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CHALLENGES FOR INDONESIA EXPERIMENTAL POWER REACTOR SAFEGUARDS

Currently Indonesia are expecting to build its first Experimental Power Reactor which has HTGR technology. The fuel design of the reactor, which have the same type of fuel with HTR-10 in China, will provide its own challenges. It will use pebble fuels which does not fit or seem appropriate to the IAEA safeguards approach because the fuel is in a bulk form, rather than discrete items. Because the nuclear fuel is a collection of nuclear material inserted in small sized spheres containing structural and moderating material and a pebble bed core will contain a bulk load of 27,000 spherical fuel elements, it could be classified as a "Bulk-Fuel Reactor." Hence, the IAEA should develop unique safeguards criteria. Utilizing bulk verification techniques to verify the plutonium content in spent fuel pebbles and improving burn-up computer codes spesifically design for pebble bed core will provide better understanding of the core and spent fuel make up. For all of these techniques to work the design of the reactor will need to accommodate safeguards and material accountancy measures to a far greater extent than has thus far been the case. The implementation of Safeguards-by-Design as the design progresses provides an approach to meets these safeguards and accountancy needs.

Which "Key Question" does your Abstract address?

NEW1.1

Topics

NEW1

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