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DISPOSAL OF MELANJ OXIDIZER IN AZERBAIJAN: NAMSA ACHIEVEMENTS

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ABSTRACT

Melanj is the generic name used in countries of the Former Soviet Union (FSU) and Warsaw Pact for a series of nitric acid based oxidizers commonly used in liquid fuelled anti-aircraft and tactical missile rocket motors. It is primarily a mix of concentrated nitric acid containing dissolved nitrogen oxides. Small concentrations of fluoride ions or iodine atoms, normally in the form of hydrogen fluoride or iodine, are added to inhibit the reaction of the acid on the steel and aluminum storage containers. The withdrawal of Soviet Forces coupled with the limited need for operational ground to air missiles resulted in little or no maintenance being undertaken. The storage tanks were left to deteriorate.

It is estimated that 100 000 tonnes of Melanj remain in countries of the FSU and former Warsaw Pact, 1 200 tonnes of it being in Azerbaijan. Most of it is held in steel or aluminum bulk storage containers, all of which are more than 15 years old, and some considerably older. Most of the tanks have deteriorated as the inhibitors have been exhausted, resulting in leaks into the ground and the escape of nitrous oxide fumes into the air. The high risk of leaks represents a serious threat to the environment and public health.

With the NATO Programme for Security through Science as financial support and the NATO Maintenance and Supply Agency (NAMSA) as the project's executing agency, a mobile melange treatment plant has been developed as a Science for Peace project and installed in Azerbaijan to begin neutralising the melange stored in the country. Since 04 July 2006, official inauguration of the plant, more than 5 tonnes of melange have been converted every day into a non-hazardous, low-grade fertiliser material using an environmentally-safe chemical process complying to the Rotterdam and Stockholm Hazardous Chemicals and Wastes Conventions, and the European Directives on Hazardous Waste Management.

The Azeri government is participating in the project, which is implemented under Azerbaijan's Individual Partnership Action Plan, by supplying the necessary infrastructure, consumables and logistic support.

NATO's ultimate goal is to demonstrate the effectiveness of this conversion technology in order to assist also other Partner countries in melange disposal projects.

This unique capability will be reviewed.