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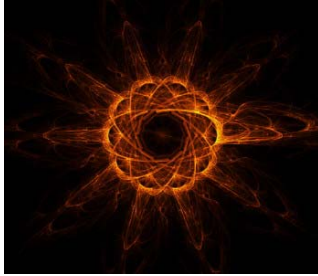


News Letter



October 12, 2007

NUCLEAR ENERGY



Armed conflicts in which nuclear weapons were used have caused serious environmental repercussions; air pollution from the explosion of oil wells, the premature downfall of tree-leaves due to the presence of chemical substances, and climate changes generated from the smoke of large fires are only a few examples of the severe environmental damages that the earth has suffered from the misuse of nuclear energy.

Nowadays an extensive range of international instruments pretends to put an end to the use of these weapons; however, this newsletter will address nuclear energy differently focusing on the importance that this source of energy may acquire if used with purposes different to warfare. In the same manner the document will present environmental benefits that may come if used responsibly and under a reliable legal system.

In this issue

- 1 **Nuclear Energy: A solution for the future?**

“Nuclear energy may be produced through two processes: fusion and fission”.

INTRODUCTION

Nuclear Energy may be generated through two processes: fusion, by joining two atoms to create a single one (its generation is contained in laboratories), and; fission, where one large atom is broken down into two or more smaller atoms, liberating both energy and neutrons in the process (it is the method currently used in nuclear facilities).

The first attempts to use nuclear energy were while the development and production of the h-bomb, that afterwards destroyed a whole city.

Since the 1970's, due to the scarcity of petroleum, several energy crisis have occurred resulting in the attempts by various countries to find alternate new ways to generate electric power. As a consequence of these attempts, the first nuclear power plants were designed and built to operate with uranium as their essential feedstock.

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"The 'Olkiluoto 3' is the first conceived in Europe after Chernobyl in 1986".



Article 27 of the political Constitution of the Mexican United States regulates the use of nuclear energy.

According to the UN's statistical information the 430 currently existing nuclear reactors account for approximately 17% of the electricity generated worldwide, and more specifically 40% of the electric energy of 8 different countries is generated through nuclear sources.

As of this need to find alternate methods to generate power, several countries have focused their scientific and economical efforts in the construction of nuclear power plants. As an example of the aforesaid we have countries such as Finland, an European country in the process of constructing a nuclear power plant named 'Olkiluoto 3' which is the first being developed after 1986, when the explosion in Chernobyl occurred, this new facility will begin operations in 2011.

Interestingly enough, these facilities have been built aiming at a process that does not damage the environment, as opposed to the combustion of fossil fuels, practice that has brought environmental affectations such as climate change, while providing opportunities to countries developing this technology and projects to stop their dependence on others, such as Russia, the United States of America and France, who have historically controlled the energy market.

NUCLEAR ENERGY IN MEXICO

Nuclear Energy is regulated in Mexico by article 27 of the Political Constitution of the Mexican United States as follows: "... it also corresponds to the Nation to exploit and benefit from nuclear fuels for the generation of nuclear energy, and the regulation of its applicability to different purposes. The use of nuclear energy will be for pacific means only".

As of the above, the Law that Implements the provisions of Constitutional Article 27 on Matters of Nuclear Energy was enacted to regulate exploration, exploitation, benefit and profit of radioactive minerals, as well as the use of nuclear fuels, nuclear energy, and both scientific and technological investigation in matters pertaining to nuclear energy.

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Nowadays Mexico has two nuclear reactors: the Laguna Verde Central (**LVC**) located in the State of Veracruz, and the TRIGA MARK-III reactor at the facilities of the National Institute of Nuclear Investigations, apart from two sub-critical assemblies at the Autonomous University of Zacatecas and the National Polytechnic Institute (**IPN**) that operate with research purposes.

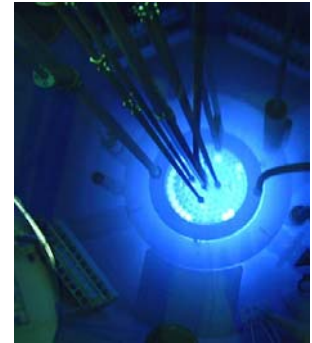
Scientists assert that given LVC continued compliance with safety and quality standards required by the International Atomic Energy Agency (**IAEA**) and the World Association of Nuclear Operators (**WANO**), it turns to be necessary to invest in new plants similar to the latter in order to produce larger amounts of energy at lesser environmental costs.

The U.S.A., China, Japan, Korea and Russia have continued their policies of building nuclear power plants; hence investigators ascertain that the sensible choice for Mexico would be constructing new power plants of this sort, in order to generate 'clean energy' while guaranteeing the supply of raw materials since fossil fuels would not be exploited (carbon, petroleum, gas). A thermal plant burns one million tons of coal per year, and the emissions from its combustion are released to the atmosphere which results in acid rain. The aforesaid lays down the need to search for new forms to generate energy.

While building a nuclear facility represents a large investment and a time-consuming process, the benefits that it may render transcends the environmental field as the production of energy is much more efficient than that generated through traditional means.

The demands of the energy sector have increased and the fossil fuels reserves will be insufficient to satisfy it, leaving Mexican authorities and society the top priority task of creating new nuclear power plants.

From a social standpoint, technological awareness must be encouraged, promoting new alternatives not only in the area of energy but in all fields allowing for a country to be competitive and provider of welfare and a decent living for all citizens.



"The United States, China, Japan, Korea and Russia continue their plans to install new nuclear plants".

NUCLEAR ENERGY INTERNATIONALLY

It has been internationally agreed that the sole purpose for the use of uranium is generating positive effects for mankind, nevertheless the efforts of the International Atomic Energy Agency (**IAEA**) have been insufficient, considering that countries such as Iran have continued with or even focused on the creation of nuclear weapons.

The main nuclear world powers: the United States, Russia, Great Britain, China and France have now been joined by Israel, India and Pakistan as countries that possess the atom bomb.

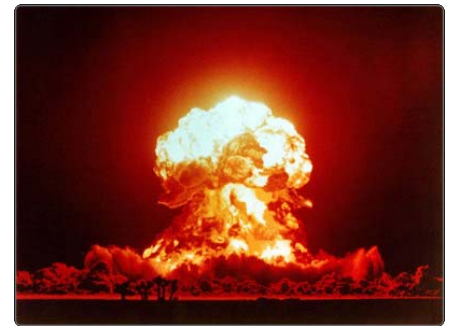
Producing nuclear energy would result in international responsibilities between supplier and consumer countries.

Nuclear testing performed by North Korea in 2006 demonstrated the lacking legal certainty of the matter, having that these activities were condemned by the majority of the international community in what was denominated a "nuclear crisis" yet had no legal repercussions, even when there exist both legal and diplomatic means to sanction these activities. Nowadays there are no guarantees in the use of uranium and other necessary elements for the production of nuclear power.

Truth is that notwithstanding international instruments such as the Treaty to Prohibit Nuclear Weapons in Latin America, dated February 14, 1967, and the Treaty to Ban Nuclear Testing in the Atmosphere, Ultra-Terrestrial Spaces and Underground, signed on August 5, 1973. All international efforts carried out to this date denote failure on this subject's matter at both legal and diplomatic levels.

It has been demonstrated that climate change issues deriving from the generation of green house gases (GHG) may be lessened by using nuclear energy sources. Generation costs are very similar to those of power plants operating with natural gas; however the latter does not present a constant, so the fuel supply may be scarce and consequently increasing operating prices. Today, one sixth of the electric energy generated is produced in nuclear power plants, which provides an encouraging panorama to trust, generate and invest in new power plants.

Nuclear testing by North Korea in 2006 evidenced the lacking legal certainty on the matter".



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If the intention is reducing carbon emissions to comply with international commitments acquired by a signing country of the Kyoto Protocol, then nuclear energy may be the answer, since the pollutants generated at these plants are far less than those coming from facilities burning fossil fuels.

France currently leads the field with 59 nuclear power plants, followed by Russia with 31 operating facilities and five more currently in construction, and the United Kingdom with 19.

We have already analyzed the importance of this type of energy and we must now approach its polemic issues. The generation of wastes through nuclear processes has not been well defined yet, as many believe that these wastes should be stored in chambers several hundred meters underground; on the other hand, others think that the same measure will only delay the appearance of the negative effects caused on the environment. One solution could be reusing these wastes in the energy generation process.

Pollution as of these wastes has stalled the development of projects of this kind. As it has been previously mentioned the 'Olkiluoto 3' Central is currently under construction in Finland, and will be the first in the world to have a high level storage area for its nuclear wastes, which has created a sense of safety in the minds of the area's inhabitants.

The scenarios for the United States of America are not different, the development of several nuclear plants has been interrupted due to licensing and permitting delays; therefore fossil fuels continue to be the base for the generation of energy –as is the case of Mexico.

The problems that the United States has encountered to build these plants should be guidelines for Mexico. It would also be convenient for project developers to jointly work with the competent governmental agencies in the implementation of this alternative to generate electric energy, with the purpose of mitigating climate change effects and avoid dependency on fossil fuels.



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CONCLUSIONS

Firstly, it is important to point out that notwithstanding the use of uranium in warfare, it may bring great benefits as it helps generate clean energy. Thus, the decision making process regarding the construction of nuclear centrals must be expedited since setting up these facilities takes approximately ten years.

Moreover, new programs to comply with international environmental obligations to reduce pollution have encouraged the discussion of topics related to nuclear energy production, when such discussions had ceased after the explosion at Chernobyl.

In addition, we are of the opinion that the posture taken by certain environmentalists is inadequate, as they immediately relate nuclear power to the atom bomb, poor waste management and accidents, without taking into consideration technological developments that have demonstrated that environmental damages can indeed be prevented or controlled if adequate protection and safety measures are followed.

It must also be noted that the use of fossil fuels has also caused great environmental catastrophes and damages to human health, being this a reason to allow for a new sector in the market as long as possible damages are both foreseen and considered.

Sustainable development must be achieved in every sphere, and if the intention is to develop new means to generate energy then the answer is in our hands.

It has been evidenced that civilization cannot currently exist without energy and that consumption of natural resources steadily increases, resulting in the need to join forces to satisfy demand.

*The purpose of this newsletter is to provide timely information, and inform the audience that through adequate legal advice and planning nuclear energy may bring great benefits; therefore, the opinion herein expressed might not be seen as a legal advice. Partial or integral reproduction of this material needs the previous written authorization of **Gonzalez Calvillo, S.C.***

GONZALEZ CALVILLO,s.c.
ABOGADOS

Leopoldo Burguete Stanek
Environmental Law and Sustainable
Development Practice
lbarguete@gcsc.com.mx
+(5255) 5202.7622
Montes Urales 632 – Piso 3
Lomas de Chapultepec
11000, México, D.F.