The second development which led to a serious questioning of the non-proliferation régime was India's "peaceful nuclear explosion" in May 1974 which had used plutonium derived from the reprocessing of spent fuel from an unsafeguarded research reactor. To some countries, this incident revealed the need for more explicit and comprehensive non-proliferation commitments. Specifically, steps would have to be taken to minimize the (perceived) proliferation risk associated with reprocessing.

It was in this international environment that the major nuclear suppliers — the Nuclear Suppliers Group (NSG) — met in an effort to reach agreement on "guidelines" to cover their nuclear exports. This meeting was convened largely in response to a Canadian and U.S. initiative. The resulting guidelines, which were published in a January 1978 information circular issued by the IAEA (INFCIRC/254) clearly represent a high-point in international co-operation with respect to non-proliferation. The guidelines augment the principles of the IAEA Statute and the NPT and constitute a significant upgrading in the attention to be paid to non-proliferation in the context of international nuclear commerce.

The important elements of the NSG guidelines are:

- a) items on the NSG "Trigger List", that is, the defined list of nuclear items that should trigger the application of the requirements of the guidelines, are to be transferred only upon an assurance that they will not be used in any activity that would result in a nuclear explosive device;
- b) Trigger List items should be transferred only when covered by IAEA safeguards;
- c) technology related to reprocessing, enrichment or heavy water production facilities should be subject to the requirements in a) and b);
- d) special controls and considerations should be applied to the export of "sensitive technologies", that is, enrichment and reprocessing technologies and to the export of enrichment and reprocessing plants;
- e) transfers of reprocessing, enrichment or heavy water production facilities or related technology would require that IAEA safeguards be applied to facilities of the same type built during an agreed upon period in the recipient country;
- f) retransfers of Trigger List items should take place only when assurances have been given by the third party which are the same as those covering the original transfer;