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## **Abstract for the March, 2011 meeting of the American Physical Society**

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### **Early Concepts for Controlling Nuclear Technology: The Acheson-Lilienthal Report Reconsidered.**

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In March, 1946, shortly after the conclusion of World War II, the US government issued "A Report on the International Control of Atomic Energy ". This sixty-page text which became known as the Acheson-Lilienthal Report was the result of deliberations of a five-person commission, comprised of four prominent industrialists and J. Robert Oppenheimer, with the latter widely considered to have been the primary author. Many of the recommendations contained in this insightful document have been adopted and form the basis of international policy as implemented by the UN IAEA. Examples of successful suggestions were the sharing of peaceful nuclear technology and establishment of a system of inspections. Examples of measures which were not adopted include establishing an internationally-controlled monopoly for supplying uranium (encompassing mining, refining, and the fuel cycle), and proposals for "denaturing" uranium fuel. The latter proposal entailed adding alternative radioactive materials to uranium fuel rendering it unsuitable (without significant reprocessing) for weapons. The appeal of these recommendations has evolved with technological and scientific advancement since 1946, making some of them good candidates for revival.