

The Ethical Issues of Nuclear Energy Industry.



The Green Think Tank of Turunch Foundation, N.J USA

Hayrettin Kilic Ph.D



Unethical Foundations- Landmarks of Nuclear Age-Power.

- Atom for Peace
- Nuclear Weapon tests
- International Atomic Energy Agency **IAEA**
- Nuclear Non-proliferation Treaty. **NPT**
- International Court of Justice **ICJ**
- The World Economic Forum (**WEF**)
Global Risk Landscape
- Unethical conduct of Nuclear States and Nuclear power Plant Operators. **Deny, Delay, Deceive**

Ethics and Moral

- **Ethic** consists simply of the actions an individual takes on himself/herself. It is self-determinism. Distinguishing Right and wrong conduct. Differentiating Good and Evil.
- **Moral** is usually defined as a code of good conduct based on experience to serve as a uniform measures for conduct of individuals and groups.

- **Individual Ethic/Morality**; Able one to know /gauge right from wrong conduct. Standards of *individual ethics* may differ from that of professional and common morality
- **Professional Ethic/morality**; Sets standards that are often higher than that of common morality, professional bodies are created to ensure that these standards are adhered to like IEAE??
- **Common Ethic/Morality**; common ethics that are conceptualized as a set of shared norms and principles that the majority of reasonable and thinking people in society would like to see realized.
- Common morality is considered as a ***point of reference*** in public decision-making. It has been an usefull political tools that is available for the politicians as *basis for the evaluation* of any public decision-making

The Ethics and logic of Science are Universal.
They transcend geographic Frontiers and
ideological divides. Joseph Rotblat.
Nobel Peace Laureate 1995.



Beginning of Unethical Nuclear Age

Atomic Renaissance

- In October 1945, **President Truman** sent a message to congress and proposed creating a U.S Atomic Energy Commission (AEC) to promote and develop use of nuclear energy for peaceful or otherwise.
- In the mean time, U.S congress proved the establishment of powerful **U.S Atomic Energy Commission** (AEC), as per President Truman's order, which was charged to keep U.S monopoly of nuclear energy/weapons as a first priority, and promote the peace full use of nuclear energy.
- At very the same time **Soviet Union** started their nuclear program marking the beginning of Cold war.

“Don’t forget Los Alamos is Our Enemy, Russians Are Our Competitors.”

- AEC started an aggressive nuclear power research program at **Los Alamos, Oak Ridge, Sandia and Argonne Laboratories**, focusing on both nuclear weapons design and nuclear energy.
- Secrecy relating to nuclear power programs at these research centers was to be maintained at the highest level and **the death penalty** would be prescribed for anybody passing secrets to a foreign country.
- Even the AEC created a toxically competitive atmosphere among the US research centers. A group of researchers/scientists in Sandia lab hung a sign on a wall of their coffee room, saying: **“don’t forget Los Alamos is our enemy, Russians are our competitors.”**

Nuclear Weapon Test. 2055

US-1032, Russia -715, France-210, England-45,
China-45, India-4, Pakistan-2 Israel-??

III-3. WEAPON TEST SITES

The two major nuclear weapon states, the former Soviet Union and the USA, conducted numerous weapon tests within their territories at two locations: Semipalatinsk in Kazakhstan and the Nevada Test Site. Because of the fallout associated with atmospheric testing and with venting from some underground tests, later tests were mostly conducted at more remote locations, Pacific islands and Novaya Zemlya.

Significantly lower numbers of nuclear tests were performed by China, France and United Kingdom. In recent years a few nuclear tests have been carried out also by India and Pakistan. Due to the lack of suitable test sites within their domestic territories, France and UK carried out their tests at remote sites located in Algeria and Pacific islands (France) and Australia and Pacific islands (UK). The number of explosions and the radioactive inventories generated at the test sites are summarized below. Some radioactive material was dispersed in the environment and, at least for the amount released to the atmosphere as fine particles, became the global fallout discussed later. Explosions carried out underground or at the surface also left local contamination.

The Republic of Marshall Islands

- In March 1944 the Bikini Atoll was purchased by US government for a sum of **ten dollars**. In January 1946 Bikini Atoll became the first site for the first nuclear weapon test site after the second world war.
- Between March 1 and May 14 **1954 six Hydrogen bombs were tested, totaling 48 megaton**. The first was known as Bravo 1000 times more destructive than Hiroshima
- All the so called Castle series Hydrogen bomb explosions, totally 23 million curies, were blown into the stratosphere, it circled the world still.
- From 1950 until 1980 US government/weapon industry opposed to establish a **radioactive protection and readmission standards** in Marshall islands.

Marshall Islands

- 1986 US remove it self as a trusty of Marshall islands and Independent The Republic of Marshall islands was established (RMI).
- 2015 The RMI filled two lawsuits, based on NPT article V.I and Customary International Law. One in **US federal court against US** (which was dismissed by a US federal Judge in Feb. 1025.)
- and one in the International **Court of Justice** (ICJ) against to 9 nine countries that possess nuclear weapons. US, UK, France, Russia, China, India, Pakistan, North Korea and Israel.

EDWARD TELLER
and
ALBERT L. LATTER

Our Nuclear Future

Facts, Dangers
and
Opportunities



Tim Ahlstrom

DR. ALBERT L. LATTER



Courtesy U. of California

DR. EDWARD TELLER

The people are the real power in a democracy. It is of the greatest importance that they should be honestly and completely informed about all relevant facts concerning nuclear energy. When this has been done, the right decisions will be reached on how to use this great new power for maintaining peace and improving our lives.

*Albert L. Latter
Edward Teller*

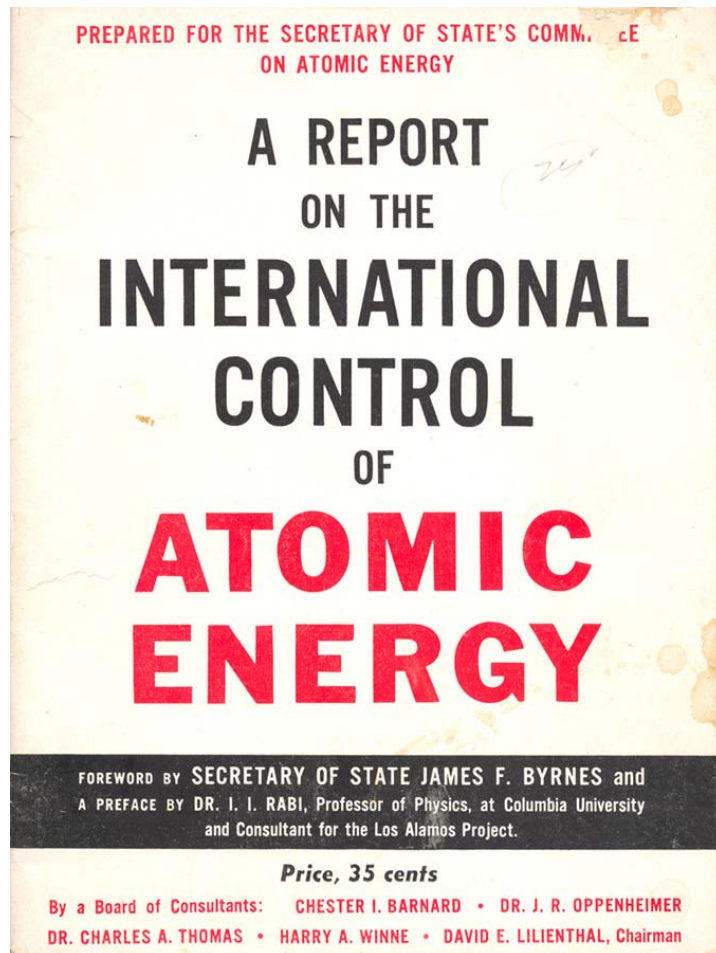
Our Nuclear Present.



First Ethical Opposition to Nuclear Power

- In March, 1946 committee formed in USA produced a report, known as the **Acheson-Lilienthal report**, containing some alarming conclusion about reciprocal nature of nuclear energy and weapons development, and most importantly, risk of nuclear weapons proliferation.
- The committee board determined that’ **“the pursuit of atomic energy and atomic bombs were in large part, interchangeable and interdependent”** and point out that uncontrolled exploitation of atomic energy by national governments cannot be safeguard

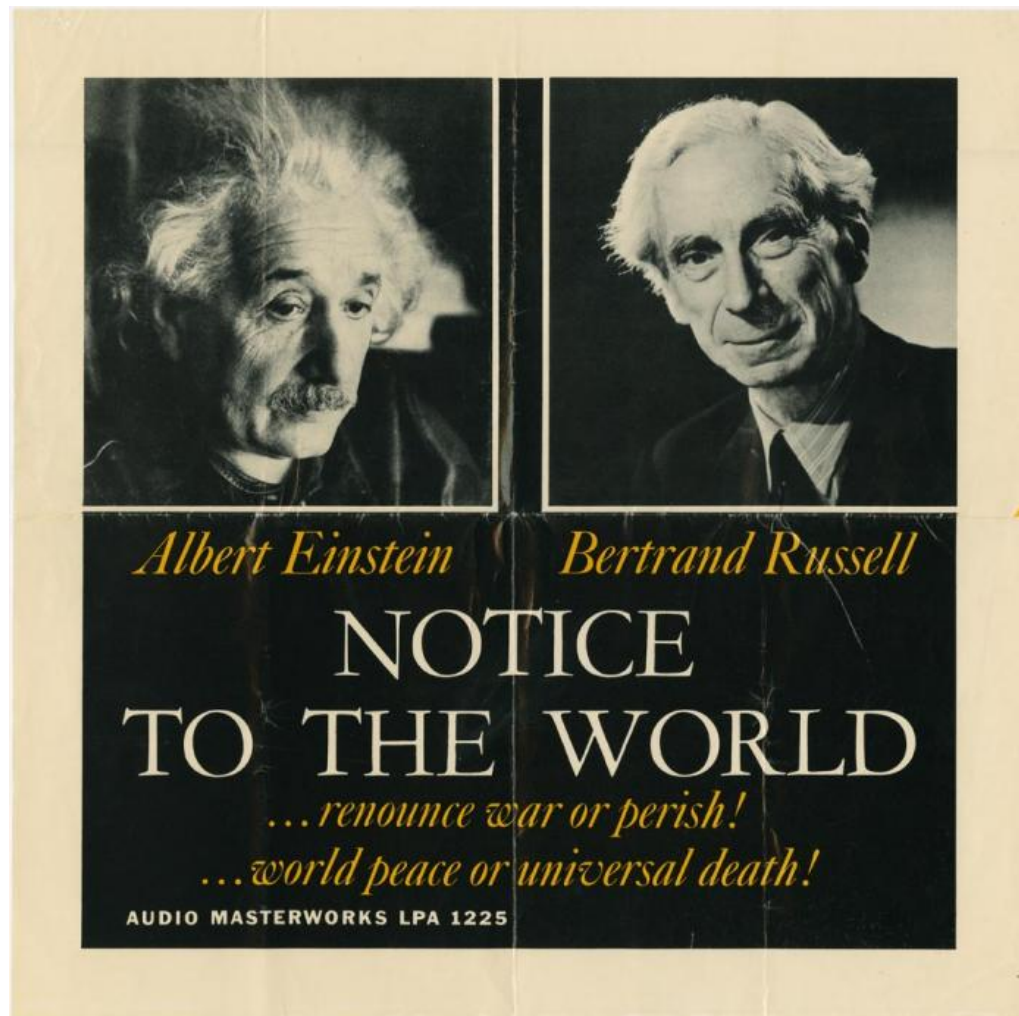
The Acheson-Lilienthal Report on the International Control of Atomic Energy Washington, D. C. March 16, 1946



- PREPARED FOR THE SECRETARY OF STATE'S COMMITTEE ON ATOMIC ENERGY A REPORT ON THE INTERNATIONAL CONTROL OF ATOMIC ENERGY.
- Foreword by Secretary of State James F. Byrnes and
- a Preface by Dr. I. I. Rabi, Professor of Physics, at Columbia University and Consultant for the Los Alamos Project
- by a Board of Consultants
 - Chester I. Barnard
 - Dr. J. R. Oppenheimer
 - Dr. Charles A. Thomas
 - Harry A. Winne
 - David E. Lilienthal, Chairman

Russell Einstein Manifesto Press Conference 1955

The manifesto urged that war must be abolished and the world's scientists must **“Assemble in conference to appraise the perils that have arisen as a result of the development of weapons of mass destruction ”.**



Russell Einstein Manifesto Press Conference 1955

Scientific resilience begins on the level of individuals; unfortunately many scientists have become increasingly complacent with political parties . A fundamental distinction that needs to be made between socially responsible scientists and lifeless and mindless nuclear weapons scientists.



The First Pugwash Conference Rotblat and Sziliard 1957

The nuclear energy-weapons establishments around the world used these ill-tempered self-important and envious scientists up today... Enrico Fermi one of the founders of modern nuclear physics ones called these scientists “a Monomaniac with much mania”,



Pugwash Movement for Nuclear disarmament

- The leader of the Soviet Pugwash group was Mikhail Milioshchikov, the vice president of Soviet Academy of science. But Lev Artsimovich and Andrei Sakharov Peter Kaptizka could not attend the Pugwash meetings because they were under the house rest? Lev Landau, a member of group who developed nuclear program in Russia was rested by Stalin. When escape the Russia he joined the Pugwash movement.
- When the Pugwash group ask the Soviet representatives participants to sign a statement.
- Their response was that let's have a single statement that both party agree to sign Americans could agree that “we do not believe in Capitalism” And other says that “we do not believe in Communism”

Perpetual Peace Versus Desirous of Thermonuclear Weapons

First public Debate in USA



- **L. Pauling**; We should make our choice known with respect to the political significance of science.
- **E.Teller**; it is not scientist's job to determine whether a hydrogen bomb should be constructed, whether it should be used or how it should be used. The responsibility rest with American people and with their chosen representatives"

Father of Soviet Hydrogen Bomb

A. D. Sakharov, I. Kurchatov

- A. Sakharov Nobel peace laureate (1975) never express any remorse for his involvement in developing Hydrogen bomb.



Soviet Union Scientist Against to Nuclear Power

- Russian scientists; M. D. Milyonşikov, L. A. Artsimoviç, A. D. Sakharov, P. Kapitza who were reluctantly involved in developing Soviet nuclear program could not voice their concerns and were not allowed to attend to the Pugwash meetings until Gorbachev's perestroika movement in 1985
- In response to President Reagan initiation of a further revitalization of the nuclear arms race by proposing the Strategic Defense Initiative, or "**Star Wars**" program. Key Soviet scientists Y. Velikov and R. Sagdeev who took over Artsimovich and Millionshchikov's positions in the Soviet as well as Pugwash meetings were dismayed with Reagan's decision. In response to the Star Wars program, they organized a committee called, **Soviet Scientists for Peace and against the Nuclear Treat**, known as CSS.

Weapons of Mass Destruction Biological-Chemical-Nuclear.

- **Biological Weapons (BWC).** In 1925 Geneva Protocol prohibits USE but not possession or development BWC weapons. But, when it become available as a poor man weapon, in 1975 a revised BWC was established which prohibits, development, production and stockpiling of biological and toxin weapons. As of 2014, 175 States are party to BWC.
- **Chemical Weapons (CW);** Chemical weapons Convention (CWC) prohibiting use of CW, entered into force in April 1997.
- **Nuclear Weapons;** Nuclear Non-Proliferation Treaty.

Dual Use of Nuclear Power

“There is no technical Demarcation between the military and civilian reactor and there never was one.” the Los Alamos Report, August 1981,

- In fact, legislation about atomic energy in the fifties, made government loans available to utilities, provided nuclear fuel almost no cost, made it possible for the US Atomic Energy Commission to leave it largely to the nuclear industry to regulate itself, with condition that burnt fuel consisting Pu-239 is a federal property??
- Since the era after the Second World War was also characterized by the Cold War and an accelerating arms race between East and West, the development of nuclear technology was, for understandable reasons of security, covered by a blanket of official secrecy.

Illegal -Secret Radiological Experiments on Humans.

- In 1994 by president Clinton's "**new openness**" initiation released over 1.6 million pages of classified documents showing that since 1940 the atomic energy commission has conducted radiological testing on human being without their consent. **Children, pregnant women as well as male prisoners were injected with orally consumed radioactive materials.**
- This secrecy also applied to commercial nuclear facilities, which made it very difficult for the public to gain access to data about potential safety problems of plants. This, in turn, made it virtually impossible for the public to influence either the development of the nuclear industry in the USA, or its regulation.
- while the right of the public to hold the industry liable for unethical acts and damages in cases of a major nuclear accident was for all practical purposes suspended.

“There is no technical Demarcation between the military and civilian reactor and there never was one.”

Los Alamos Report in August 1981

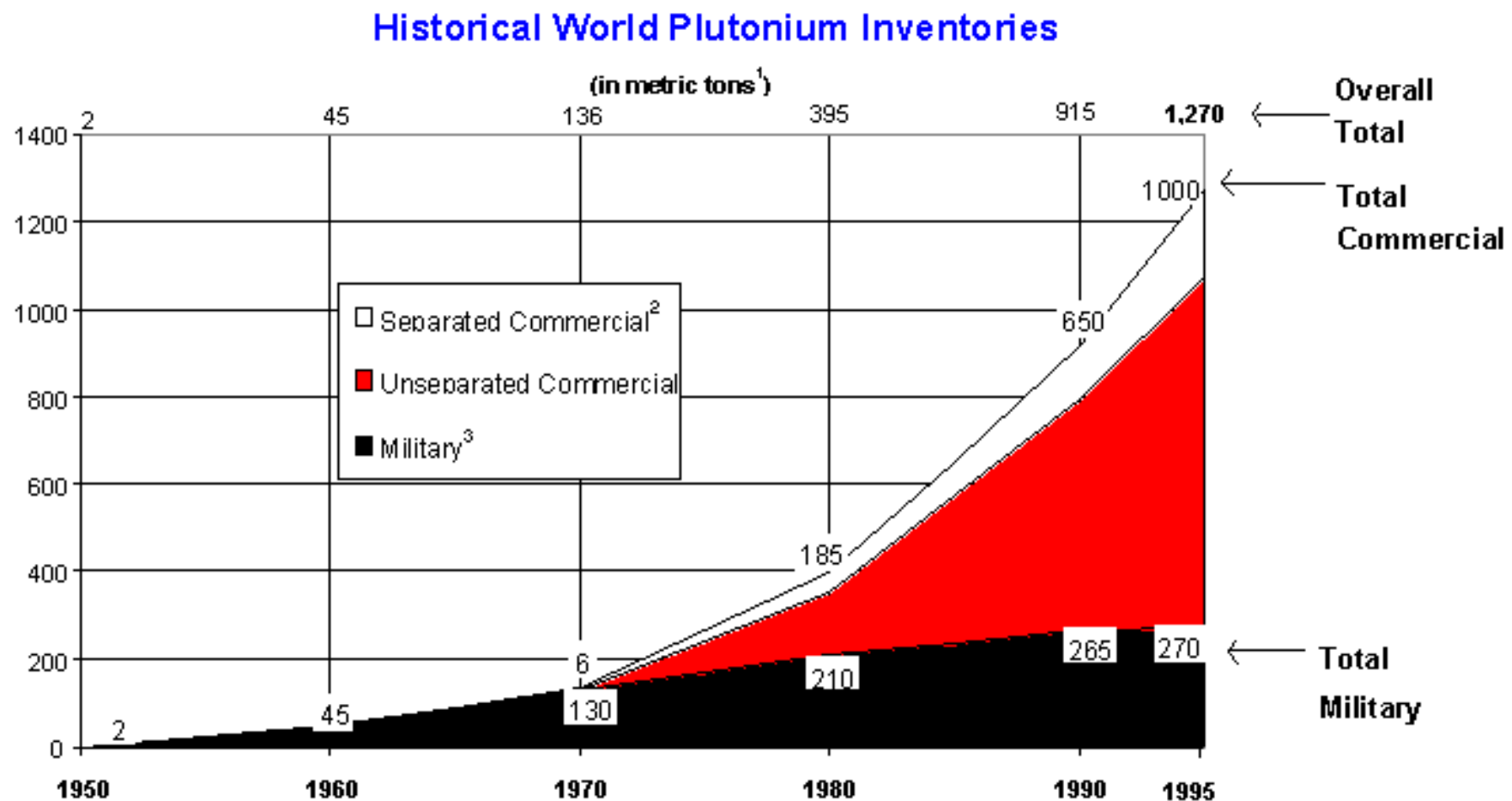
- In the United States, between 1973 and 1974, at the peak of the cold war, 15 new nuclear plants were completed per year. As of 2014
- 42 countries have fissionable material to produce weapons;
- 22 of these Countries have facilities in nuclear energy plants to produce enriched uranium or to Separate plutonium;
- 13 of these countries are active in producing enriched uranium and separating plutonium.
- 9 of these countries have nuclear weapon stockpiles.
- At the present, more than 40 countries are considering starting nuclear power programs. Including, United Arab Emirates, Jordan, Egypt, Turkey

Plutonium World

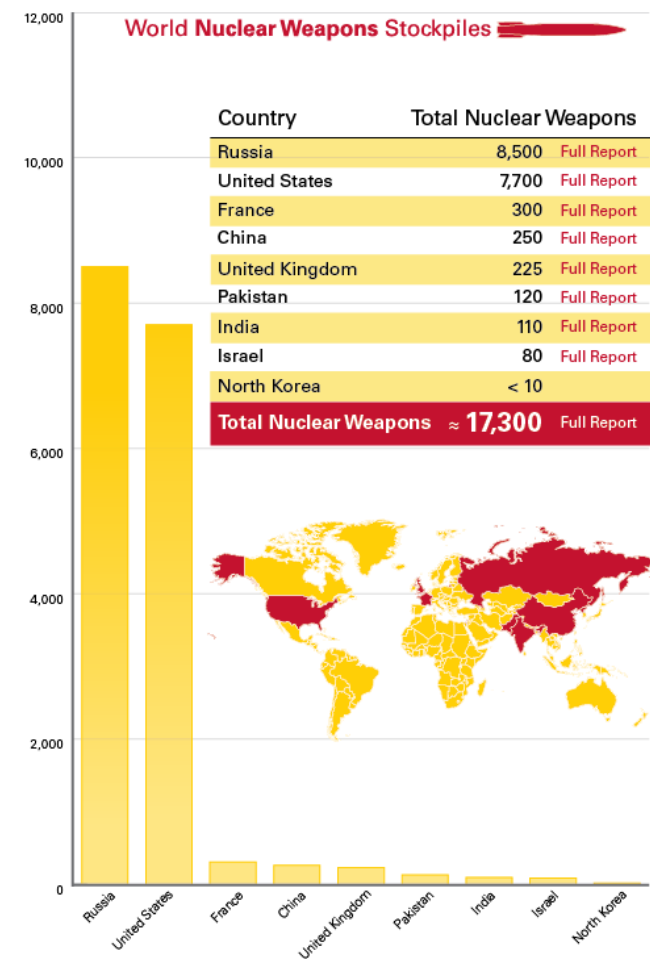
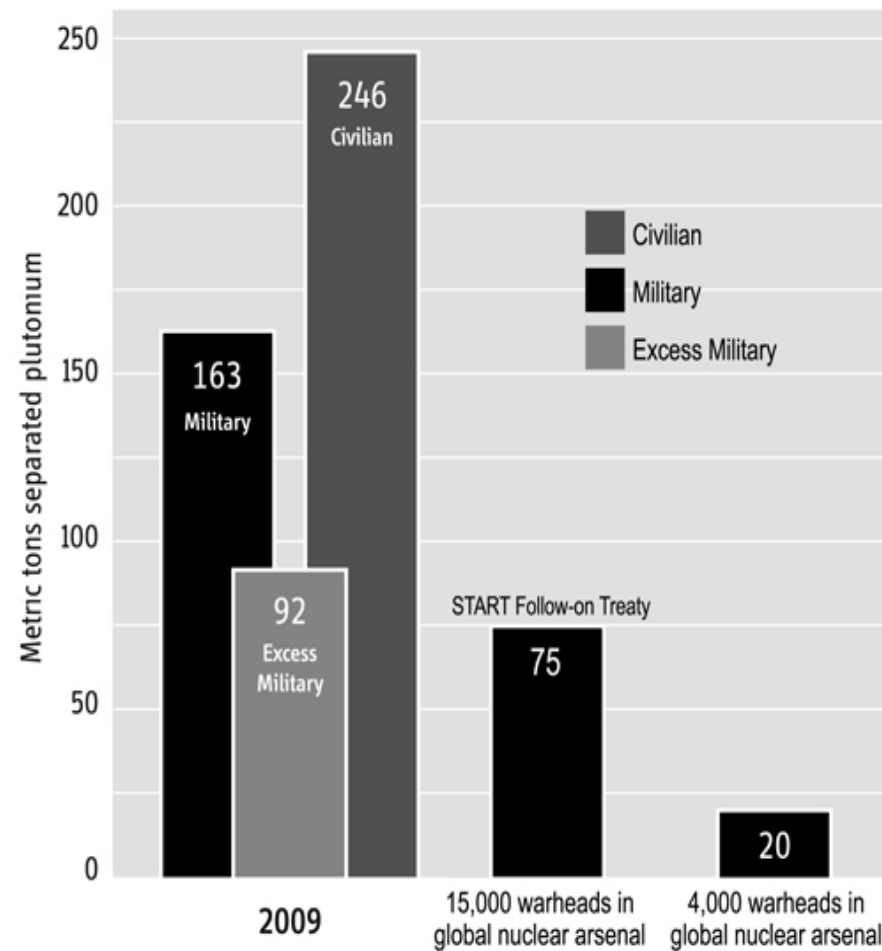
Estimated Quantities of Civilian Separated Plutonium by Country

- Source: F. von Hippel, *Managing spent fuel in the United States: The Illogic of Reprocessing, International Panel on Fissile Materials (January 2007)*. **Country Civilian Pu Stock at End of 2005 (Tones)**
- **Belgium:** 3.3 (plus 0.4 in France)
- **France:** 81.0 (30 foreign-owned)
- **Germany:** 12.5 (plus 15 in France and UK)
- **India:** 5.4
- **Japan:** 5.9 (plus 38 in France and UK)
- **Russia:** 41.0
- **Switzerland:** <2.0 (in France and UK)
- **United Kingdom:** 105.0 (27 foreign owned plus 0.9 abroad)
- **United States:** 20
- **Total 270.0**

Historical World Plutonium Inventories



Global Plutonium and Nuclear Weapons



Legality of the Threat or Use of Nuclear Weapons.

- On September 3, 1993 the World Health Organization WHO has requested an advisory opinion from International Court of Justice (ICJ) on the following question;
- ***“In view of the health and environmental effects, would the use of nuclear weapons by a state in war or other armed conflicts be a breach of its obligations under international law including the WHO Constitution?”***
- Ironically, after considering the case and receiving oral and written submissions relating to Legality of the Use by a State of Nuclear Weapons in Armed Conflict, the court did not produce an advisory opinion for WHO request. By 11 votes to 3, the court found that **WHO as an incompetence organization on the matter of legality of the nuclear weapons**, and further, its question does not fit WHO's activities under the ICJ charters, article 96 (2).

- Thanks the strong judicial and political pressure of nuclear weapon states, the court claimed that WHO, established under the UN charters with aim of concerning the health and welfare of the world population, is breaching its constitutions by requesting such a question.
- One year later, on December 15, 1994, before the landmark 1995 NPT review, The General Assembly of the United Nation submitted a question to the Court for an advisory opinion. **The UN resolution 49/75, submitted to the Court was adopted by 78 states voting in favor, 43 against, 38 abstaining and 26 not voting.** According to resolution 49/75 K which set forth the following question;

- “ *Decide , pursuant to Article 96, paragraph 1, of the charter of the United Nation to request the International Court of Justice urgently to render its advisory opinion on the following question: “**Is the threat or use of nuclear weapons is any circumstances permitted under international law**”*”
- First, the court composed of 15 judges elected by UN General Assembly and UN Security Council, had to make a decision about whether it has a jurisdiction to reply and produce an affirmative opinion on this matter. According to Articles 10, 11 and 13 of the UN Charter, **the court decides that the question put to the court in fact has relevance to its activities**, including the threat or use of nuclear weapons in International relations.

- Despite to oppositions of some western states, the Court observes that it has competence in respect to advisory opinion based on Article 65, paragraph 1 of the UN charter. Further, the Court also finds that the request of General Assembly is indeed a legal question, since the court asked to rule on the compatibility of the threat or use of nuclear weapons within the rules of International Law.
- After 18 months of hearings, including intensive political and legal debate-liberation, **on July 8, 1996** the court punted a whale advisory opinion back to UN. The final paragraph of the court advisory opinion as follows:
 - **The court decides, by thirteen votes to one, to comply with the request for an advisory opinion.** The court replies on the following manner to the question put by the General Assembly:

A. Unanimously; There is neither customary nor conventional international law any specific authorization of the threat or use of nuclear weapons.

B. By eleven votes to three; there is neither customary nor conventional international law any comprehensive prohibition of the threat or use of nuclear weapon as such.

C. Unanimously: A threat or use of force by means of nuclear weapons that is contrary to Article 2, paragraph 4, of the Charter of the United Nations and that fails to meet all the requirements of Article 51 is unlawful.

D. Unanimously: A threat or use of nuclear weapons should also be compatible with the requirements of the international law applicable in armed conflict, particularly those of permissible and rules of international humanitarian law, as well as with specific obligations under treaties and other understanding which expressly deal with nuclear

E. By seven votes to seven, by the president of the court casting vote: It follows from the above- mentioned requirements that the threat or use of nuclear weapons would generally be contrary to the rules of international law applicable in armed conflict, and particular the principles and rules of humanitarian law;

However, in view of the current state of international law, and of the elements of fact of its disposal, the Court cannot conclude definitively whether the threat or use of nuclear weapons would be lawful or unlawful in an extreme circumstances of self-defense, in which the very survival of a State would be at stake;

F. Unanimously, There exists an obligation to pursue in good faith and bring to a conclusion negotiations leading to nuclear disarmament in all its aspects under strict and effective international control”.

Is it an ethical or judicial hallucination?

- The court opinion highlighted an important fact that **universal declaration of human right** has been ignored throughout the deliberation of the court proceedings. The court decision could have two profound consequences,
- first it would constrain both the pace of vertical and horizontal proliferation and speed up the disarmaments and abolish all nuclear weapons which are no longer legal as it happened for chemical and biological weapons.
- Second, recognize that all the Nuclear testing so far not only violated the Inter and human law but mother of all the existing laws Universal declaration of Human right were violated?
- **The court simply consider survival of a nuclear state more important than the rest of beings in our plant**
- How ICJ would cast an opinion in 2015.

Nuclear Deterrence. Deterrence required more weapons, and in order for new weapons to be developed nuclear tests needed to continue. A.Teller”

- **A World Free of Nuclear Weapons . Look Who Is Talking**
- *By George P. Shultz, William J. Perry, Henry A. Kissinger and Sam Nunn. **The Wall Street Journal** January 4, 2007; Page A15*
- **Nuclear weapons today present tremendous dangers**, but also an historic opportunity.
- U.S. leadership will be required to take the world to the next stage -- to a solid consensus for reversing reliance on nuclear weapons globally as a vital contribution to preventing their proliferation into potentially dangerous hands, and **ultimately ending them as a threat to the world.**
- **Deterrence continues to be a relevant consideration for many states with regard to threats from other states. But reliance on nuclear weapons for this purpose is becoming increasingly hazardous and decreasingly effective.**

Nuclear Deterrence Ethical Overkilled

Ones steady and unchangeable is now doubtful
and vague. H.Kissinger.

- As of 2014 there are approximately 23.400 nuclear weapons located at 111 different sites in 14 countries. Half of which is trigger ready or deployable in short time. Russia (13.000) and United states (9.400) possess 96 % of these weapons.
- The other nuclear club members Britain (180), Chine (240), France (300) along with de Facto countries India (80), Israel (100), Pakistan (90) are also added this monumental list.
- In addition, non- nuclear NATO allies like Belgium, Turkey, Germany, Italy, and Holland, house about 200 U.S nuclear bombs
- In 1996, Comprehensive Nuclear test ban treaty CTBT. Signed in 1996, but has yet to enter into force.

Ethical Dilemma

Nuclear Non-Proliferation Treaty

- The NPT concept/process was initiated by Frank Aiken (Irish Minister of External Affairs) in 1958, and the Ten Commandments/Articles of NPT or holy laws of the nuclear weapon states were inscribed 49 years ago during the 1962, 18 Nation Disarmament Conference in Geneva, where the US submitted a first draft of the NPT treaty to the General Assembly of the United Nations.
- NPT was approved by a vote of 95 to 4 with 21 abstentions. A strategic nuclear alliance was created including the US, the Soviet Union, England, China, and France. In the following years, the US and the USSR played a leadership role in negotiation and a finalizing the NPT which went into force in 1970
- In early 1980's, when the number of nuclear warheads reached a peak of 70,000 around the world. Further negotiations continued every five years and finally in the 1995 review conference the treaty was extended indefinitely

Non-Proliferation Treaty. Ethical Evolution or Revolution

- The main objectives of NPT were to stop the nuclear arms race "**vertical proliferation**," achieve elimination of existing nuclear weapons, halt more countries from joining the five declared nuclear states "**horizontal proliferation**" and offer developing countries access to use nuclear power for peaceful purposes.
- A major milestone of NPT was laid in 1995 when the NPT was extended indefinitely, the NPT is being portrayed as the only universal international treaty that exists
- Soon after the Second World War, U.S government and Soviet Union along with some European countries and Canada embark on promoting peaceful use of nuclear energy, and building large scale/size dual use nuclear reactors designed to generate electrical energy, so cheap to meter, and maximize harvesting the plutonium-239 for nuclear weapons program.

Past, Present, and Future of Nuclear Non-proliferation Treaty.

- Bad, Worst, and Unpredictable. During the May of 2015 the NPT's members gather at the United Nations Headquarters in New York, for the treaty's traditional five years review and further reaffirming the preservation and integrity of the nuclear Non-Proliferation Treaty (NPT).
- The conference was opened with principle objectives of seeking a safer world for all and to achieve the peace and security and survival of a world without nuclear weapons. However, the conference also reaffirmed that NPT fosters the development of the peaceful use of nuclear energy and its fuel cycles by which the nuclear weapons industry has been maintaining a parallel progress during the last 60 years.
- Then what happened in 2105 / Failed again ? Scandal?

Ethical Invention of the Nuclear Industry. IAEA

- in 1957 International Atomic Energy Agency (IAEA) was born in United Nation to safeguard and reorganized as the only authority of UN regulating international civilian nuclear industry, inspect civilian nuclear insulations around the World, with exception of **national Labs, reprocessing -military reactors** and their plutonium inventory.
- IAEA was charged with the **dual responsibility** of promoting the useful use of nuclear energy worldwide and also conduct the official inspections in civilian nuclear facilities in the member countries so that they do not engage in nuclear weapons programs.
- As organizer-promoter of a global alliance on nuclear technology, during the last 58 years, any attempts to have a revisionist review of whether or not nuclear power in any shape and form do more harm than good, have been silenced/blocked by nuclear club and IAEA.

International Atomic Energy Agency.

“Global nuclear watchdog with no teeth”.

- After second world war, the U.S government formed a committee including Robert Openhiemer, former scientific director of the Manhattan Project, to craft U.S .A proposal/policy to submit to UN for international control of atomic energy.
- The nuclear club seized every opportunity that come along with the United Nation charters to control civilian and military nuclear industry, including re-estahabilising **their own nuclear watchdog International Atomic Energy Agency (IAEA)** and they proactively collaborated with a handful of selected counties like Israel, India, Pakistan and South Africa that eventually tested so called clandestine nuclear bombs and so for they adopted the non-compliance of UN resolutions as a their national security policy.

IAEA Nuclear Energy Series

No. NG-T-1.2

Basic
Principles

Objectives

Guides

Technical
Reports

Establishing a Code of Ethics for Nuclear Operating Organizations



IAEA

International Atomic Energy Agency



Insight Report

Global Risks 2015

10th Edition

A global risk is *an uncertain event or condition that, if it occurs, can cause significant negative impact for several countries or industries within the next 10 years.*

A trend is defined as a *long-term pattern that is currently taking place and that could amplify global risks and/or alter the relationship between them.*

The World Economic Forum (WEF)

Global Risk Landscape

- The World Economic Forum (WEF) published its 2015 Global Risk Landscape by categories and their description, including **50 low-probable, high-impact risks resulting from human activities**.
- The goal of these reports, published every year, is to build resilience to global risks. Since 60 years, the economists, scientist, environmentalists around the world have constantly proved that the cost of nuclear power, from the financial investment to the risk of proliferation, catastrophic accidents is simply too **unpredictable and high risk energy source**.
- WEF knows that radioactive emissions from Fukushima plant have exceeded several hundred folds the radioactive contamination of the bombs dropped in Hiroshima and Nagasaki combined.
- **Unfortunately, they failed again to include the global risks relating to nuclear energy in 2015 Forum's report.**

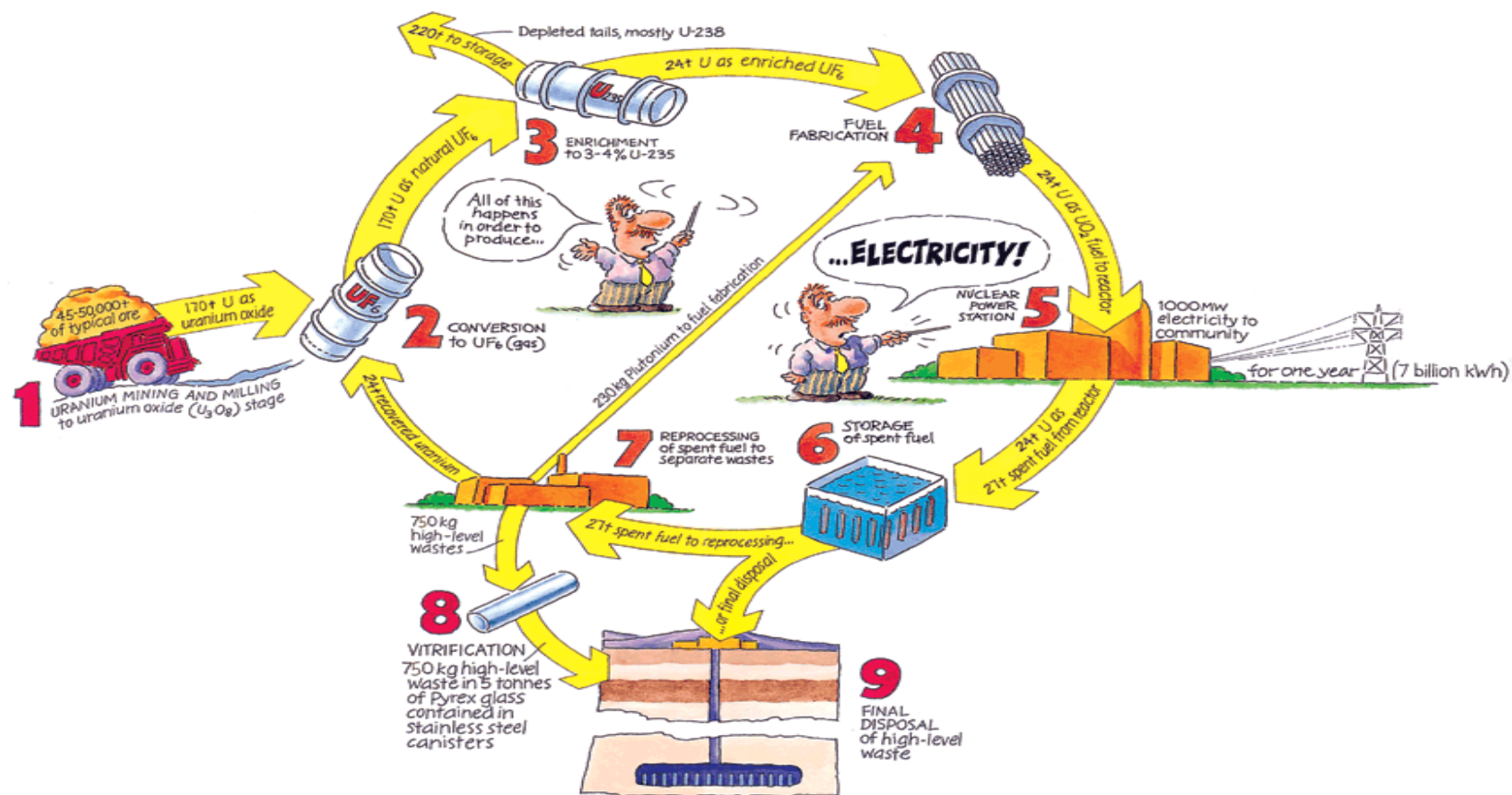
Unethical conduct of Nuclear States and Nuclear Power Plant Operators

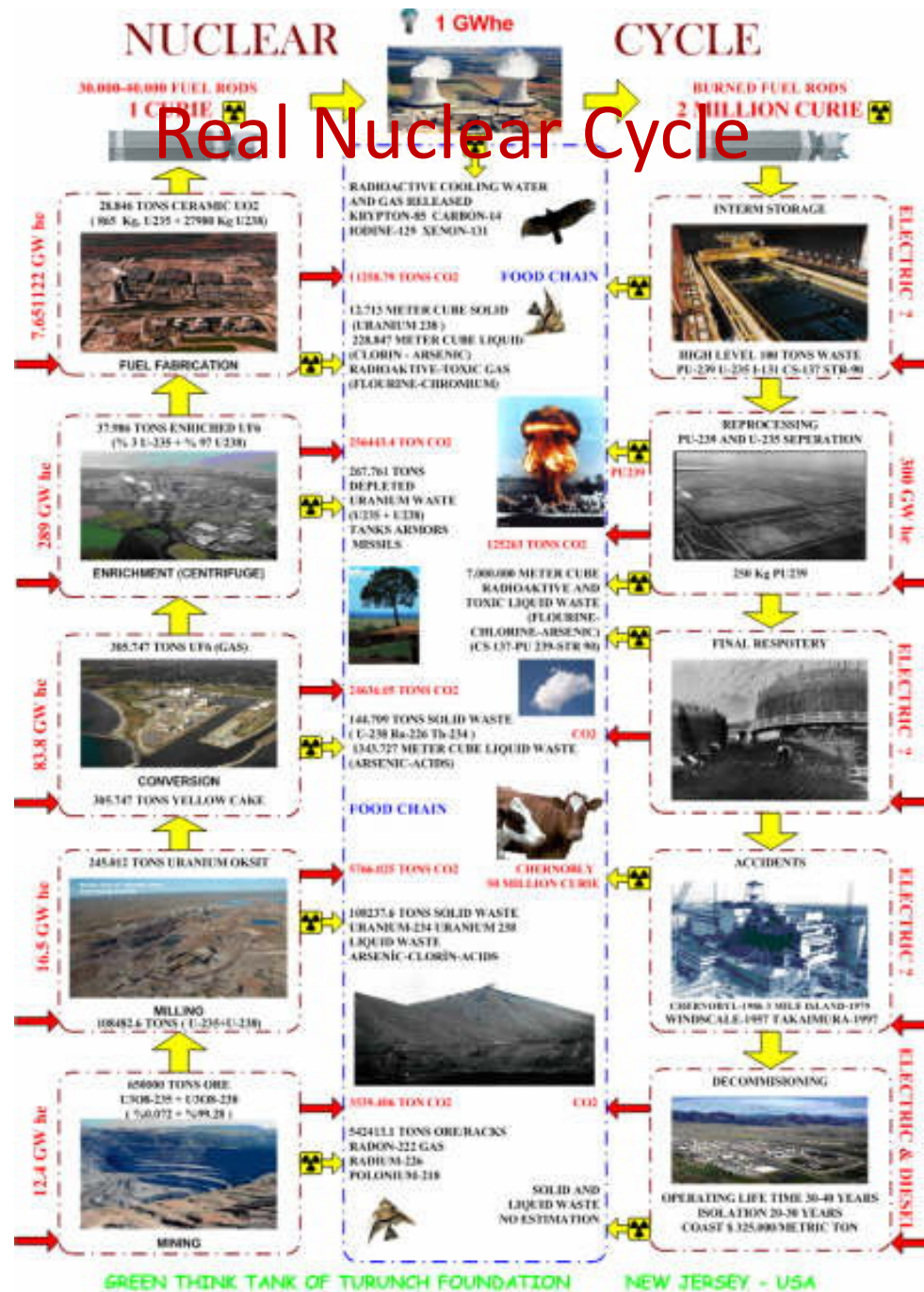
- Deny,
- Delay,
- Deceive

Nuclear Energy and Environment

Is Nuclear A Clean Energy ?

Nuclear Industry and Nuclear cycle





Ethical confessions

- J.P. Oppenheimer. “Now I am become a death, the destroyer of worlds”
- 1961 Pauling Lindus said that “the Dead will inherit the earth”
- Enrico Fermi one of the founders of modern nuclear physics ones called these scientists “a Monomaniac with much mania”,
- Nikita khrushcev said that “the living would envy the dead”
- Ronlad Reagan said “a nuclear war can not be won and must never be fought”
- H.Kissinger. Ones steady and unchangeable is now doubtful and vague.
- In December 2014 Vienna conference, Austria and 68 states put forward a document, the Vienna Pledge that seek to “fill the gap for the prohibition and elimination of nuclear weapons



Toprakla örtülü atık alanı

Açık atık alanı

Fabrika yerleşke alanı





1.1. Purpose of this publication

A code of ethics is a standard that governs and guides ethical behaviour for an organization of: its employees, and also of interactions between the organization and its external stakeholders.

This publication is intended to:

- (1) explain the benefits for nuclear industry operating organizations of having a well functioning code of ethics,
- (2) propose areas that should be considered for inclusion in a nuclear industry operating organization's code of ethics, and
- (3) explain how to develop, implement and sustain such a Code.

First Atomic Renaissance

- Despite of many nuclear scientist warning who involved in Manhattan project, AEC started an aggressive nuclear power research program at Los Alamos, Oak Ridge, and Argonne Laboratories, focusing on both nuclear weapons design and nuclear energy.
- AEC created a toxically competitive atmospheres among the U.S research centers, a group of researchers/scientist in Sandia lab hanged a sign on a wall of their coffee room, **“don’t forget Los Alamos is our enemy, Russians are our competitors”**
- In 1953, Lewis Strauss who become director of AEC right after the inguration of president Eisenhower, accepted and proved the first civilian licensed/commercial nuclear power plant application to be built in Pennsylvania in July, 1953. With a new slogan **Nuclear Energy Too Cheap To Meter.**

- The federal patronage on both sides of the Western and Soviet Union. During the fastest expansion of nuclear technology, cemented military and civilian nuclear establishment and opened avenues to unparalleled opportunities for the universities research centers, defense related contractors, companies providing massive findings for new equipment and state of the art computers.
- This revolving door that existed between military and civilian nuclear industry is still functioning under the watchful eyes and ears of IAEA **which can not inspect of central national labs that have been running with military civilian support**, the hybrid funding schemes that are still valid in many of National research labs throughout the world.

Peaceful Use of Nuclear Energy.

The politicians during the cold war have been complicit in
distorting-misleading the public since 60 years.

- In 1954 U.S Atomic Energy Act was amended to implement some of Eisenhower proposals about international cooperation's, and transfer the nuclear energy technology to friendly countries. Between 1955 and 1958 U.S government signed more than **40 nuclear cooperation agreement**, Turkey and Israel had first privilege to sign agreement and be part of this act.
- In the following years, dual use nuclear reactors began to flourish in U.S, Europe, Soviet Union, Japan, and the countries like India and Pakistan which had cooperation agreement with U.S. and clandestine countries like Israel transfer its nuclear weapon technology form France with unofficial blessing of U.S.
- U.S government and Soviet Union along with some European countries embark on promoting large scale/size **dual use reactors** designed to generate electrical energy, so cheap to meter, and maximize harvesting the pulutonium-239 for weapons program.

Pillars of Nuclear Club

- In 1968 U.S., Soviets Union, England, France, and China defiantly reaching adequate nuclear weapons, declared them self as default nuclear power making themselves an **indispensable nuclear club**.
- As of 2006 it is estimated there are **28.000 nuclear weapons** possessed by eight nations in the world, some 30.000 less than 1970's figures. Five, so called declared nuclear weapon states; United States, France, Russia, China (with estimated 400 nuclear warheads) and England harbor most of these weapons.
- A small number of nuclear weapons, 400 nuclear warheads distributed among the so called de Facto nuclear club; India, Israel, South Africa, Pakistan, and North Korea and Iran is like to join them soon.

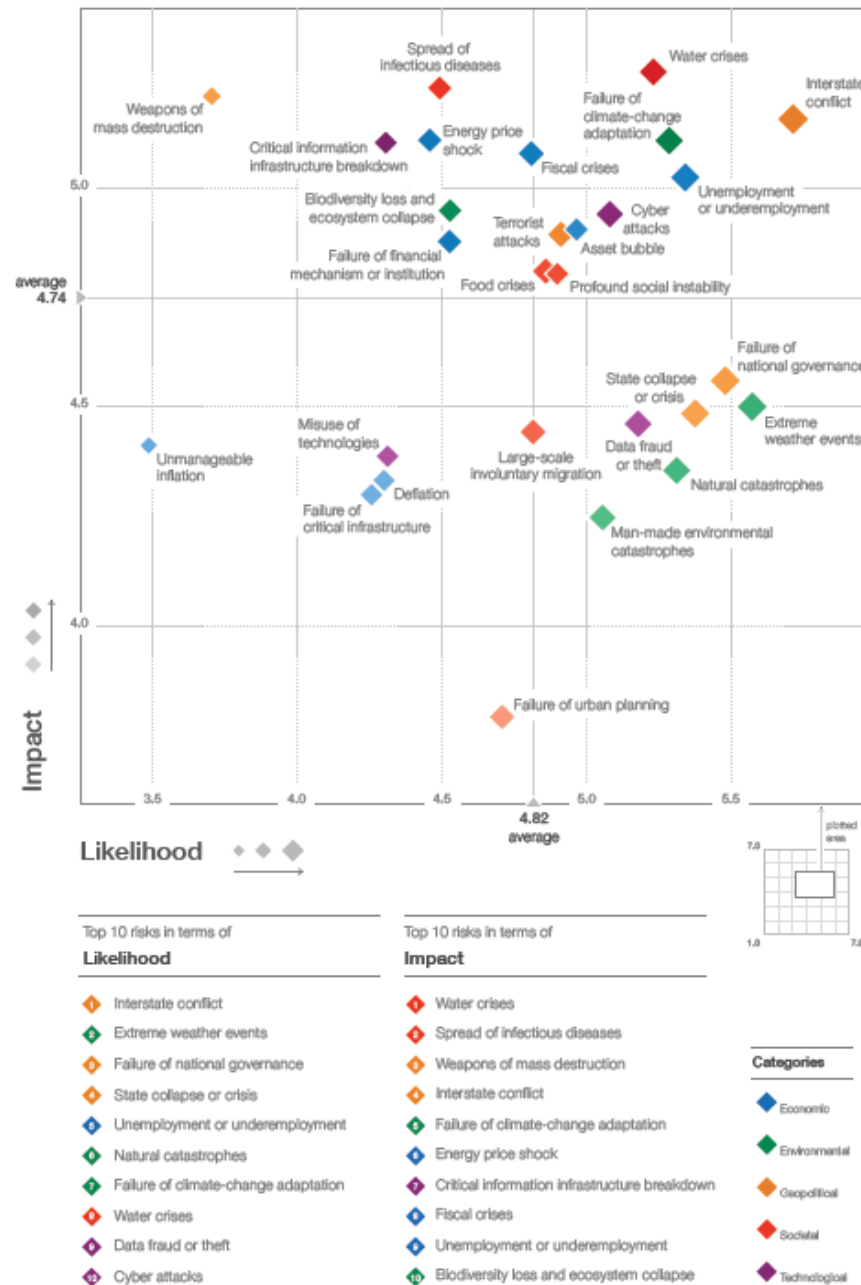
The Asian Nuclear Arm ace

- The Asian nuclear arm race started way before 1970. Chinese-Russian alliance played substantial role in China's nuclear industry program when China feared that U.S may use nuclear weapons during the Korean War. And the last two decades, the Chinese civil/military nuclear technology rapidly advanced to become real commodity for clandestine nuclear projects/activities in the developing world.

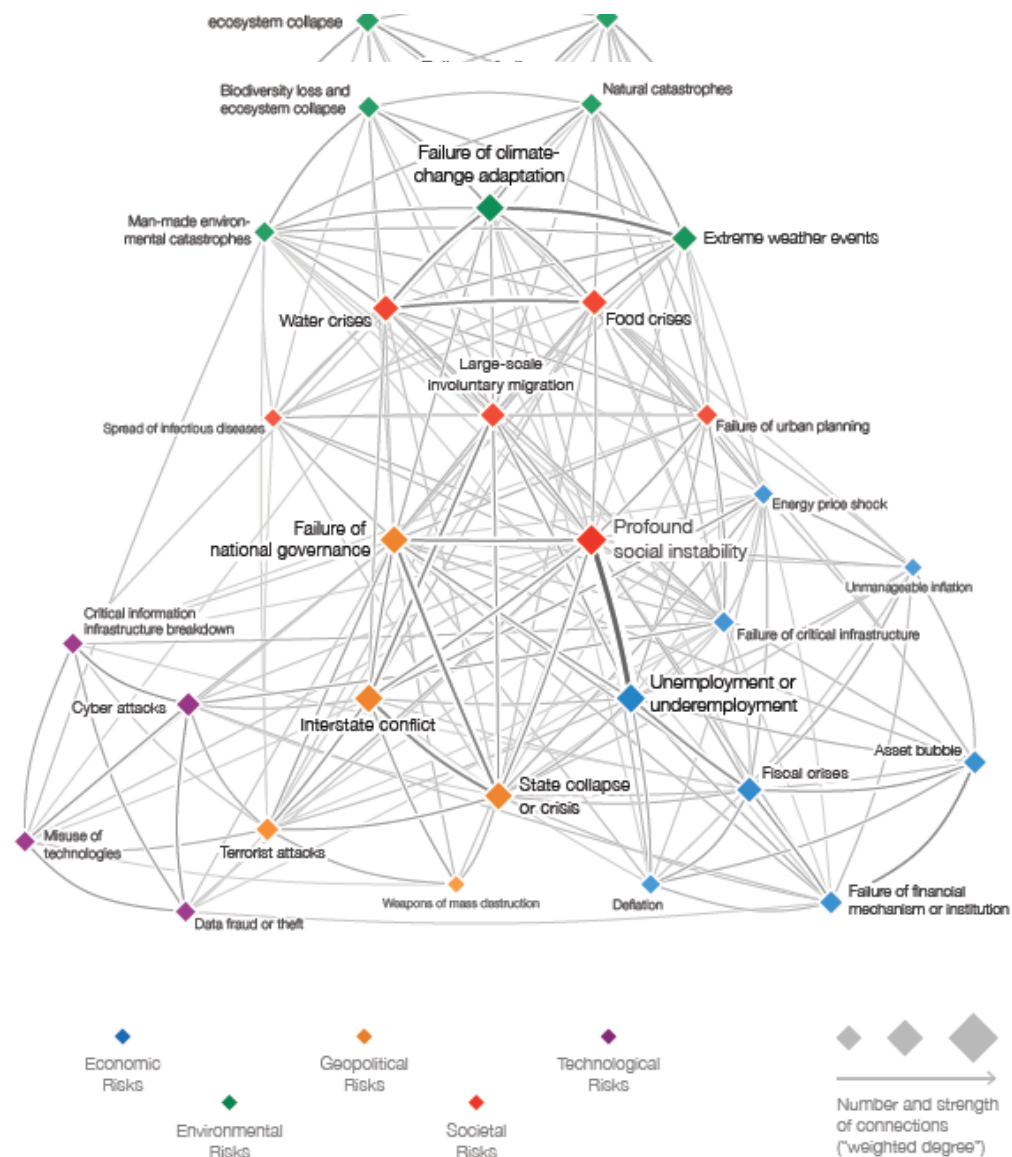
A Web of Ethical Deception; TEPCO, IAEA and WHO

- **A web of deception;** TEPCO, IAEA and WHO are collaborating on campaign of misinformation about prolonged release of radiations from Fukushima site. Last four years, Tepco kept circulating deliberately altered daily status of plant's radio-isotopes- emission on their web-site. In fact, in January 2013 they admitted that, with a usual dry apology, that they have misinformed the authorities about status of unit # 1 right from the onset of accident.
- In the wake of this global tragedy, IAEA and WHO are still complicity in very dangerous tendency to over simplify the irreversible unforeseen environmental and health consequences of this global contamination, which may be lingering well into next centuries.

Figure 1: The Global Risks Landscape 2015







Source: Global Risks Perception Survey 2014.
 Note: Survey respondents were asked to identify between three and six pairs of global risks they believe to be most interconnected. See Appendix B for more details. To ensure legibility, the names of the global risks are abbreviated. Also see Appendix A for the full name and description.

Table A: Global Risks 2015

Economic	Asset bubble in a major economy
	Deflation in a major economy
	Energy price shock to the global economy
	Failure of a major financial mechanism or institution
	Failure/shortfall of critical infrastructure
	Fiscal crises in key economies
	High structural unemployment or underemployment
	Unmanageable inflation
Environmental	Extreme weather events (e.g. floods, storms, etc.)
	Failure of climate-change adaptation
	Major biodiversity loss and ecosystem collapse (land or ocean)
	Major natural catastrophes (e.g. earthquake, tsunami, volcanic eruption, geomagnetic storms)
	Man-made environmental catastrophes (e.g. oil spill, radioactive contamination, etc.)
Geopolitical	Failure of national governance (e.g. corruption, illicit trade, organized crime, impunity, political deadlock, etc.)
	Interstate conflict with regional consequences
	Large-scale terrorist attacks
	State collapse or crisis (e.g. civil conflict, military coup, failed states, etc.)
	Weapons of mass destruction
Societal	Failure of urban planning
	Food crises
	Large-scale involuntary migration
	Profound social instability
	Rapid and massive spread of infectious diseases
	Water crises
Technological	Breakdown of critical information infrastructure and networks
	Large-scale cyber attacks
	Massive incident of data fraud/theft
	Massive and widespread misuse of technologies (e.g. 3D printing, artificial intelligence, geo-engineering, synthetic biology, etc.)

IAEA-TECDOC-1591

***Estimation of Global Inventories of
Radioactive Waste and Other
Radioactive Materials***



IAEA
International Atomic Energy Agency

June 2007

TABLE 4. CUMULATIVE AMOUNT OF CIVILIAN SPENT FUEL REPROCESSED BY MARCH 2002 [19] (UNITS: MTHM)

Country	Site	Plant	Fuel Type				
			GCR	LWR	FBR	MOX	TOTAL
Belgium	Mol	Eurochemic ^a	19 ^b	86			105
France	Marcoule	UP1	18 000 ^c				18 000
	La Hague	UP2/UP3		18 000	10	9.6	18 020
Germany	Karlsruhe	WAK ^a		180			180
India	Trombay	PP					
	Tarapur	Prefre-1					
Japan	Tokai-mura	TRP		1 000	18 ^d		1 018
Russian Fed.	Chelyabinsk	RT-1	3 500				3 500
UK	Sellafield	B205	40 000 ^e				40 000
	Sellafield	Thorp		3 800 ^f			3 800
	Dounreay	UKAEA RP			14		14
Total			58 019	26 760	33	9.6	84 822

^a Closed facility

^d Spent fuel from Fugen

^b CANDU, GCR and other

^e Magnox

^c UNGG

^f LWR/AGR

TABLE 5. SPENT FUEL INVENTORY DATA COLLECTED FROM THE NATIONAL REPORTS SUBMITTED TO THE SECOND REVIEW MEETING OF THE JOINT CONVENTION HELD IN MAY 2006

	Contracting Parties to the Joint Convention that have NPPs	Number of assemblies	Mass / Heavy Metal ton
1	Argentina		3 234
2	Belgium	2 668	4 300
3	Brazil	943	113 ^{Note 1}
4	Bulgaria	6 341	943
5	Canada	1 793 168	33 858
6	China ^{Note 2}		
7	Czech	7 555	882
8	Finland	9 019	1 377
9	France		10 920
10	Germany		4 738
11	Hungary	6 355	743 ^{Note 3}
12	Italy	2 058	237
13	Japan		13 000
14	Rep. of Korea		7 286
15	Lithuania	16 087	1 818 ^{Note 4}
16	Netherlands		0.43
17	Romania	40 312	762 ^{Note 5}
18	Russia		18 500
19	Slovakia	10 609	1 263 ^{Note 6}
20	Slovenia	732	285
21	South Africa ^{Note 7}		
22	Spain	9 676	3 196
23	Sweden	24 129	4 957
24	Switzerland	3 728	737
25	UK		9 585
26	Ukraine ^{Note 8}		
27	USA		49 352
	total		176 419

Comparison of activity between fallout Pu particle and Fukushima origin Pu particle (in case 5 μm diameter particle)

PuO_2

density	11.5 g/cm ³
diameter	5 μm
volume	1.05x10 ⁻⁵ cm ³
Pu wt in PuO_2	106 μg

Global fallout Pu in Japan

	240/239	241/239
ratio	0.18	0.0019
Pu	[g]	[Bq]
Pu239	8.98E-05	206000
Pu240	1.62E-07	1360
Pu241	1.68E-10	645
Total		208005

Fukushima Pu found in our study

	240/239	241/239	f
ratio	0.33	0.10	Fuk/Fall
Pu	[g]	[Bq]	
Pu239	7.42E-05	164000	0.80
Pu240	1.62E-07	197000	145
Pu241	1.68E-10	43700000	67752
Total		44061000	212

Legality of the Threat or Use of Nuclear weapons

Is it a judicial-ethical hallucination?

- 70 000 nuclear warheads have been fabricated worldwide.
- The corresponding worldwide production of uranium mill tailings is between 100 and 200 million tonnes, containing:
 - 4 E3 TBq of ^{226}Ra ;
 - 4 E3 TBq of ^{230}Th .
- 400 000 tonnes of natural uranium have been processed worldwide - in broad terms there would be the same quantity of remaining depleted uranium.
- HLW with an activity of 1.0 E8 TBq has been generated from plutonium production. This estimate is only for ^{90}Sr , ^{137}Cs and their daughter products. Taking radioactive decay into account would reduce this value by half.
- 7.0 E5 TBq of other radionuclides have also been generated.

Colombia University, NY USA and British Nature magazine carried out an analysis about population density around the existing 400? (Although this study ignored the research labs and waste site) nuclear power plants throughout the world (Nature Vol 472-2011). It turns out that

- 2/3 of the world's 211 power plants have more people living within a 30 kilometer radius (172,000 people were living within a 30 km radius in Fukushima).
- Some of the 21 power plants have a population larger than 7 million within a 30 km radius. 6 of the power plants have populations larger than 3 million Kanupp plant in Karachi, Pakistan has 8.2 million people living within a 30 km radius.
- 1993 megawatt Kuosheng power plant in Taiwan has 5.5 million within a 30 km radius. In Taiwan the 1208 megawatt Chin Shan plant has 4.7 million.
- Their study shows that when the population density is increased to 75 km radius, situation/picture gets more complicated, and more concerning Most of the devastation done after the earthquake that hit Japan was the tsunami wave, which arrived to flat coast of Eastern Japan with waves powerful and high enough to spread and sweep all structures on its way and irrevocably damage, and left more than 20,000 dead.
- Chinese Guangdong and Lingao nuclear power plants are each surrounded with a population of 28 million people including Hong Kong region.
- Second is Indian Point power plant 20 miles away north of New York City-Manhattan with 17.3 million people.
- Narora power plant in Uttar Pradesh, India with 60 million people within a 75 km, if the radius is extended to 150 km 79 million people in New Delhi.

Table 1. Mean density of deposition of radioactivity from DU in the two Gulf Wars and Kosovo including decays from U-238 and beta daughters Pa-234m and Th-234 compared with other radioactive contamination.

Event	Activity released or estimated deposited	Mean activity density Bq per square metre (area)
10 tons of DU in Kosovo	0.37TBq	3700*
350 tons of DU in Iraq 1	13 TBq	130,000 (into 100 km ²)
1700 tons of DU in Iraq 2	63TBq	630,000 (into 100 km ²)
Global weapons fallout Strontium-90 (Sr-90) Northern Hemisphere lat. 50-60deg (UNSCEAR, 2000)	73.9PBq	460
Chernobyl 30km Exclusion Zone <i>measured</i> Sr-90 (IAEA)		37,000 to more than 111,000
UK North Wales Radioactive Sheep restrictions <i>measured</i> Caesium-137 (Cs-137)		15,000 to 30,000
UNSCEAR definition of contaminated area. (Cs-137)		> 37,000
Irish Sea cumulative Plutonium from Sellafield 1952-1996 [Busby, 1995]	1350TBq	20,000

* I measured 4000Bq/kg in Gjakove, Western Kosovo, in Jan 2001 in a car park, but these values are averages based on an assumption about the area into which the material has been dispersed.

Table 2 Comparing Plutonium-239 and Uranium-238 in the environment

	Uranium-238	Plutonium-239
Environmental form	0.2-2 μ oxide particles	0.2-2 μ oxide particles
Density of material g.cm ⁻³	(UO ₂) 10.9;(U ₃ O ₈) 8.3	(PuO ₂) 11.46
Solubility	Insoluble	Insoluble
Environmental Longevity	Long lived	Long lived
Main radioactive emissions	Alpha + beta + beta	Alpha
Alpha particle energy	4.19MeV	5.15MeV
Half life	4.51 billion y	24400y
Specific activity	37.2MBq/kg ($\alpha + \beta$)	2.3TBq/kg (α)
Main present contamination source	DU	Fuel reprocessing e.g. Sellafield
Mass for equal activity	175 tons	1kg

Table 3 Unequivocal evidence of ICRP risk factor errors: comparison between infant leukaemia rates after Chernobyl in Wales and Scotland and similar data from Greece and from the former Federal Republic of Germany

Group	^a Wales and Scotland	^b Greece	^c Germany
Exposed cohort B			
Cohort size	156,600	163,337	928,649
Number of cases	12	12	35
Rate	7.67	7.34	3.77
Unexposed cohort A + C			
Cohort size	835,200	1,112,566	5,630,789
Number of cases	18	31	143
Rate	2.15	2.79	2.54
Risk Ratio	3.6	2.6	1.5
Cumulative Poisson Probability	0.0002	0.0025	0.02

^a See text for A B and C periods ^b Petridou et al..(1996) ^c Michaelis et al..(1997)

Table 4. Doses to local tissue within range of a 2 micrometer particle of DU compared with doses calculated using the ICRP model and an NRPB version of it.

	Value	Comment
Uranium oxide U_3O_8		
Density	8.6	
Decay energy/Bq	$4.45\text{MeV} = 7.12 \times 10^{-13}\text{J}$	
Particle diameter	$2\mu (2 \times 10^{-4}\text{cm})$	Common size
U-238 mass in particle	$3.05 \times 10^{-11}\text{g}$	
Particle activity	$3.79 \times 10^{-7}\text{Bq}$	
Mass of 30μ radius sphere of tissue ($\rho = 1$)	$1.13 \times 10^{-10}\text{kg}$	
Dose to this tissue per Bq	6.3mGy	
Equivalent dose	126mGy	
Hits to tissue per day	0.03 α -and .06 β -tracks per day	11 α - tracks per year and 22 β - tracks
Equivalent dose to this tissue per day	4.12mSv	Or 1500mSv per year
NRPB calculated equivalent dose to 'lymphatic system' per day	$5.8 \times 10^{-11}\text{mSv}$ (effectively no tracks)	*Assumes 8kg or $2.1 \times 10^{-8}\text{mSv}$ per year
ICRP calculated equivalent dose to 'lymphatic system' per day.	$5.8 \times 10^{-10}\text{mSv}$ (effectively no tracks)	**Assumes lymphatic system as 800g (ICRP) $2.1 \times 10^{-7}\text{mSv}$ per year
ICRP calculated dose to tracheobronchial lymph nodes per day	$3.1 \times 10^{-8}\text{mSv}$ (effectively no tracks)	**TBN Mass = 15g $1.1 \times 10^{-5}\text{mSv}$ per year

*for lymphatic system modelled as lymph nodes, liver, spleen, kidneys, pancreas, uterus, thymus, thyroid, stomach, both intestines, colon, red bone marrow and cells on bone surfaces [NRPB, 1995]

** values from ICRP standard man [ICRP23, 1975]

- Radiation is a non-partisan and has no scent, accuracy of diagnosis and monitoring radiation doses in humans and food chain is developed only after the Chernobyl accident. The edifice of nuclear power cracked.
- Complex systems represent high degree of interdependency among all the elements and offers very low predictability. In the complex systems like nuclear reactors there are a high degree of visible (mechanical-predictable) and invisible (radiation-unpredicted) links and highest degree of interactions among all the elements of the system.
- Like any complex or non-linear systems, nuclear power plants are also known with their “tipping point”, such as lose of coolant, loss of emergency backup units, failure of first containment vessel, beyond which chaos takes place.



Spent Fuel from Nuclear Power Reactors

An Overview of a New Study by the International Panel on Fissile Materials

Edited by Harold Feiveson, Zia Mian, M.V. Ramana, and Frank von Hippel

with contributions by Frans Berkhout, Anatoli Diakov, Rodney Ewing,
Beate Kallenbach-Herbert, Jungmin Kang, Tadahiro Katsuta, Gordon MacKeron,
Pavel Podvig, Mycle Schneider, Thomas Shea, Johan Swahn, and Masafumi Takubo

**Draft for Discussion
June 2011**

Annual discharge of spent fuel. 1 GWe. %90 capacity.

Reactor type	Typical burn-up (GWd/tHM)	Annual discharge of spent fuel (tons)
LWR (light-water moderated)	50	20
CANDU (heavy-water moderated)	7	140
RBMK (graphite moderated)	15	65

Table 1. Annual discharge of spent fuel for three common reactor types. This assumes a reactor of 1 GWe operating at 90% capacity. GWd/tHM is the amount of thermal energy (heat) in gigawatt-days released per metric ton of heavy metal (HM) in the fuel.

Composition, heat generation, and radioactivity

The composition, heat output and radioactivity per ton of heavy metal of the spent fuel depend upon the burn-up. For LWR spent fuel with a burnup of 50 GWd/tHM, the spent fuel consists of about 93.4% uranium (~0.8% U-235), 5.2% fission products, 1.2% plutonium (12 kg or 1.5 weapon equivalents per ton of fuel), and 0.2% minor transuranic elements (neptunium, americium, and curium).

Spent Fuel Inventories the end of 2007

Country	Spent Fuel Inventory (tons of heavy metal) end of 2007	Spent Fuel Policy
Canada	37,300	Direct disposal
Finland	1,600	Direct disposal
France	13,500	Reprocessing
Germany	5,850	Direct disposal (now)
Japan	19,000	Reprocessing
Russia	13,000	Some reprocessing
South Korea	10,900	Storage, disposal undecided
Sweden	5,400	Direct disposal
United Kingdom	5,850	Reprocessing but future unclear
United States	61,000	Direct disposal

Table 2. Spent fuel inventories in cooling ponds and dry-cask storage at the end of 2007 for the 10 countries in the present study.

Spent fuel in storage worldwide

- The amount of spent fuel discharged from a nuclear power plant depends upon the fuel “burnup,” i.e., the thermal energy (heat) generated per unit mass of fuel.² Table 1 shows the approximate amount of spent fuel that would be discharged per year from a 1 GWe reactor of the three most common reactor types.
- As of the end of 2009, there were about 240,000 metric tons (as heavy metal) of spent fuel in storage worldwide, most of it at reactor sites. About 90% was in storage ponds, the balance was in dry-cask storage.³ The annual spent fuel generated is approximately 10,500 tons of heavy metal per year, with roughly 8500 tons of heavy metal going into long term storage and about
- 2000 tons of heavy metal allocated for reprocessing but much of it in interim storage

Composition, heat generation, and radioactivity

- The composition, heat output and radioactivity per ton of heavy metal of the spent fuel depend upon the burn-up. For LWR spent fuel with a burnup of 50 GWd/tHM, the spent fuel consists of about 93.4% uranium (~0.8% U-235), 5.2% fission products, 1.2% plutonium (12 kg or 1.2 eapon equivalents per toof fuel), and 0.2% minor transuranic elements (neptunium, americium, and curium).

ANNEX III

ENVIRONMENTAL INVENTORIES OF RADIOACTIVE MATERIAL

III-1. RELEASES TO THE ENVIRONMENT FROM PAST OPERATIONS

In some cases liquid radioactive waste has been discharged in surface water bodies or pumped in wells at various depths and at sites characterized by extremely different geological conditions. Examples of environmental contamination caused by the discharge of liquid radioactive waste in surface water bodies are the Techa River basin and the Karachai Lake in the area near the Mayak PA plant in the Ural region [III-1].

During the years 1949-1956, about 76 million m³ of liquid waste were discharged in the Techa River with a radioactive content of 1.0 E5 TBq (both ⁹⁰Sr and ¹³⁷Cs amounted to 11-12% of the total). As a result of the discharge in the river, downstream populations were exposed to radiation doses that were considered unacceptable. Consequently various remediation measures were enforced, including reduction of waste discharges and resettlement of a number of downstream villages [III-1].

One of the measures enforced to limit the contamination of the Techa River was to discharge the waste in storage ponds. Karachai Lake was used as a storage pond for liquid ILW. Contaminated sediments from the banks of the lake were then scattered by wind and caused the contamination of an area of 1800 km² [III-1]. The total activity discharged in the Karachai Lake is estimated to be about 22 TBq consisting mainly of ¹³⁷Cs and ⁹⁰Sr (activity ratio of the two radionuclides about 2.8).

Deep well injection of high level liquid radioactive waste was carried out by the former Soviet Union at three sites. The intention was to remove the radioactive material from the near surface environment and to rely on the isolation capacity of confined deep aquifers to allow decay of the radionuclides. The volumes and activities of liquid waste injected into deep wells at the sites of two Russian reprocessing plants are shown in Table 8 (Section 2.4.3.2 of main report).

Low level waste was also injected into wells in the USA. They were not quite as deep as the Russian wells and relied upon the length of travel between injection and discharge and on the retention by geological materials to allow decay of the radioactive contaminants. The latter approach has been used, *inter alia*, at some DOE sites such as Hanford and INEEL (Idaho).

A disposal approach used in an experimental way at the Oak Ridge National Laboratories in the years from 1959 to 1984 involved mixing liquid radioactive waste with cement to form a sludge that was then injected in a shale formation at depths as great as 300 m. The intention was to retain the radionuclides in the hardened cementitious material, counting on the low permeability of the shales to limit leaching and subsequent migration of the radionuclides. A total of 46 injections were carried out, injecting 19 000 m³ of waste grout mix with an activity of 5.2 E4 TBq [III-2].

Sea disposal operations were carried out from 1946 until 1993 when it was agreed internationally to discontinue the practice. During the decades when sea disposal was carried out, 14 countries used more than 80 sites to dispose of radioactive waste containing about 8.5 E4 TBq of radioactivity [III-3]. The great majority of waste disposed at sea was in solid form

Table III-1 shows a summary of the amounts of radioactive material disposed of at sea in the framework of the sea disposal operations carried out between 1946 and 1993.

TABLE III-1. RADIOACTIVE CONTENT OF WASTE DISPOSED AT SEA UP TO THE YEAR 1993 (MODIFIED FROM REF. [III-3])

	Alpha (TBq)	Beta-gamma (TBq)	Tritium (TBq)	Totals (TBq)	% of total activity
Atlantic sites	675.1	44,587	15,570 ¹	45,262	53
Arctic sites		38,370		38,370	45
Pacific sites	0.02	1,446		1,446	2
Totals	675.3	84,403		85,078	100

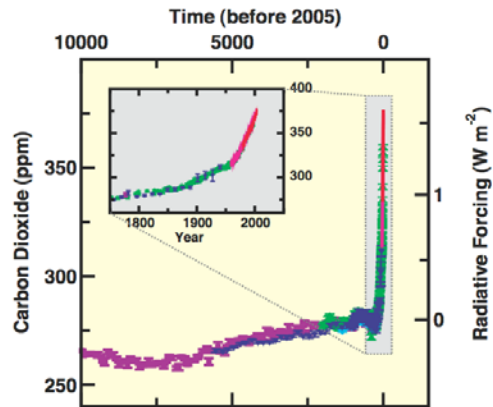
¹ Tritium activities are included in the beta-gamma values.

TABLE III-2. ENVIRONMENTAL ACCUMULATIONS OF RADIOACTIVE MATERIAL
(OTHER THAN INTENTIONALLY DISPOSED WASTE)

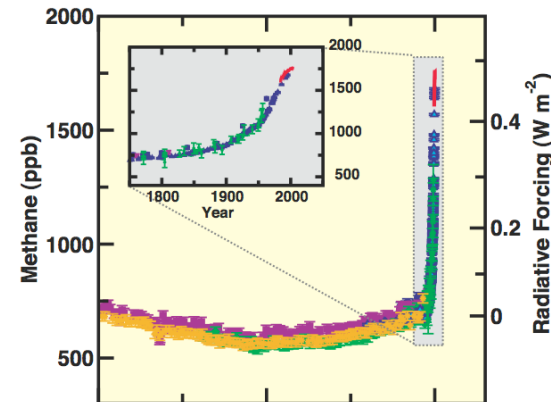
Location	Significant radionuclides			Mass or volume
	⁹⁰ Sr (TBq)	¹³⁷ Cs (TBq)	²³⁹ Pu (TBq)	
Nevada Test Site	1.0 E5	1.6 E5	4.1 E3	
US Pacific test sites	8.0 E4	1.3 E5	<1.0 E3	
Semipalatinsk	3.5 E3	6.6 E3	<1.0 E2	
Novaya Zemlia	8.5 E4	1.4 E5		
French Pacific test sites	7.0 E3	1.1 E4	6.7 E2	
Maralinga test site				1.5 kg of ²³⁹ Pu
Lop Nor test site	not available	not available	6.7 E1	
Kyshtym	2.0 E3	2.5 E2		
Chernobyl	1.0 E4	8.5 E4	not available	
Global fallout	4 to 6 E5	6 to 9 E5	6 to 9 E3	

Observation: All GHG concentrations has increased making future warming unequivocal

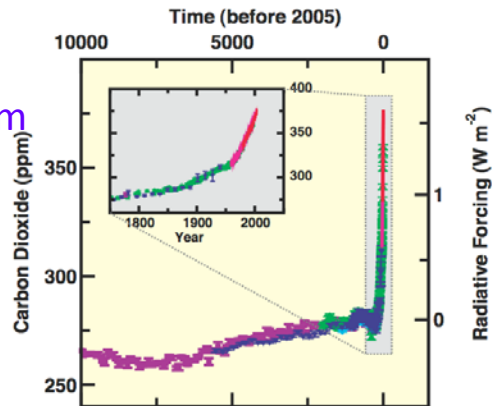
CO₂ grew from 280 ppm in 1750 to 379 ppm in 2005



Methane grew from 715 ppb in 1750 to 1774 ppb in 2005



N₂O grew from 270 ppb in 1750 to 319 ppb in 2005



Water Vapor

Assume: Sea water @ 35,000 ppm

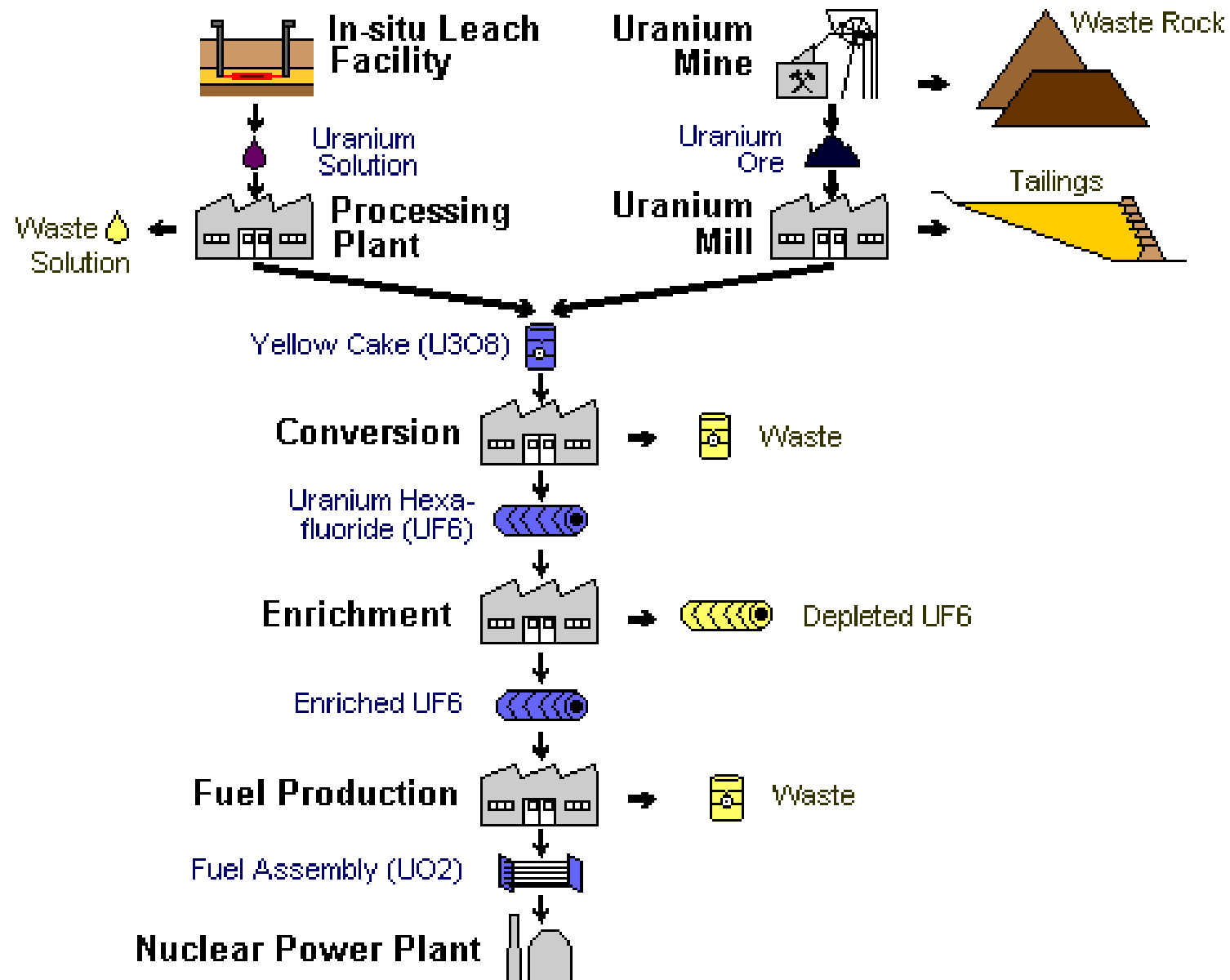
Circ. water flow = 500 gpm/MW All drift solids Cr, Zn, Pb, are PM10 (10 micron or less)

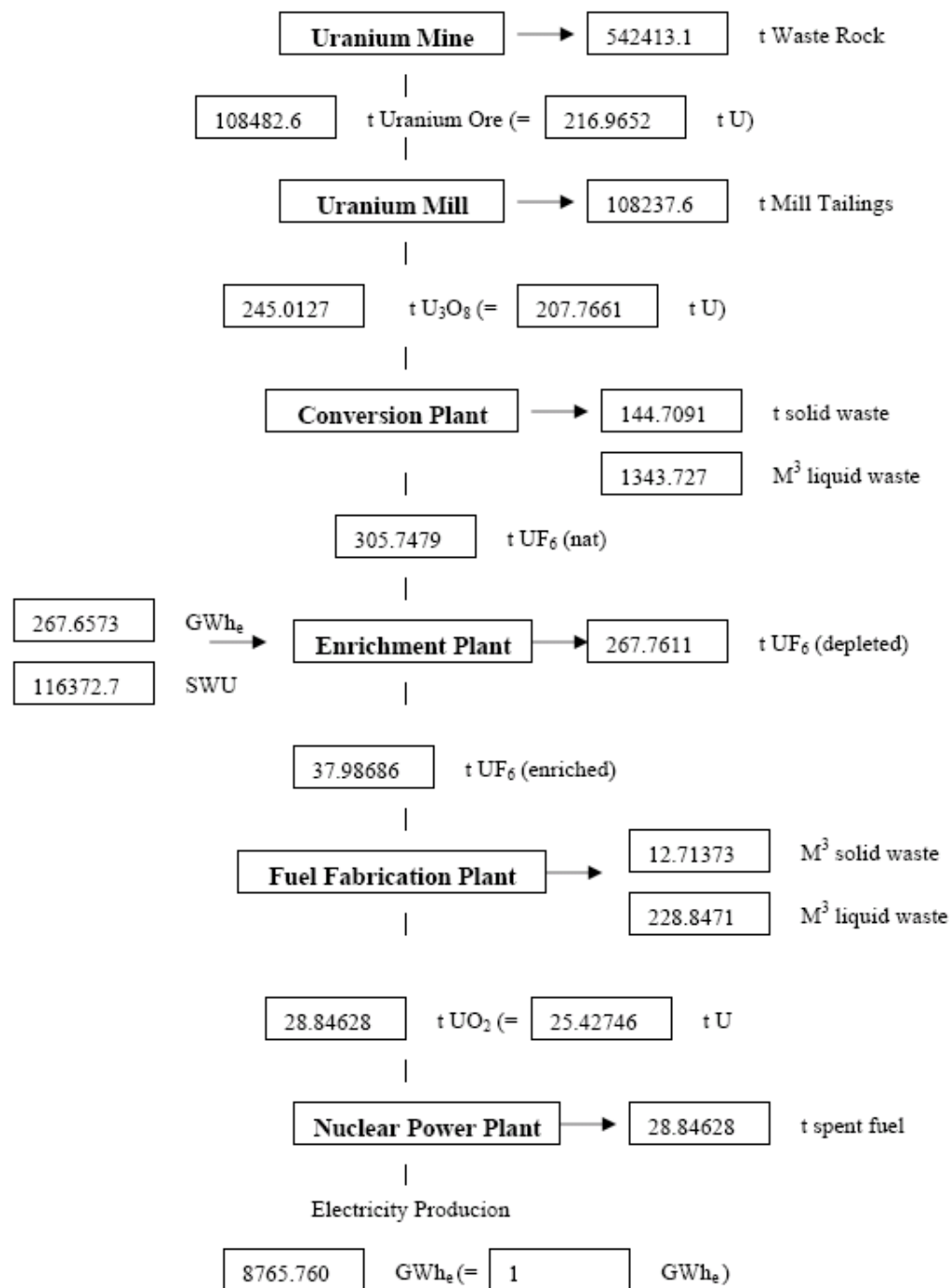
For a 250 MW steam plant operating 7,500 hr/yr

PM10 emissions are ~ 60 tons per year

1000 MW power plant > 200 tons per year.









Diablo Canyon impacts an average source water coastline length of 74 kilometers (46 miles) out to 3 kilometers (2 miles) offshore, an area of roughly 93 square miles, for nine taxa of rocky reef fish. These rocky reef fish included smoothhead sculpin, monkeyface prickleback, clinid kelpfishes, blackeye goby, cabezon, snubnose sculpin, painted greenling, Kelp/Gopher/Black-and-Yellow (KGB) Rockfish Complex, and blue rockfish. In that **93 square mile source water area**, an average estimated proportional was calculated for these rocky reef taxa. The rocky reef fish species with **mortality of 10.8 percent** the largest calculated coastline impact was the smoothhead sculpin, having an estimated proportional **mortality of 11.4 percent over 120 kilometers** (75 miles) of coastline during a 1997-98 sampling period (Diablo Canyon Power Plant Independent Scientist's Recommendations to the Regional Water Quality Control Board, Item no. 15 Attachment 1, Sept. 9, 2005 Meeting). (2269 MM 2670 MCD) annual level estimates 1, 481, 848, 383



Figure 3. Dry cask storage at the Connecticut Yankee spent fuel storage facility. There are 43 dry storage casks on the site, of which 40 hold spent fuel and three store high-level radioactive waste. Source: Connecticut Yankee Atomic Power Company

The Largest Nuclear Utility In United States

Exelon Co.

- Exelon is operating 17 nuclear reactors in U.S. The largest and most experienced corporation in the world. In 2008 Exelon's chairman Mr. John Power's comments about nuclear revival. (Bulletin of Atomic Scientists, Sep/Oct. 2008)
- Q: How important should cost be when considering to build a new nuclear plants?
- A: **At the present we see nuclear is very expensive for new plant.**
- Q: Exelon is also putting money into new gas plants,.. Do you have doubts about whether new nuclear plants will be built?
- A: **I have a lots of doubts, my job is to build things that provide efficient power and make money for my investors...\$800 million project as opposed to \$ 12 billion project.**
- **To move forward with new projects, I have to have very high confidence in the construction estimates, I DON'T HAVE IT YET. I've got to have some confidence that the State is happy ..on the spent fuel issue, I DON'T HAVE IT YET. I've got to have the loan guarantees, DON'T HAVE IT YET.**
- **Federal government promised to solve it 50 years ago, it has not, if it ultimately can not , I don't see this technology fulfilling a major role.**
- **If you start off with a \$ 6 billion project, you can't very well afford to have it turn into \$ 12 billion.**
- **No utility executive ever was foolish enough to say that nuclear would make electricity to cheap to meter. That was Lewis Strauss. THAT WAS VERY FOOLISH STATEMENT.**

The implications of the points mentioned above for public decision-making follow from the fact that a core set of duties and obligations related to common morality can always be identified at any given time in any society.

If common morality is not encoded in laws, structures and standard operational procedures, common practice amongst reasonable, thinking people will always yield ample pointers to the contents and basis of such a common morality.

As such,

common morality will always be available as a *point of reference* in public decision-making.

Similarly, common morality will also always be available as *basis for the evaluation* of any public decision-making. In fact, where society may to some extent still tolerate individuals who fall below the minimum standards of common morality, less room for tolerance is given to bodies who have to make decisions where the common good and the welfare of the public are at stake. However, if public decisions are made in areas where there is no clear guidance from existing laws, statutes and standard operational procedures, the minimum standards of common morality will be applied.

reasonable basis for understanding why common morality would include general moral rules or principles about duties such as (Harris, Pritchard, Rabins 2000: 33; Rachels 1997: 10):

§ Not to harm others.

§ To make reparations for harms done to other

§ Not to lie or cheat.

§ To keep our promises.

§ Not to interfere with the freedom of others.

§ To respect others' capacity to make rational decisions about matters affecting their lives.

§ To treat others fairly.

§ To help those in need.

§ To be open and honest in one's dealing with others.

§ To take special care when one can cause great harm to others.

A unified theory nuclear free world -of scientist's politicians and law. In 1958, Nobel laureate Prof. Linus Pauling proposed to establish a **World Peace Research Organization** within the structure of UN. And In addition, asked US academy of science and their counterpart in Europe and Soviet Union to form a **Scientific World Parliament** which would produce-make recommendations to help states in solving global armed conflicts and speed progress in nuclear weapons disarmament.

Based on Pauling idea, an International scientific advisory body, independent of IAEA, should be formed under the U.N charters not only to guide nuclear disarmament and advise and provide NPT member-policy-makers- politicians impartial scientific/technical data which may not be available for them otherwise.

the main areas about ethical issues which the pro- and anti-nuclear positions differ deeply and fundamentally.

- The ethical question of the health hazards of radioactivity
- The ethical problem of the disposal of nuclear waste
- The ethical problem of the risk of catastrophic reactor accidents
- The ethical problem of external costs and affordability
- The ethical problem of Nuclear proliferation.
- Terrorism
- Sabotage
- Socio-economical
- The deeper cultural and socio-political assumptions informing the nuclear debate.

Within the context of decision-making about nuclear power generation, a third level of ethical risk has to do with the fact that the development and application of nuclear technology places *extraordinary duties and obligations* on those responsible for its management and control - since the potential exists within this context for "acute exposures" and "catastrophic accidents" (DME 1998: 62). This follows from the reasonable expectations of the public that officials have a *duty of due care* correlative to the actual or potential dangers related to the processes and procedures that they manage. This injunction is based on the tenet of common morality, which states as follows: Other things being equal, one should exercise due care to avoid contributing to significantly harming others.

However, if the dangers or risks involved are extreme, then common morality dictates that we have a correlatively extreme duty to take due care to safeguard the public from such dangers. In literature on professional ethics, this is referred to as *the corollary of proportionate care*, and it reads as follows: When one is in a position to contribute to greater harm or when one is in a position to play a more critical part in producing harm than is another person, one must exercise greater care to avoid doing so (Harris, Pritchard and Rabins 1998: 63; cf. also Alpern 1991: 189).

Scientific resilience begins on the level of individuals; unfortunately many Turkish scientists have become increasingly complacent with AKP party and feel helpless in the face of losing their jobs. A fundamental distinction that needs to be made between socially responsible scientists and lifeless and mindless nuclear weapons scientists. Nukes are weapons of wealthy, that's not a casual connection? Political nukes therefore legal "zero-sum"?

Ethics consists simply of the actions an individual takes on himself/herself. It is self-determinism. Distinguishing Right and wrong conduct. Differentiating Good and Evil.

- Philosophers after philosopher tried to resolve the subject of ethics and justice .
- The Greek philosopher of Pythagoras (sixth century B.C). Socrates tackled the subject around 470-399 B.C but did not provide a definition.
- Socrates' Pupil Plato (427-247 B.C) he insisted that definition of ethics could only be defined pure reason.
- Aristotle (384-322 B.C) defined unethical behavior by saying that man's rationality becomes overruled by his desire.
- When the religions flourished the idea of ethic disappear from the literature.?? And has been replaced with religious laws and regulations, no more self determinism rules
- During the renaissance it surface again.??



Nobel Peace Prizes

- However, in the history of the Nobel Peace prizes, three times, anti-nuclear scientist or organization has received Nobel Prize for peace.
- In 1962, it was given to a Nobel laureate in physics, Prof. Linus Pauling.
- In 1985, an anti-nuclear organization, International Physicians for the Prevention of Nuclear War (IPPNW) received the peace prize.
- In 1995 the some Nobel peace prize was awarded to anti-nuclear Physicist Prof. Josef Rotbalt, one of the founders of so called Pugwash Movement, for his contributions toward global nuclear disarmament and against the French nuclear tests being conducted in South Pacific Ocean.

2005 IEAE was also awarded for the Nobel Peace Prize

- A nuclear watch-dog organization, known as International Atomic Energy Agency IAEA was established in the United Nation. Ironically, in 2005 IEAE was also awarded for the Nobel Peace Prize. Dr. Muhammed El Baradei.
- I was surprised and disturbed that the Noble peace committee awarded the peace prize to an organization that is responsible for promoting nuclear technology and nuclear reactors which became breeding grounds for nuclear weapons all over the world.

President Obama a Nobel Peace Laureate

- Now president Obama a Nobel Peace laureate , can he explicitly state that; ***Nuclear weapons have no national boundaries, and by their nature kill indiscriminately without distinguishing between military-combatants and civilians; therefore nuclear weapons violate international humanitarian laws including the Hague Convention IV, the 1949 Geneva Convention, 1977 Protocol I Additional to the Geneva Conventions of 12 August 1949. The author of this article believes that, first time as a president of a super power, he should declare that use or test of nuclear weapons not only falls under the " crimes against to humanity" of the Nuremberg Principles, but also represents crimes against both Flora, Fauna."***

Justice is the action taken on the individual by the group when he/she fails to take these action herself/himself.

- However, if the dangers or risks involved are extreme, then common morality dictates that we have a correlatively extreme duty to take due care to safeguard the public from such dangers.
- In literature on professional ethics, this is referred to as *the corollary of proportionate care*, and it reads as follows: When one is in a position to contribute to greater harm or when one is in a position to play a more critical part in producing harm than is another person, one must exercise greater care to avoid doing so (Harris, Pritchard and Rabins 1998: 63; cf. also Alpern 1991: 189).
- Scientific resilience begins on the level of individuals; unfortunately many scientists have become increasingly complacent with political parties and feel helpless in the face of losing their jobs. A fundamental distinction that needs to be made between socially responsible scientists and lifeless and mindless nuclear weapons scientists.
- Nukes are weapons of wealthy, that's not a casual connection? Political nukes therefore legal "zero-sum"?

The Russell-Einstein Manifesto and Pugwash's advocacy with regard the elimination of nuclear weapons and the attendant initiatives in non-proliferation, arms control and disarmament continue to be of utmost relevance today. Yet, the changing nature of contemporary conflicts and the emergence of 'new security challenges' as compared to conventional warfare, have added new concerns to the global agenda and perhaps also changed the order of priorities.

The last decades Pugwash has in fact started to explore the challenges emanating from this current, comprehensive security problematique.

Fukushima, TMI, Chernobyl accidents are undeniable testament to importance of nuclear crises, which has no boundaries and extended far beyond conventional expectations.

Nuclear industry and policy makers must bite safety bullet and respond to latest Fukushima crises as a Sputnik moment to rebuild the public confidence in nuclear energy.

IAEA the United Nations Agency created for the purpose of coordinating, directing, reporting and preventing of international nuclear affairs including but not limited to preventing proliferation of sensitive nuclear materials regulating nuclear research labs and power plants, facilitating collaboration between industry and operators. However, considering the last 40 years of its performance, and the last Japanese accident showed that IAEA was slow to act and perform inadequate response. IAEA needs to change, Ethical and technological and scientific issues of nuclear power. Ethical responsiveness of politicians and industry has been always slow and inadequate in some countries, moreover, the fanciful presentations of nuclear energy is over. It is clear to many policy makers that environmental technological and scientific issues surrounding the use of nuclear energy are inescapable and the damages that they cause are real.

So far, uncertainty and ambiguity, from the cradle to grave of nuclear cycle have been norm in the nuclear industry. Any affective enforcement of the IEAE safety measures to match the risks and benefits of nuclear energy has faced numerous economic and political obstacles in different countries. The risk and benefits of nuclear power reflects a complex interplay of safety and profit, a paradox that is created by the industry and IAEA. New inspections schemes of IAEA must collectively focus on addressing safety issues and must be immune to any national or international political obstacles.

Nuclear industry does not have uniform safety standards and IAEA so far failed to conduct forcible operation standards, each country interpreted the applied the IAEA rules and regulations about the safety according to their economic and political needs. Literally a self-policed power planter operation is still going on at the lowest levels of safety in many countries.

50 years ago IAEA and WHO (?) who signed a documented for collaborating with WHO on nuclear matters?

Nuclear power plants directly or indirectly have been a risk to human health from past, current, and future accidents. They disrupt society, and through health, economics, and displacement. The adverse effects of Chernobyl on food supplies, nutrition, and child health, mental-health, have been well documented with mostly independent and

The all gang of five, Kissinger, Cohen etc., the well-known theorists of nuclear deterrence, during the cold war, has changed their heart as the nuclear club lost their grip on proliferation, as the Libya Iraq Pakistan Korea Iran embark on nuclear weapon

The strange alchemy (of life and law) or safety or profit.

International Court; Elephant hiding behind the mice. As the court opinion stands the text of the inter-court opinion create two main categories of decision/opinion among the fourteen judges. It has also inserted/introduced new special breaks for the countries like Israel Iran etc. to threat the use of nuclear weapons if there survival is in question. The special break built in the final opinion for the Israel is now, unfortunately, unintantially extended to the interest of Iran and Korea. The court in 1996 did not realize that Israel privilege may have political implications in the future like Korea and Iran claiming that their survivals are threatened?

IAEA Stress Tests // ethical everkilled///// russian nuc-energy is not subject to ethical measures///

“Mundus contra deum”? “Devine decline of nukes?”

“Global nuclear watchdog with no teeth”.

In the area of global nuclear safety IAEA has been kept on the tight lips/leashed by 35 members of the board of governors consist mostly from nuclear power state (which also determines the severity of the nuclear accidents). IAEA is not authority to determine the severity of the nuclear accidents until the individual state involved in the accident declares it, as it happened aftermath of Fukushima crisis, IAEA simply followed the same sluggish and confusing rating of the accident as the Japanese government in Fukushima and Russian government in Chernobyl accident.

Global/national/IAEA promoting nuclear energy tactics also exasperate the process of profit over safety

Scientific discoveries need to deliver a public value, embracing (coincidentally) the idea that public safety comes before the profit.

The industry has been overconfident that major nuclear accident is impossible, thanks to the cover ups, misleading information by industry. And at many locations they distress the Nuclear Event Scale (NES), which was invented by the nuclear cartel, a level that indicates the severity of the accident, and selectively they reported numerous-chronic- serious- near misses in power plants accidents as a low level incident.

Laurent Stricker says that “the scale of severity (NES) is used in very different ways from one country to another; you also have differences in transparency from one country, and from operator to the next.” And “But between 5-7 % of power plants do not report any events in a given year.” The politicians during the cold war have been complicit in distorting-misleading the public since 60 years. The industry, a half century old, must be rethought with new techno-human relationship?

Nuclear Propagation Treaty

NPT a modern Holy Book of War of Peace is inherently fragile, and its effectiveness depends on first the cooperation of nuclear club, second complete ratifying global ratification of zero nukes. Given that international court of justice, WHO, NPT, and IAEA operate in a complicated complex of UN political environment, the last 50 years, they have been bound to face and deal with serious problems especially ten principals/commandments of NPT which created more mismatches between haves and have nots. and a low moral continued to plague their effectiveness as they have been harshly criticized.

PUGUASH movement But; To this date, five countries known as Nuclear Club, USA, France, England, Russia, China, and suspected countries or so called de facto countries such as India, South Africa, Israel, Pakistan and Korea, have conducted approximate 2,000 nuclear tests around the globe. The explosive force of these tests amounts nearly **40,000** times that of the bomb that was dropped on Hiroshima.



PREPARED FOR THE SECRETARY OF STATE'S COMMITTEE ON ATOMIC
ENERGY A REPORT ON THE INTERNATIONAL CONTROL OF ATOMIC
ENERGY.

Foreword by Secretary of State James F. Byrnes and
a Preface by Dr. I. I. Rabi, Professor of Physics, at Columbia University
and Consultant for the Los Alamos Project

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The Acheson-Lilienthal Report
on the International Control of Atomic Energy
Washington, D. C. March 16, 1946

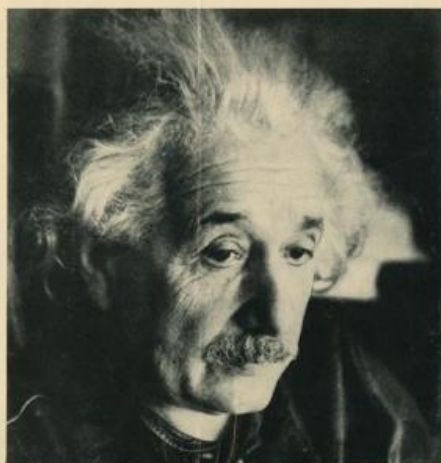
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**A REPORT
ON THE
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ENERGY**

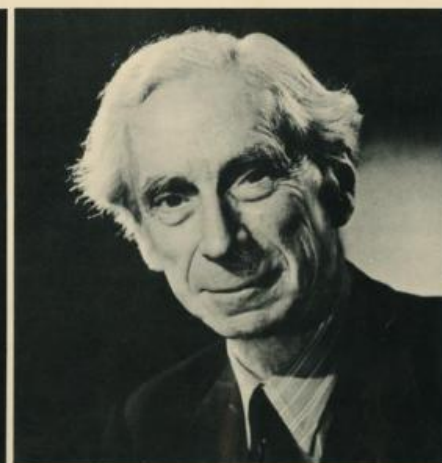
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A PREFACE BY DR. I. I. RABI, Professor of Physics, at Columbia University
and Consultant for the Los Alamos Project.

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Albert Einstein



Bertrand Russell

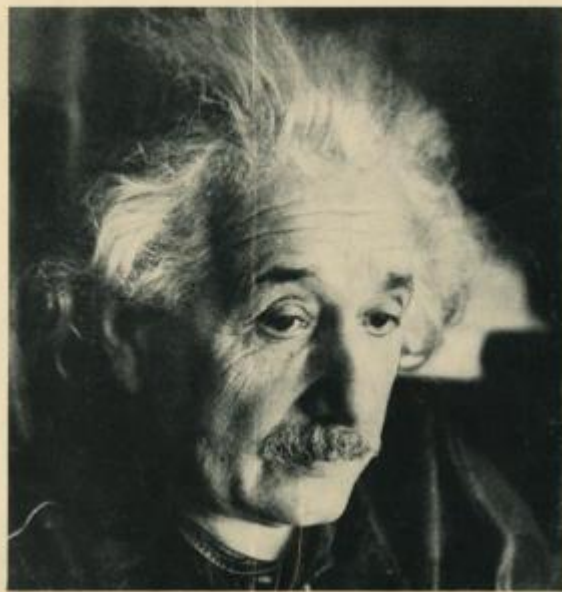
NOTICE TO THE WORLD

...renounce war or perish!

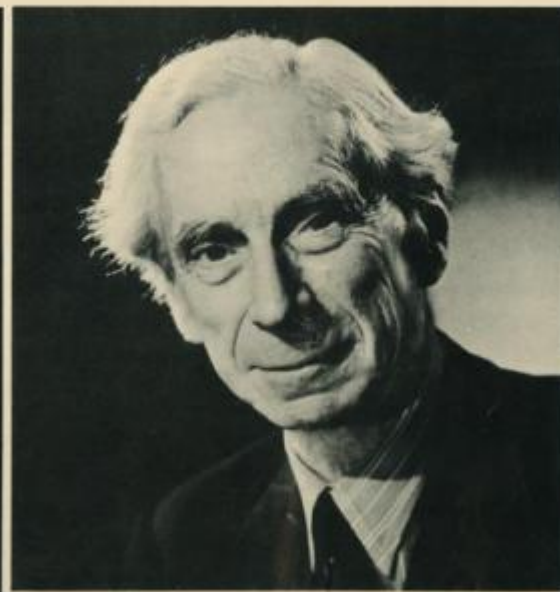
...world peace or universal death!

AUDIO MASTERWORKS LPA 1225





Albert Einstein



Bertrand Russell

NOTICE TO THE WORLD

...renounce war or perish!

...world peace or universal death!

AUDIO MASTERWORKS LPA 1225

- The net result of this was that the industry was provided with a great deal of protection and support, while the ability of the public to scrutinize and intervene in the industry's development was effectively curtailed (Dunlap et al 1993: 34 - 38). It was only during the early 70s after new legislation has been passed that a new approach to regulation was developed in which the public received a greater ability to influence regulatory decisions.
- Until then, the development of the nuclear industry was very much a foregone conclusion, with little hope for the public to be able to intervene in the direction or momentum of this development process
- The nuclear energy-weapons establishments around the world used these ill-tempered self-important and envious scientists up today... Enrico Fermi one of the founders of modern nuclear physics ones called these scientists “a Monomaniac with much mania”, referring to Edward Taylor.

Ban Treaty (CBTB) must be verified by all parties. However, the Nuclear Weapon States are developing new advanced technologies for conducting above-ground experiments (AGEX). Vigorous AGEX nuclear programs such as, the dual-use Inertial Confinement Fusion (ICF-NIF) Facility, Pulse Power Facility, and Hydrodynamic Test Facility, which will maintain their technological superiority in nuclear weaponry, are now underway in all Nuclear Weapons States.

2005 yılı Nobel Barış ödülü, Uluslararası Atom Enerjisi Ajansı'na (International Atomic Energy Agency – IAEA) ve kuruluşun başkanı olan Dr. Muhammed El Baradei'ye verildi.

Nuclear Disarmament- Evolution or Revolution

- Treaty's the first and far most important tenant -message was that **“Thou shalt have no other nuclear weapon states before us, and forbids any other nations to commit the sin of possessing nuclear bombs.”** And for any nations demanding a fairer distribution of nuclear weapons, there is implied threat to other countries in every article of NPT. Looking back 40 years, nuclear-club continued to build its strengths and capabilities on nuclear technology in every shape and form, establishing itself as a pre-eminent knowledge of nuclear power.

The World Economic Forum (WEF)

Global Risk Landscape

- After January 18, 2013 meeting, The World Economic Forum (WEF) published its 2013 Global Risk Landscape by categories and their description, including 50 low-probable, high-impact risks resulting from human activities. The goal of these reports, published every year, is to build resilience to global risks.
- Since 60 years, the economists, scientist, environmentalists around the world have constantly proved that the cost of nuclear power, from the financial investment to the risk of proliferation, catastrophical accidents is simply too unpredictable and high risk energy source.
- WEF knows that radioactive emissions from Fukushima plant have exceeded several hundred folds the radioactive contamination of the bombs dropped in Hiroshima and Nagasaki combined. Unfortunately, they failed again to include the global risks relating to nuclear energy in 2013 Forum's report.



Kuzin
Edwell
→

Oliphant

CF Powell

Wells
Higginbotham

Books of The Times

By CHARLES POORE

WHEN Albert Einstein urged President Roosevelt to further the making of atomic bombs in defense of democracy he started a chain reaction that still shakes Creation. The debate over the uses and misuses of atomic energy has split more groups and spread over a greater area than just about any other topic of our time.



Dr. Edward Teller

The fall-out of books about it has been prodigious. In fact, I don't think I am taking a very long chance when I predict that we shall soon have more volumes available on the general subject than we have on the Civil War. Isn't that clearly in the cards? The appeal of reading Civil War books lies in giving us vivid pictures of long-past sorties into formal murder. The new, avalanching literature on the expansive powers of the atom concerns our own lives, the lives of our children and the lives of their children. It has a terror of reality beyond measure.

Yet attempts to take that measure must be made. It is true, as Einstein is reported to have said, that when man invented matches he had the power to destroy the world then and there. But not one man

Straus and Teller we might be in a fairly miserable, oscar stage vis-a-vis the Soviets today.

Although this book was completed before the sputniks, it is remarkably up to the minute in its elementals. Amusingly enough it even keeps up with some of the week's lighter news. For example, the authors remark



Dr. Albert L. Latter

that their explanations of how atomic energy works requires no greater intellectual effort — "than is involved in the understanding of the income tax form." Which tallies with the news that Senator Arthur V. Watkins is offering a prize to anyone who pierces the meaning in a 212-word sentence in the latest income-tax instructions from Washington. On the serious side, the authors' warning that medical X-ray machines may cause more damage than bomb-test fall-out appears in the week that the New York Health Department is publishing new and more stringent rules concerning the use of X-ray machines by doctors, dentists, hospitals, business and research establishments. These rules will go into effect Oct. 1. The fine for violation will be \$500 and users of dangerous instruments

suffer
most wars
P. 118
5 fold of tests
increase

P. 122
Denver

P. 124. Hardin Jones
one since overrode

P. 129. Underestimate
of due to goods.

P. 130 Tibet.

P. 126.

P. 113.
"Lucky" complete
145" removed
Riding

1. Inception



LINUS PAULING ON RECORD

NOW...IN ALBUM
FORM VERVE
MGV-15020

...AN AUTHORITATIVE
ANALYSIS OF
CIVILIZATION'S
MOST CRUCIAL
QUANDARY:
FALLOUT AND
NUCLEAR WARFARE



*"By his efforts to prevent nuclear war
and to bring the powerful forces
of nuclear energy under international
control, Professor Linus Pauling is
rendering a great service to humanity"*

ALBERT SCHWEITZER

1 FEB '63. TELLER - SPOKESMAN FOR THE MILITARISTS
 "CLEAN & CHEAP NUCLEAR EXPLOSIVES
 ARE NEEDED FOR BATTLEFIELD USE"
 ... "I HOPE THAT"

Teller Test-Ban Warning

1 FEB '63
 Special to The New York Times.
 WASHINGTON, Jan. 31 — Following is the text of statement on a test ban by Dr. Edward Teller as made public today by the House Republican Conference:

Russian acceptance of a small number of control stations and on-site inspections have raised the hopes for an agreement on a test ban. Such a ban is considered as an important step toward ending the arms race. It is claimed that this serves the interest of the United States. Actually such a ban would be virtually unpoliced. It would endanger our security and would help the Soviet Union in its plan to conquer the world. The reasons for this statement are the following:

I. The test ban would prevent vital improvements of our atomic explosives.

The Russians have announced that they have solved the problem of missile defense. Our missile defense is unsatisfactory. In the absence of testing, our defense will not improve because we need more knowledge concerning the use of nuclear explosives in missile defense and in the penetration of such defense. If the Russians install a satisfactory defense system while we are unable to do so, this will put us at the mercy of Soviet blackmail and aggression.

We have started the development of clean and cheap nuclear explosives. We need more tests to complete this development. Clean and cheap explosives are needed for battlefield use, for peaceful applications, and for missile defense.

Tests Needed for Advances

Testing has frequently stimulated the invention of new approaches in the developments of nuclear explosives. Past advances of this kind are classified; future advances are unpredictable. Nevertheless, these advances are real and important. Without them our weapons laboratories will lose their competence in weapons research.

II. The test ban will not interfere with Russian progress.

The difficulty in policing small underground explosions has been pointed out. The present Russian concessions will certainly not permit the control of small underground tests. Tests of small explosives are helpful in all branches of weapons development.

Even bigger tests can be carried out secretly in space. This fact has been jointly asserted by American, British and Russian experts meeting in Geneva in June and July, 1959.

Russian Maneuver

The Russians have prepared an effective test series while negotiating with us. They have executed this series in the fall of 1961. In the closed Russian society such a maneuver is possible. In the open American society it is not. Repetition of the 1961 tactics may place the Soviet Union in a position of commanding leadership.

Only great and comprehensive openness could guarantee the observance of a test ban.

III. A test ban may endanger the NATO alliance.

The avowed purpose of the test ban is to halt the arms race and to set limits to the proliferation of nuclear weapons. It is hoped that a test ban will be applied in a universal manner.

It is unlikely that the ban will restrain the Chinese. But, it is highly probable that the ban will be resisted by the French and we shall be expected to exert pressure on them. This may strain NATO to the breaking point. The Russians may desire a ban for this very reason.

In 1938 the Western allies abandoned Czechoslovakia. This led to World War II. Had the Munich Agreement prohibited fighter planes and radar, the consequences would have been the fall of Britain.

The Russians want us to sign a Munich-type agreement and in this they are supported by widespread public clamor. I hope that patriotic Congressmen of both parties will resist the pressure of a public frightened by crisis and misled by the mirage of peace.

KENNEDY
 announced
 RESUMPTION
 of TESTS
 SAME DAY
 BEFORE
 (31 Jan '63)

PATRIOTIC
 CONGRESS-
 MEN of
 BOTH PARTIES
 WILL RESIST
 THE PRESSURE
 of a PUBLIC
 FRIGHTENED
 BY CRISIS
 AND MISLED
 BY THE
 MIRAGE
 OF PEACE.

HERE THE DEVIL IS SPEAKING,
 THE PERSONIFICATION of EVIL,
 THE Foe of MORALITY & GOODNESS,
 THE ENEMY of HUMANITY.

G.O.P. MAKES ISSUE OF KENNEDY STAND ON BANNING TESTS

1 FEB '63
 House Leaders Cite Teller Warning on Danger of Letting Soviet Excel

Text of statement by Teller on test ban, Page 5.

By JOHN W. FINNEY
 Special to The New York Times.

WASHINGTON, Jan. 31 — The House Republican leadership moved to make a party issue of the nuclear test ban negotiations by questioning whether the Administration is leading the nation into a risky, unenforceable treaty.

As the opening shot, the House Republican Conference committee made public a statement from Dr. Edward Teller, the prominent nuclear physicist, warning against acceptance of a Soviet proposal for a small number of control stations and on-site inspections in its territory.

The test ban based on the latest Soviet concessions, he said, would be "virtually unpoliced," and "it would endanger our security and would help the Soviet Union in its plan to conquer the world."

Policy Groups Set Up

The Conference Committee—the policy-setting group of the House Republican leadership—announced that it had established a committee to define a party position on the test ban negotiation. The committee is headed by Representative Craig Hosmer of California, a ranking Republican member of the Joint Congressional Committee on Atomic Energy.

The initiative being taken by the Conference Committee was viewed with some apprehension within the Administration, for it obviously was pointed at making the test ban a domestic political issue at a time that the executive branch is making a renewed effort to reach an agreement with the Soviet Union.

Thus far, while there have been latent misgivings in both parties, there has generally been bipartisan support for the position taken by both the Eisenhower and Kennedy Administrations in the test ban negotiations.

Periodically, critical statements have been issued by the Republican Congressional leaders, but there has not been a concerted attack such as is now planned by the Conference Committee.

The sensitivity of the Administration to the Republican move is indicated by the fact that William C. Foster, director of the Arms Control and Disarmament Agency, called Mr. Hosmer last night to deny reports that the United States was favoring a compromise proposal involving a "sliding scale" of on-site inspections in the Soviet Union, starting with three inspections a year and increasing with time to 10 inspections.

Mr. Hosmer said the purpose of his committee's study was to determine whether the test ban negotiations "on the current basis are either safe or sane in relation to national and individual survival."

In explaining why the study was necessary Mr. Hosmer repeatedly criticized the Administration for not making public facts on which the American people could evaluate the wisdom of the latest concession it has offered to the Soviet Union on the inspection and control issue.

The committee plans to issue a report next week giving its conclusions about the Administration's present negotiating position. There also is a possibility Mr. Hosmer said, that Representative Charles Halleck, minority leader of the House, may request radio and television time to present the Republican party's position directly to the people.

In many respects, Mr. Hosmer's statement, issued at a news conference, echoed one made this week by Governor Rockefeller of New York, questioning whether the Administration had unduly "weakened" its demand for a test ban treaty.

From Mr. Hosmer's comments it was apparent that his committee was unlikely to endorse the Administration's position in the negotiations now being carried on secretly in New York.

Mr. Hosmer described the Administration's proposal for monitoring and inspecting underground tests as "highly dangerous."

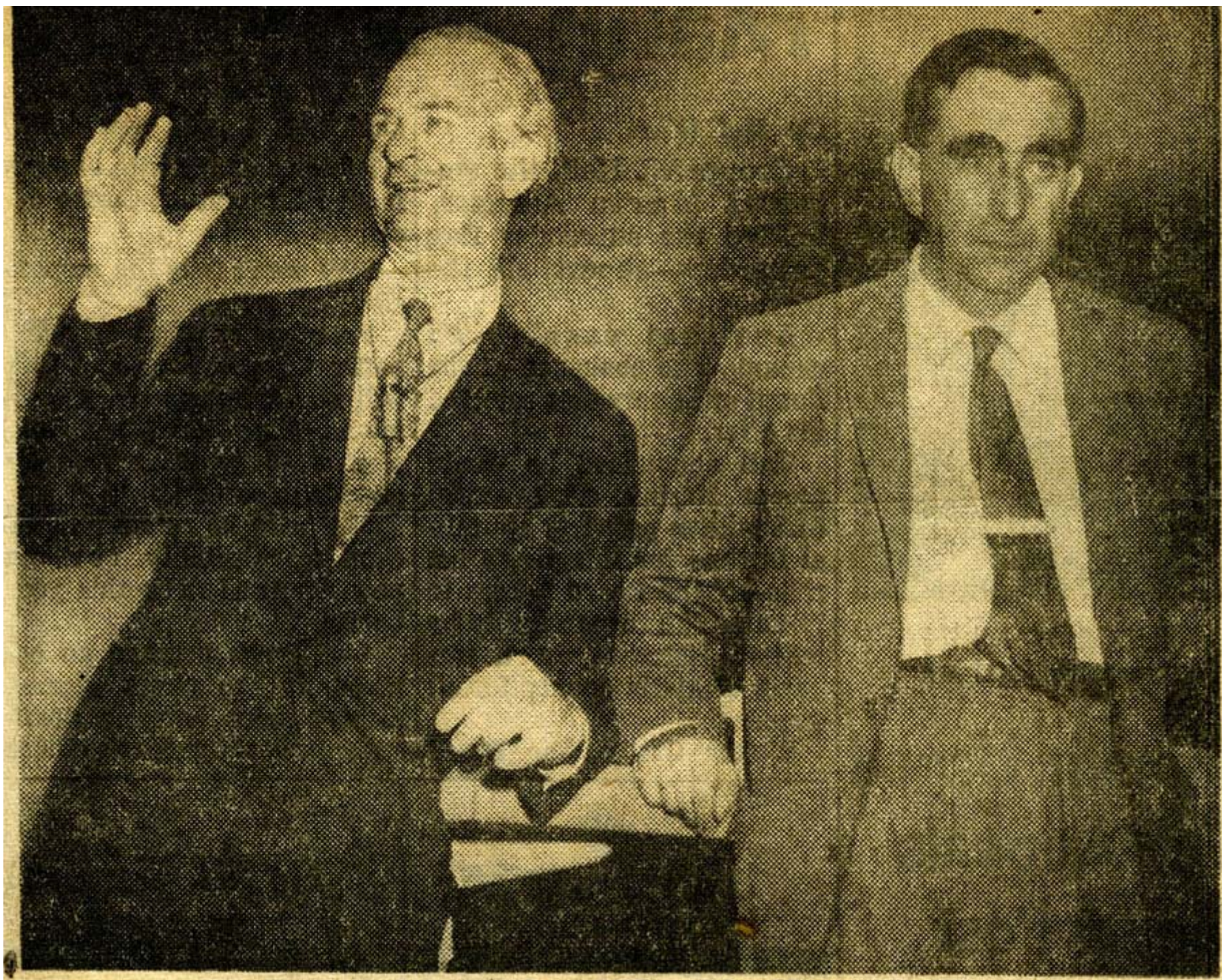
The number of on-site inspections, he noted, has been "drastically reduced" from the original demand of 20 inspections a year on Soviet territory. The present proposal is for an annual quota of eight to 10 inspections, with indications that this number could be reduced further if the Soviet Union would raise its offer of only three inspections a year.

Like Governor Rockefeller, Mr. Hosmer criticized President Kennedy for ordering a suspension of underground testing in Nevada during the current negotiations with the Soviet Union. He suggested that the order violated the President's past pledges that the United States would never again enter into a voluntary uninspected test moratorium.

Figure 1 illustrates that a nuclear industry operating organization's culture and ethics provide the basic foundation for its management systems processes. The culture of the world's nuclear industry is that the operating organization is always responsible for the safety and security of its facilities, even if the implementation of some activities is delegated to others. Thus, the health and safety of its employees, subcontractors, and the public, as well as protection of the environment needs to be a fundamental basis for a nuclear industry operating organization. Figure 1 also illustrates the strong linkages between the leadership of the organization, its culture and ethics, and its management system. Top managers and leaders influence the culture and ethics of the organization in what they say, but even more importantly in what they do, and what they monitor regarding the organization's performance.



Figure 1. Culture and Ethics as the Foundation for a Management System.



DR. LUDWIG B. DILLING (LEFT) DR. EDWARD TELFER

TURNING POINT FOR SURVIVAL

We will all fly
together when we fly

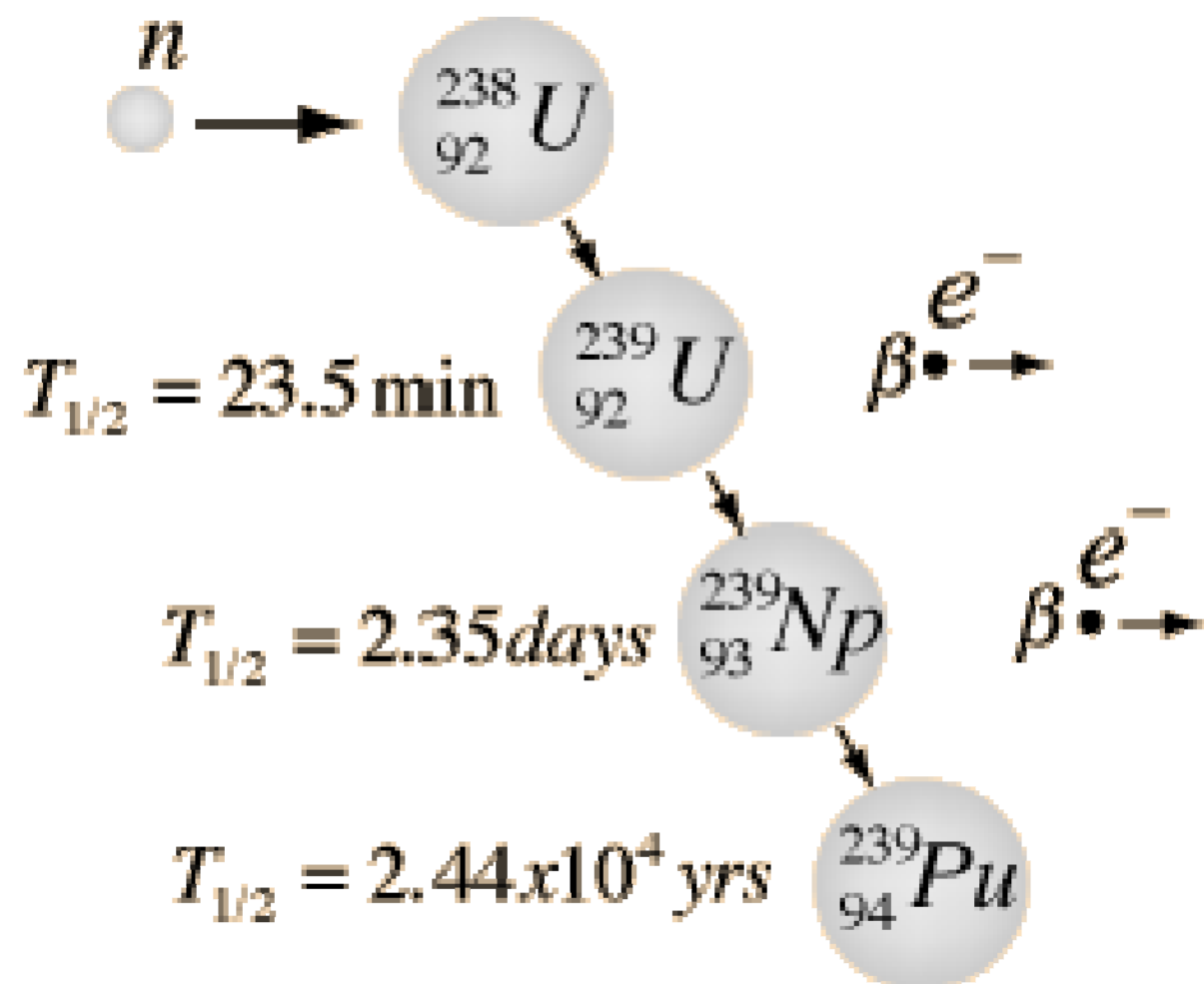
Three billion rising
shatters

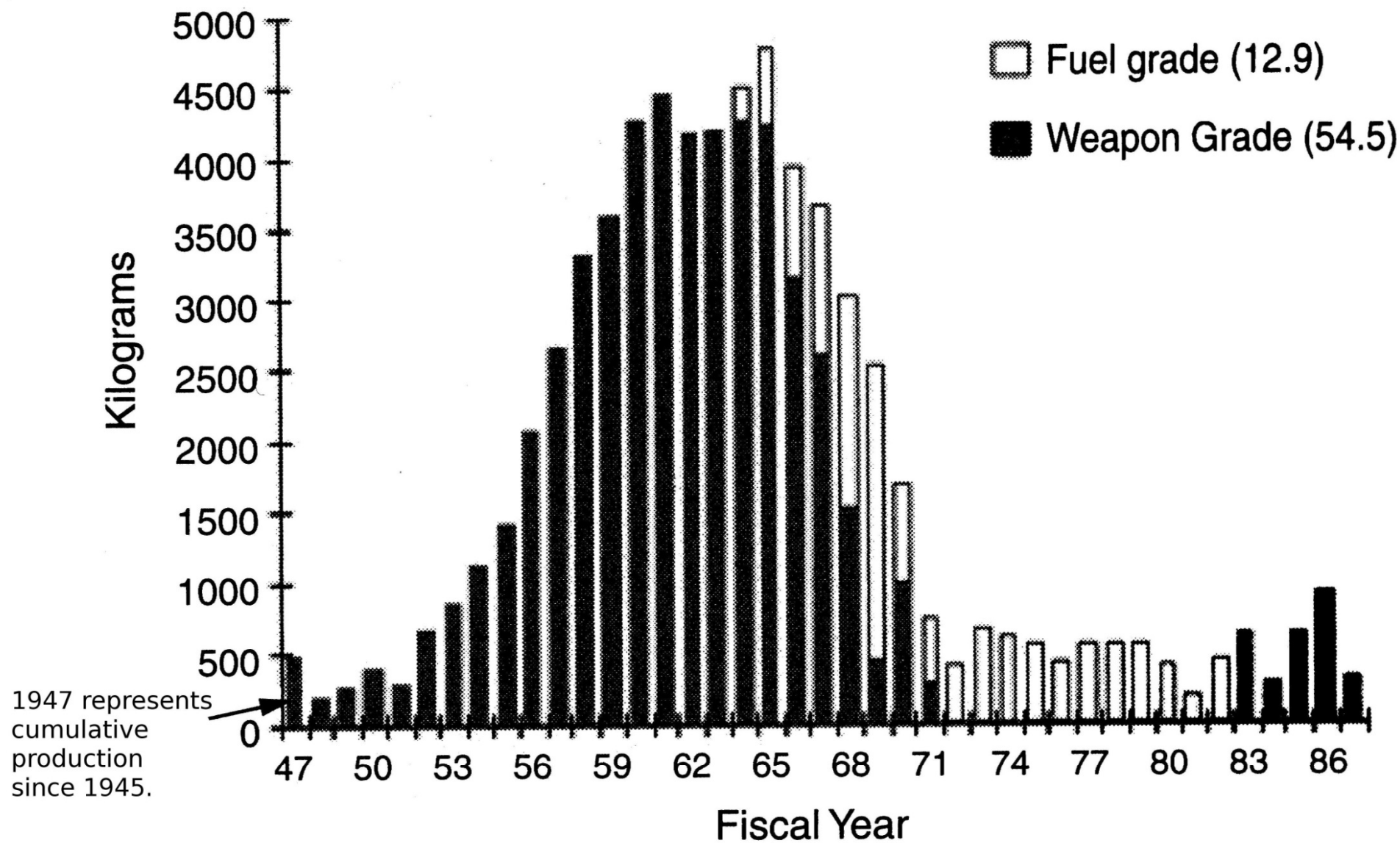
“WE ARE TALKING ABOUT THE HUMAN RACE
AND WHAT’S GOING TO HAPPEN TO IT.”

— President Dwight D. Eisenhower, 8/26/59

We will
all go
together when
we go

I dedicate the
song to the men
who are doing

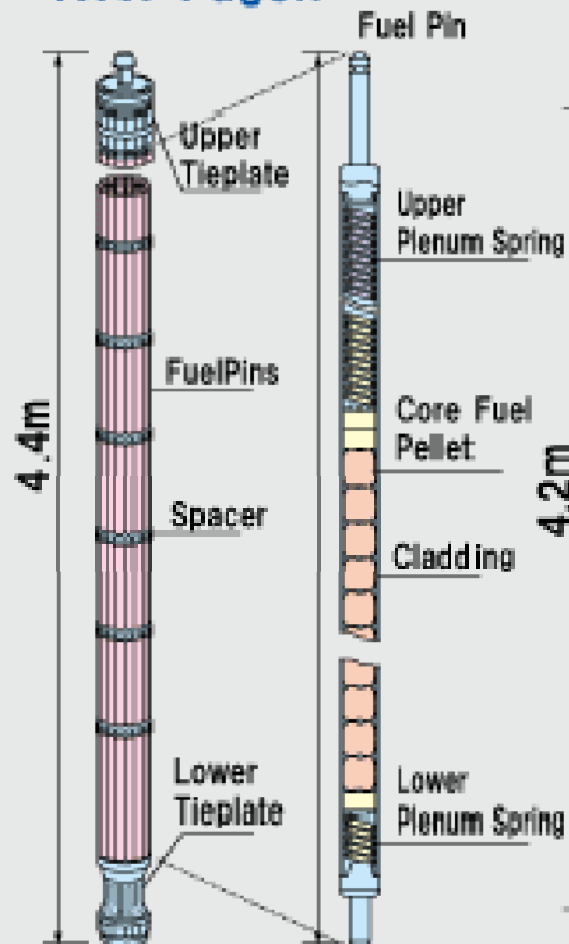




Hanford plutonium production

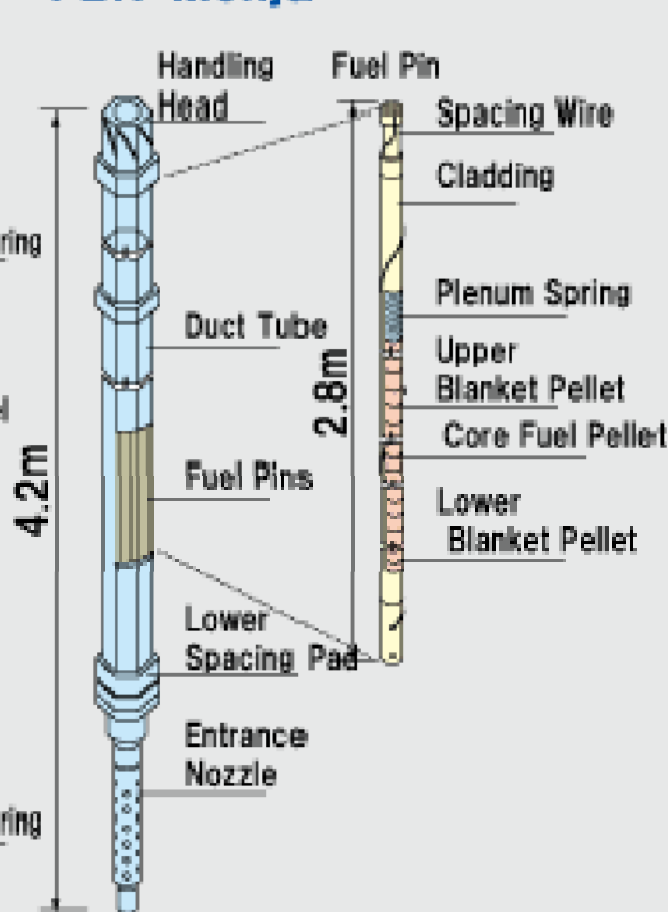
【MOX Fuel Assembly】

ATR“Fugen”



Fuel Pins

FBR“Monju”

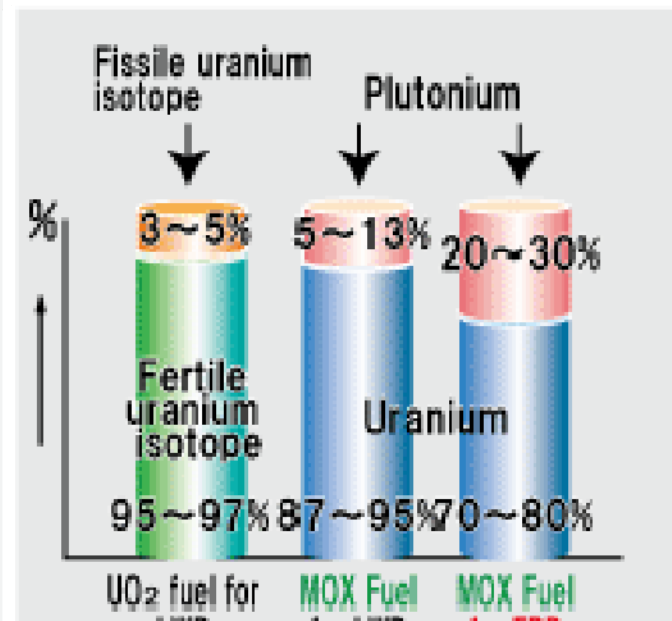


Duct Tube Fuel Pin



【Fuel pellets】

One fuel pellet for the FBR Monju is capable of generating approximately 1200KWh electricity, which is equivalent to the amount of electricity consumed in one household for a period of about four months. (Household power consumption: 290 kWh/month)



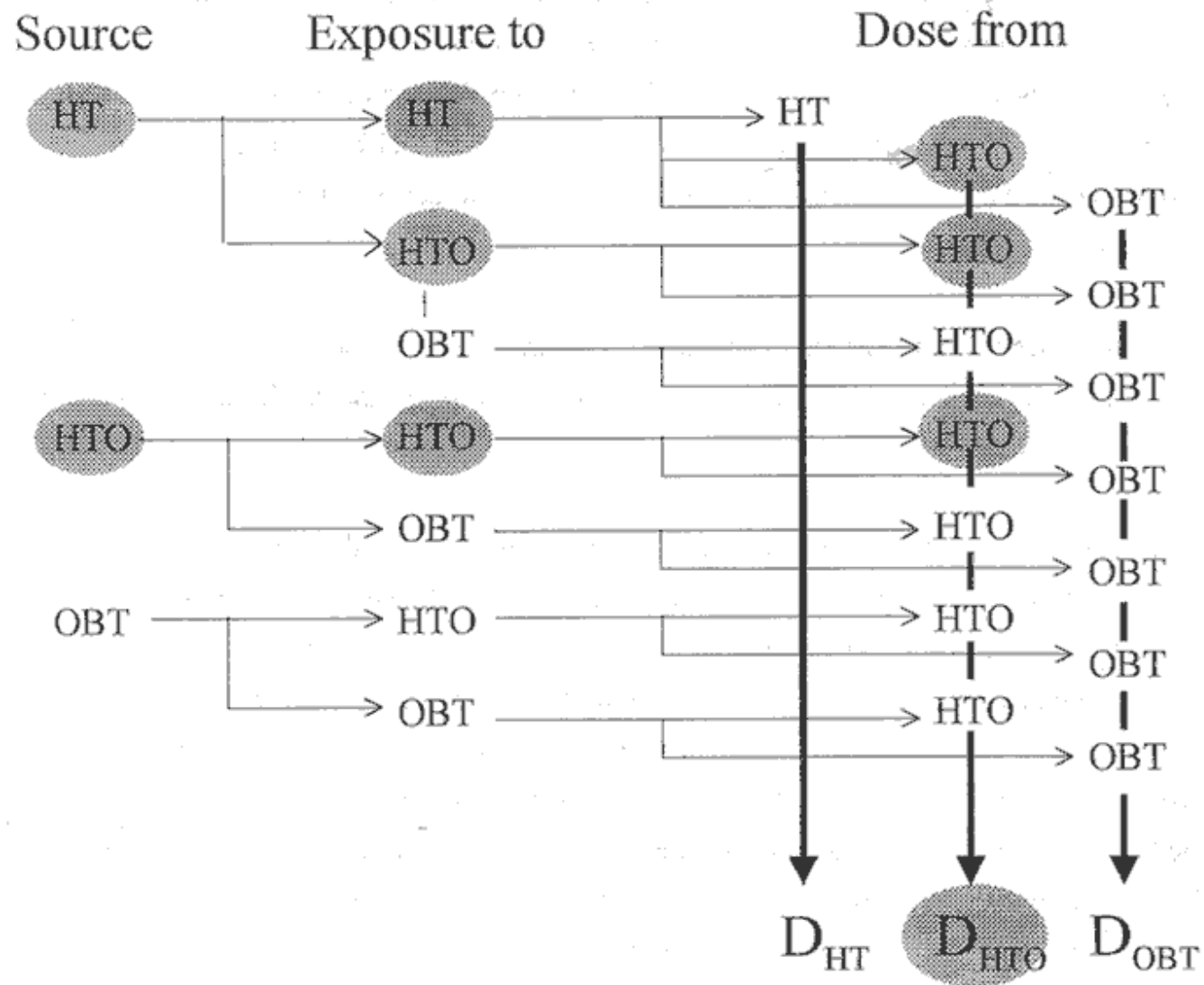
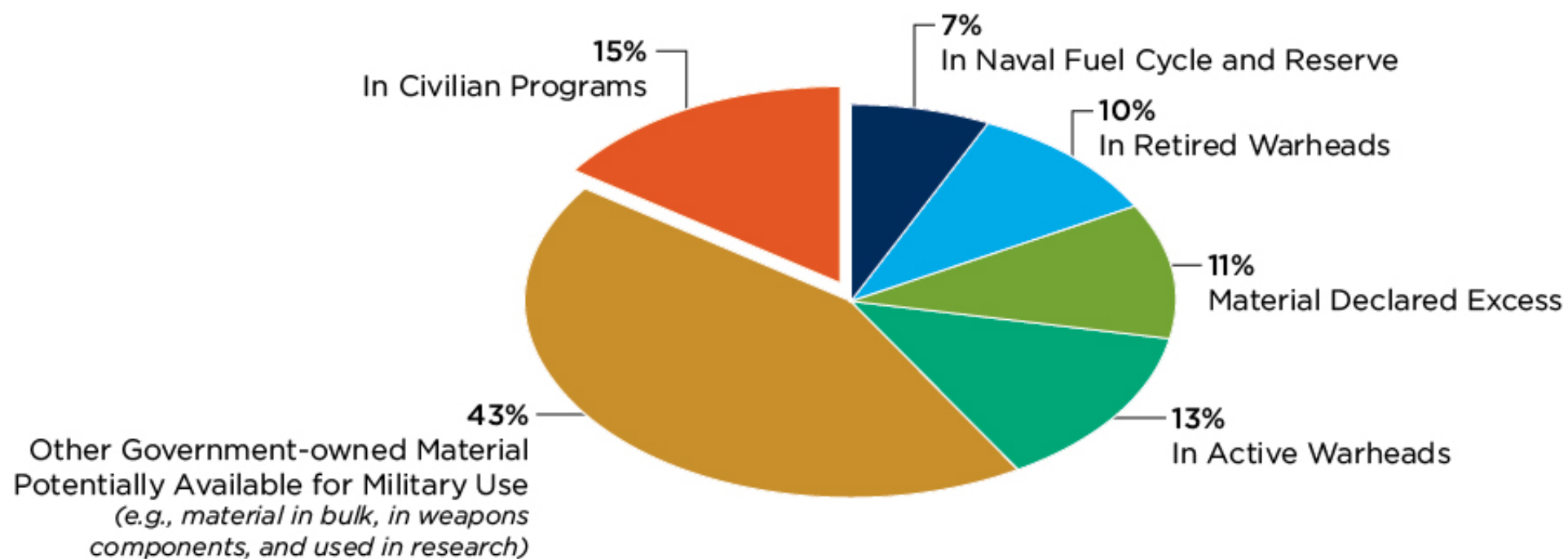
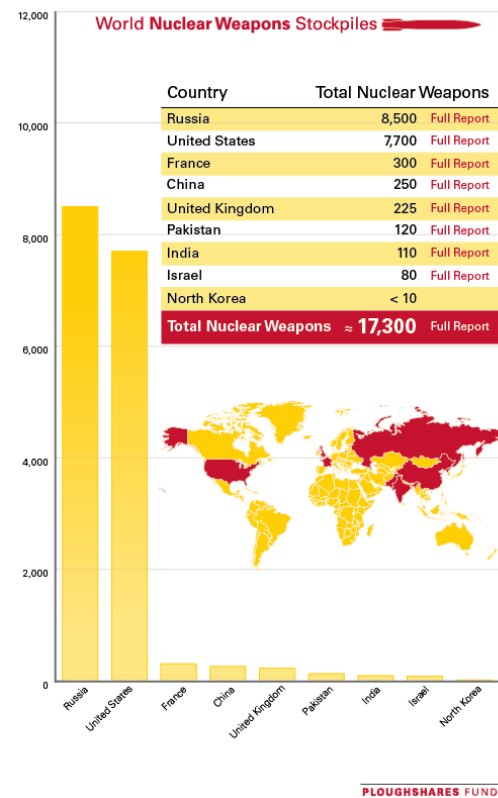


Figure 1: Chemical forms of tritium responsible for exposures and doses. The shading indicates the tritium components that are generally estimated or measured. The dose effectiveness of HT is much less than HTO or OBT and the current dosimetric assumption is to consider that all inorganic tritium is present as HTO. This report specifically addresses the potential magnitude of the dose from OBT (D_{OBT}).





Common uranium isotope 238 absorbs a neutron to become uranium 239



This is a beta emitter - it decays to produce neptunium 239



which in turn decays to produce plutonium 239



Production of Neptunium and Plutonium Tracers in Nuclear Reactions of ^{236}U with 21-to-60-MeV ^3He Ions¹

J. Aaltonen*, P. Dendooven**, E. A. Gromova***,
V. A. Jakovlev***, and W. Trzaska**

* Laboratory of Radiochemistry, Department of Chemistry, University of Helsinki, Helsinki, Finland

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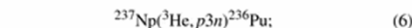
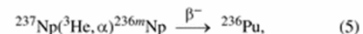
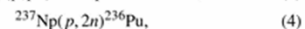
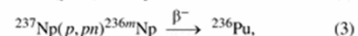
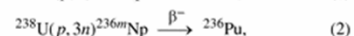
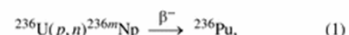
Received April 3, 2001

Abstract—Production of ^{236}Pu , ^{237}Pu , and ^{235}Np by the reactions $^{236}\text{U}(^3\text{He}, \beta^-)^{236}\text{Pu}$, $^{236}\text{U}(^3\text{He}, 2n)^{237}\text{Pu}$, and $^{236}\text{U}(^3\text{He}, p3n)^{235}\text{Np}$ with 43- and 60-MeV ^3He ion beams on the K-130 cyclotron of the University of Jyväskylä was studied. The cross sections for the reactions were determined. The curves of yields with thick targets were derived from the cross sections. The results are discussed and compared with previous data on the other reactions yielding the same final products.

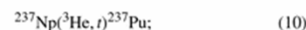
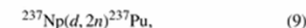
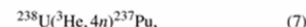
The nuclides ^{236}Pu (2.858 years), ^{237}Pu (45.2 days), and ^{235}Np (396.1 days) are convenient tracers for studying the distribution and biological pathways of plutonium and neptunium in the environment [1]. The α -emitter ^{236}Pu ($T_{1/2} = 2.858 \pm 0.008$ years [2]) is mainly used as a tracer for studying the release of $^{238,239,240}\text{Pu}$ into the environment from the nuclear fuel cycle and its migration in the geosphere. The nuclides ^{237}Pu ($T_{1/2} = 45.2 \pm 0.1$ days [2]) and ^{235}Np ($T_{1/2} = 396.1 \pm 1.2$ days [2]), which decay mainly by electron capture, are used as tracers for studying the biological pathways of plutonium and neptunium, respectively, in the environment. The increasing interest in using ^{236}Pu , ^{237}Pu , and ^{235}Np as tracers has stimulated the search for nuclear reactions for the efficient production of these radionuclides.

The nuclides ^{236}Pu , ^{237}Pu , and ^{235}Np have been produced earlier by the following reactions [3–14] (^{236m}Np is the short-lived isomeric state of ^{236}Np with $T_{1/2} = 22.5 \pm 0.4$ h [2]):

for ^{236}Pu :



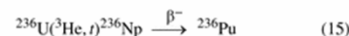
for ^{237}Pu :



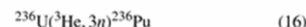
for ^{235}Np :



The most productive reactions for ^{236}Pu , ^{237}Pu , and ^{235}Np are (3) and (4), (8), and (13), respectively. However, it was noticed that the charge-exchange nuclear reactions as, e.g., $^{238}\text{U}(^3\text{He}, t)^{238}\text{Np} \xrightarrow{\beta^-} ^{238}\text{Pu}$ [3] and $^{237}\text{Np}(^3\text{He}, t)^{237}\text{Pu}$ [8, 9] have large cross sections and, correspondingly, high yields. Therefore, it could be assumed that the reactions



and



¹ Reported at the Sixth Finnish-Russian Symposium on Radiochemistry (Helsinki, November 7–8, 2000).

Deny-delay-deceive the code of conduct of nuclear industry.

- I never sought out awards and did not inspire fame.
- IAEA. The most compelling evidence of the failed IAEA is self-deceit, false dichotomy.
- Nuclearize is deeply rooted in psychiatric pathology as well as in collective pathology. Self deception, lies, propaganda, power, money ecil,ect.
- Why we need ethics? If we have ethics, we will not need a code.The code is to regulate those who have no ethics (lavinia Dock)
- In December 2014 Vienna conference, Austria and 68 states put forward a document the Vienna Pledge that seek to “fill the gap for the prohibition and elimination of nuclear weapons>\”
- Nikita khrushcev said that “the living would envy the dead”
- Ronlad Reagan said “a nuclear war can not be won and must never be fought”
- 1961 Pauling Lindus said that “the Dead will inherit the earth”
- “Now I am become a death, the destroyer of worlds”
J.P. Oppenhiemer. Deluded scientists, dubious experiments and dubious professional ethics. Untested and non producible prototypical examples of fringe science.
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