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Storing the Spent Nuclear Fuel in Dry Casks Licensed for a Century as an Alternative to Recycling Solution RADOVAN MILINCIC, Drexel University/Gloucester County College — Management of spent nuclear power reactor fuels is one of the most urgent problems in nuclear technology. Yearly production of new spent fuel is in the range of thousands of tons, topping a couple of hundred thousand tons of spent fuel already. This material is extremely radioactive and currently there is no adequate international policy, control or management regarding it. I propose here an intermediate term solution to this problem, which will be technologically and economically sustainable: interim spent-fuel storage as an alternative to reprocessing. The reprocessing inherently increases the net amount of the plutonium, which can be used for production of nuclear arms. Moreover, it is an expensive process with the net effect of producing different type of radioactive waste. In particular, the development of a dry cask for nuclear waste storage on site and transport, licensed for a period of hundred years would provide a significantly less expensive solution in the recent future, giving a needed relief to crowded spent-fuel storage pools. Currently in the U.S, NRC licenses existing storage casks for 20 years; and licenses for some of the dry cask storage facilities in the U.S. are about to expire. The extended life dry casks will provide sufficient intermediate period toward a more efficient and/or technologically advanced solution for spent fuel.

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