



New problems of safe RAM transportation

**Guskov V.D., Lazorkin V.I., Turina N.V., Vasiljev V.Y., Vorontsov V.V.
KBSM, St-Petersbourg, Russia**

The following calculation result analysis has been performed for consequences of terrorists' attack (with the light antitank grenade launcher (LAGL) using) on a nuclear fuel being transported.

A cumulative jet, formed in a grenade explosion (explosion is the result of the grenade impact on a nuclear fuel cask), can break steel wall through 500 - 1000 mm thick. That is much thicker than a steel wall of any transporting nuclear fuel cask. The calculations were made for the hit on a cask of TK-13 type, with a spent fuel from VVER-1000 nuclear power reactor. The cumulative jet makes a hole of about 10 mm in the cask wall, so causing destruction of 5 kg spent nuclear fuel of about 3.9×10^3 Ci activity.

The result analysis shows that the activity, releasing through the cask wall breach, may count up to 30 Ci.

The radioactive contamination zone (where an annual effective doze exceeds 1 mSv) at the activity release expands on an area about 1 km², that is considered unacceptable.

KBSM has elaborated a technical solution concerning transported spent nuclear fuel cask protection against LAGL shot. This solution is based on annihilation of a grenade approaching to the cask.

The possibility of making a hole in the cask body at the terrorists' attack demands some hardening the IAEA Rules regarding the nuclear safety (in particular it is strongly needed to suppose filling a cask with water in transportation accidents).