



Model HEU Code of Conduct

Central Objective of this Code of Conduct: To eliminate the threat posed by highly enriched uranium (HEU) in the civilian sector.

Preamble:

The undersigned [government, government agency, or private organization],

Recognizing the common interest of all humankind in the use of nuclear energy for peaceful purposes,

Reaffirming the crucial importance of nuclear reactors for scientific research, training, materials testing, and nuclear medicine,

Noting that HEU is not required for the generation of civilian nuclear power and recognizing that there are no longer technical justifications for using HEU in most civilian facilities,

Desiring to prevent nuclear terrorism and combat nuclear proliferation,

Recognizing that the threat of nuclear terrorism constitutes a growing danger to international peace and security, a concern that is reflected in United Nations Security Council resolution 1540 (2004) and the International Convention on the Suppression of Acts of Nuclear Terrorism (2005),

Acknowledging that HEU is of particular concern in this context, due to the technical feasibility of constructing a crude nuclear explosive device from HEU without transmutation or further enrichment,

Recognizing that while measures to secure and eliminate HEU are currently under way as part of commendable international initiatives, such as the Global Threat Reduction Initiative, further action is required to reduce the possibility that terrorist groups could gain access to HEU,

Recalling the recognition of the nonproliferation and security benefits of converting civilian facilities from highly enriched to low-enriched uranium in a variety of international statements, including:

- The International Nuclear Fuel Cycle Evaluation report issued in 1980,
- The Final Document issued at the 2000 Review Conference to the Treaty on the Non-Proliferation of Nuclear Weapons
- The joint statement issued after the 2007 meeting of the Global Initiative to Combat Nuclear Terrorism
- G-8 summit statements
- U.N. Security Council Resolution 1887,

Believing that universal adherence to this Code of Conduct does not in any way diminish the need for additional international legal instruments that commit states to manage HEU responsibly according to best practices, eliminate the production of fissile material for weapons uses, improve security of fissile materials worldwide, or improve the monitoring and verification of facilities that employ or have stockpiles of HEU,

Desiring through this Code to contribute to minimizing the threat posed by HEU and promoting the elimination of this material as a vital contribution to the environment for peaceful nuclear development and international cooperation in the peaceful uses of nuclear energy,

Declare a commitment to the following goals:

(1) **Converting to low-enriched uranium all civilian installations** that employ HEU and for which there is a continuing need as soon as technically feasible, and closing all civilian facilities employing HEU if they no longer are needed, and securing the HEU materials from such facilities.

(2) **Discouraging all countries and other stakeholders from undertaking or supporting new civilian projects** involving HEU fuel or other HEU materials other than for the purpose of down-blending that fuel to LEU. Wherever practicable, access to research opportunities, nuclear trade, and other benefits from the peaceful use of atomic energy will be denied to operators that do not cooperate with HEU minimization programs and such benefits will be provided to non-HEU users on a preferential basis.

(3) *[For governments]* **Reducing unnecessary HEU transfers:** Undertaking not to transfer or sell HEU for any purpose, domestically or internationally, to any state or other entity, except on an interim basis to facilities for which (A) there is no alternative nuclear reactor fuel or target enriched in the isotope 235 to a lesser percent than the proposed HEU export; (B) the proposed recipient of that uranium has provided assurances that, whenever an alternative nuclear reactor fuel or target can be used in that reactor, the recipient will use that alternative in lieu of highly enriched uranium; and (C) the recipient is actively pursuing conversion to LEU.

Furthermore, any HEU transferred to such a facility:

- i) must be used exclusively for peaceful purposes and not for any nuclear explosive purpose;
- ii) must be subject to IAEA Safeguards under an agreement whose duration corresponds at least to the actual use of the HEU by the recipient and which provides that the rights and obligations of the parties continue to apply in connection with that HEU and any special fissionable material produced, processed or used in connection with it until the Agency has terminated safeguards on them in accordance with its normal procedures;
- iii) will only be shipped to a facility that will make use of the material within one month of its receipt, with the timetable foreseen for utilization and the end use certified by the recipient before shipment;
- iv) must be placed under effective physical protection in accordance with the requirements of paragraph 5 of these guidelines in order to prevent unauthorized use and handling;
- v) must be transported internationally in accordance with the requirements of the Convention on the Physical Protection of Nuclear Material;
- vi) will not be further transferred to a third party without the prior consent of the undersigned ; and
- vii) the irradiated HEU materials and any surplus unirradiated HEU will be returned to the country of origin or an international storage site (should such a facility be established) within one year after use has ended.

(4) Assisting the IAEA and other international organizations and programs to promote HEU minimization and encouraging the IAEA to establish a comprehensive global inventory of HEU in civilian use, including information on facility activities and security.

(5) Maintaining the highest standards of physical protection, control and accounting to protect existing HEU stocks at levels of security appropriate for nuclear weapons, including:

- storing unirradiated HEU at a minimum number of sites with security measures able to counter multiple, armed groups of attackers;
- testing physical protection measures through force-on-force exercises at regular intervals;
- building and maintaining a security culture at any facility with HEU on site;
- considering irradiated HEU to be “self-protecting” (sufficiently radioactive to cause disorientation in a short time—acute radiation poisoning) only at levels above 10 Gray/hour at one meter and affording maximum physical protection measures to any HEU material that is not “self-protecting.”

(6) Sharing of reactor and other facilities, as well as conversion technologies, including through the establishment of research reactor coalitions (also called “centers of excellence”) in various regions to enable scientists to have access to the best research facilities and to alleviate any disadvantages that may be caused by the elimination of HEU in research reactors.

(7) Developing and maintaining a strategy for the management and eventual elimination of HEU that will ensure the safe and secure use, storage, and eventual elimination of the material, taking into account:

- the need to avoid contributing to the risks of nuclear proliferation, especially during any period of storage before the HEU is either irradiated as fuel in a reactor or after it has lost its “self-protection”;
- the need to protect the environment, workers, and the public;
- the resource value of the material, the costs and benefits involved, and budgetary requirements;
- the significance of disincentives for HEU use; and
- the importance of reducing stockpiles as soon as practical.

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To further enhance security, we are committed to facilitating the consolidation of HEU to as few facilities as possible, and the downblending of HEU stockpiles. Further, we will support the development of alternative technologies to replace the use of HEU wherever technically possible, committing to international cooperation in the development of such alternative technologies, and will give preferential consideration to non-HEU produced services.

Definitions:

Highly enriched uranium (HEU) means uranium having an enrichment of 20 percent or above of the fissionable isotope uranium-235, regardless of its chemical and physical form.