the first passage through the canal CNEIC, NCS and port authorities were present to assure smooth operation.

The effort of "paving the way" was accompanied by a training program organized by NCS. CNEIC key personnel had training at the NCS office in Germany related to transport regulations and the practice of nuclear fuel cycle transports. It was followed by a training "on the job" during the organization and performance of the first sea transport. In turn NCS personnel were introduced into site specific conditions in China by CNEIC.

In the meantime about 150 containers loaded with yellow cake and about 120 cylinders with low enriched UF<sub>6</sub> have been smoothly transported by sea from Shanghai through the Suez canal to European ports.