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**Leo Szilard Lectureship Award Talk: Nuclear disarmament after the cold war**

PAVEL PODVIG, Stanford University

Now that the cold war is long over, our thinking of nuclear weapons and the role that they play in international security has undergone serious changes. The emphasis has shifted from superpower confrontation to nuclear proliferation, spread of weapon materials, and to the dangers of countries developing nuclear weapon capability under a cover of a civilian program. At the same time, the old cold-war dangers, while receded, have not disappeared completely. The United States and Russia keep maintaining thousands of nuclear weapons in their arsenals, some of them in very high degree of readiness. This situation presents a serious challenge that the international community has to deal with. Although Russia and the United States are taking some steps to reduce their nuclear arsenals, the traditional arms control process has stalled – the last treaty that was signed in 2002 does not place serious limits on strategic forces of either side. The START Treaty, which provides a framework for verification and transparency in reduction of nuclear arsenals, will expire at the end of 2009. Little effort has been undertaken to extend the treaty or renegotiate it. Moreover, in recent years Russia has stepped up the efforts to modernize its strategic nuclear forces. The United States has resisted joining the Comprehensive Nuclear Test Ban Treaty and has been working on controversial new nuclear weapon development programs. The U.S. missile defense program makes the dialogue between Russia and the United States even more difficult. The reluctance of Russia and the United States to engage in a discussion about drastic reductions of their nuclear forces undermines the case of nuclear nonproliferation and seriously complicated their effort to contain the spread of nuclear weapon technologies and expertise. One of the reasons for the current lack of progress in nuclear disarmament is the contradiction between the diminished role that nuclear weapons play in security of nuclear weapon states and the inertia of cold-war institutions that are involved in their development and support. Dealing with this contradiction would require development of new mechanisms of cooperation between nuclear weapons states and their strong commitment to the cause of nuclear nonproliferation. One important area of cooperation is development of a framework that would prevent the spread of nuclear materials and technology at the time when increasing number of countries is turning toward expanded use of nuclear power to cover their energy needs.