Annex 11

LIST OF ABBREVIATIONS, UNITS AND GLOSSARY OF TERMS

AGR
British Advanced Gas-Cooled Reactor.

ATR
Japanese Advanced Thermal Reactor.

Back-end (of the fuel cycle)
Those nuclear fuel cycle processes and activities concerned with the treatment of spent fuel discharged from reactors including disposal of radioactive wastes.

BNFL
British Nuclear Fuels plc.

Burn-up
The total energy released per unit mass of a nuclear fuel; it is commonly expressed in mega- or gigawatt-days per tonne (MWd/t or GWd/t).

BWR
Boiling Water Reactor.

CANDU
Canadian Deuterium Uranium Reactor; a type of heavy water reactor.

CLAB
Swedish Intermediate Storage Facility.

Cladding
An external layer of material applied directly to nuclear fuel or other material that provides protection from a chemically reactive environment and containment of radioactive products produced during the irradiation of the composite. It may also provide structural support.

COGEMA
Compagnie Générale des Matières Nucléaires (France).

Conversion
The operation of altering the chemical form of a nuclear material to a form suitable for its end use.

Decommissioning
The work required for the planned permanent retirement of a plant from active service.

Direct disposal
Fuel cycle in which fuel goes through the reactor once; no spent fuel reprocessing is foreseen.

DM
German Mark.

DOE
US Department of Energy.

Discounting
A procedure used to convert the value of money earned or spent in the future to a present value.

ECU
European Currency Unit.

Encapsulation
Processes associated with preparation of spent fuel for disposal.

Enrichment
i) The fraction of atoms of a specified isotope in a mixture of isotopes of the same element when this fraction exceeds that in the naturally occurring mixture;
ii) Any process by which the content of a specified isotope (uranium-235, etc.) in an element is increased.

Fabrication
The process of preparing nuclear fuel pellets, and cladding them to make fuel elements and the incorporation of elements into assemblies ready for the reactor.

Fission
The physical process whereby the nucleus of a heavy atom is split into two (or, rarely, more) nuclei with masses of equal order of magnitude whose total mass is less than that of the original nucleus.

Fission products
Nuclides produced either by fission or by the subsequent radioactive decay of the nuclides thus formed.

Front-end (of the fuel cycle)
Those nuclear fuel cycle processes and activities concerned with the production of fuel for a reactor.

Fuel (nuclear)
Material containing fissile nuclides which, when placed in a reactor, enables a self-sustaining nuclear chain to be achieved.
Fuel cycle
The sequence of processing, manufacturing and transportation steps involved in producing fuel for a reactor, and in processing fuel discharged from the reactor including disposal of radioactive wastes.

g
Gram.

GWe
Gigawatt electric.

Half-life (radioactive)
For a single radioactive decay process, the time required for the activity to decrease to half its value by that process.

HLW
High Level Waste.

HM
Heavy Metal (uranium, plutonium and other actinides in spent fuel).

IAEA
International Atomic Energy Agency.

IEA
International Energy Agency.

ILW
Intermediate Level Waste.

Indifference value (of plutonium)
This is the value that plutonium would have in order to produce MOX fuel and equivalent uranium oxide fuel at equal cost.

Isotopes
Nuclides having the same atomic number (i.e. identical chemical element) but different mass numbers.

kg
Kilogram.

kWh
Kilowatt hour.

l
Litre.

lb
Pound.
**Levelised cost**
Levelised cost spreads total fuel cycle cost over total output to arrive at a figure which, if charged for each kWh, would exactly balance costs and income.

**LLW**
Low Level Waste.

**Load factor**
A ratio of the energy that is produced by a facility during the period considered to the energy that it could have produced at maximum capacity under continuous operation during the whole of that period.

**LWR**
Light Water Reactor.

**m**
Meter.

**M**
Million.

**MOX fuel**
Mixed Oxide (uranium dioxide and plutonium dioxide) fuel.

**mv**
Money value.

**MWd/t**
Megawatt-day per tonne.

**MWe**
Megawatt electric.

**MWt**
Megawatt thermal.

**NEA**
OECD Nuclear Energy Agency.

**NEA/NDC**

**OECD**
Organisation for Economic Co-Operation and Development.

**p.a.**
Per annum.
PNC
Power Reactor and Nuclear Fuel Development Corporation (Japan).

Pu
Plutonium.

PuF
Plutonium fissile.

Pu(t)
All isotopes of plutonium, not only fissile.

PWR
Pressurised Water Reactor.

R & D
Research and Development.

Reprocessing
A generic term for the chemical and mechanical processes applied to fuel elements discharged from a nuclear reactor. The purpose is to remove fission products and recover fissile (e.g. uranium-235, plutonium-239), fertile (e.g. uranium-238) and other valuable material.

SKr
Swedish Krone.

S.F.
Spent Fuel.

SKB
Swedish Nuclear Fuel and Waste Management Company.

Spent fuel
Nuclear fuel removed from a reactor following irradiation.

SWU
Separative Work Units, a measure of the effort required to enrich a material in a given isotope.

t
Tonne.

THORP
Thermal Oxide Reprocessing Plant (UK).

U
Uranium.
Waste management
All activities that are involved in the handling, treatment, conditioning, transportation, storage and disposal of waste.

WREBUS
Water Reactor Extended Burn-up Study (IAEA).

US mill
A unit of currency. One tenth of a US cent (US$0.001).

VHLW
Vitrified High Level Waste.

Waste repository
Prepared geological site suitable for permanent disposal of radioactive waste.

y
Year.