

## CHALLENGES FOR PHYSICAL PROTECTION OF INDONESIA EXPERIMENTAL POWER REACTOR

Currently Indonesia are expecting to build its first Experimental Power Reactor which has HTGR technology. The fuel design of the reactor will have the same type of fuel with HTR-10, a 10 MWt reactor in China. The fuel design of the reactor is pebble bed where the fuel is a collection of nuclear material inserted in small sized spheres containing structural and moderating material and a pebble bed core that will contain a bulk load of 27,000 spherical fuel elements. The refuelling scheme will use continuous multi-pass cycle where each pebble fuel will go through 5 operation cycles before taken out of the core as a spent fuel. Hence, these fuel design and fuel cycle management will provide different security challenges than the implementation in the common existing reactors. Modularity and size of the reactor which will be a small modular type of reactor will also have impact on the implemented physical protection. The implementation of Security-by-Design as the design progresses provides an approach to meets the security requirements needed.

### Gender

Male

### State

Indonesia

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