

Five-year Personal Experience in Foreign Policy on Nuclear Energy



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I feel very honoured to have been invited this morning by the Korean Section of the American Nuclear Society, as a special Speaker. I know the interest and high quality of the discussions organized by your Society.

I have, also, a certain nostalgia for the energy problems for the nuclear questions in particular, in which I have professionally been deeply involved over the last few years. That is an additional reason for me to be happy about being with you this morning.

-Indeed, as a member of the french diplomatic career, I was appointed by my government in 1980, as one of the high officials in charge of purposing and implementing the foreign nuclear policy of my country. Vice-President of the Atomic Energy Commission, I was also governor for France at the AIEA in Vienna.

I am not an insider, but an outsider, even if involved at a high level of responsibility in the nuclear activities of my country - I am not a scientist but a generalist.

That is why, feeling it could be interesting for this audience, I thought, when I was first contacted, that I could evoke my personal experience and some of the conclusions it led me to reach. The views I will express are my own.

註 : 本稿는 지난 2月1일 開催된 美國原子力學會(A NS) 韓國支部 月例技術討論會에서 發表된 內容을 要約 整理한 것임.

I would like to briefly focus on two main and essential aspects which marked recent nuclear history :

- The development of electronuclear and its problems.

- Some questions related to the Non-proliferation regime.

I / THE ELECTRONUCLEAR PROGRAMS

A/At the beginning of the present decade, the nuclear power programs with some notable exceptions, were in great disorder- especially in the O ECD Region which represents approximately 80% of the nuclear electricity installed capacity. This situation was in clear contradiction with the energy crisis which developed through the two oil shock of 73 and 79.

- In the United States, for example, a movement of cancellation of orders, or of already engaged nuclear power plants, was one of the characteristics of the situation, together with a major extensions of the construction delays of nuclear power plants (and coal fired plants as well) which had obvious negative consequences on the competitiveness of the electronuclear during a period of high interest rates. These phenomena, still underway, began approximately during the first part of the last decade. At the same time, a moratorium was established of the reprocessing of irradiated fuel; no special efforts were undertaken concerning the back-end of the fuel, with all

the consequences on the management of the fuel cycle.

For a large part, these phenomena had socio-psychological explanations :

The reaction of the public was clearly characterized by an apprehension about the presumed potential hazards and dangers of nuclear energy; the fears of proliferation were also in the pictures.

This perception had political consequences and led to a multiplication and a growing complexity of the regulations, a sort of paralysis of the "licensing" system, a constant intervention of the judiciary in the process of construction.

In Europe the situation was comparable although not reacting to such a degree, and was not homogeneous.

- A "de facto" moratorium had more or less frozen the German program; In Austria, it was decided through a popular referendum, to put in mothball the only and newly finished nuclear power plants; In the Netherlands, in Northern Europe, in Great Britain the opposition to nuclear power plants and to nuclear energy was strong and in some cases totally paralysing the Italian program was in a great disarray. France, on the contrary, was developing with determination its own nuclear power program. In Japan there were some hesitations which resulted in delays-

- In contrast, one could note a strong will, in some developing countries, to try to find a solution to these energy problems through nuclear energy.

B/WHERE DO WE STAND TO-DAY ?

I/One can say, considering the OECD area for example, that five years later, there is a real improvement in the psychological climate surrounding nuclear energy, This evaluation has not been homogeneous, and remains fragile. It represents nevertheless, a serious progress, perhaps a decisive one.

This evolution has been helped and reinforced by leaders of the most industrialized countries. In Ottawa, at the Summit meeting in 1981, the Heads of States or Prime Ministers of these countries put in evidence in their final common declaration, the qualities of competitiveness and of safety of the nuclear energy. They affirmed that for massive supply of electricity, nuclear and coal are the best sources. They decided that the achievement of the nuclear programs in their own countries should be backed so as to catch up with the delays experienced over the previous years. Similarly, the OECD itself underlined, on many occasions, the advantages of nuclear energy, not only in economic terms but also insisting on the independence it can give.

2/- Clearly there was, and still is, a growing political will to put the nuclear programs back on the track.

In Germany, since 81, the program is developing following the national planning ; Japan is going on; In Italy the situation is better. The Swiss had a referendum, last year, about nuclear energy, the results of which were positive although with a rather thin margin; In the Netherlands, the government is going on with the idea of building new nuclear power plants, which would have been unthinkable some years ago.

Very meaningful was the statement made by the White House some months after President Reagan was elected. And the political actions which followed. The general idea was the necessity to give equal chances to nuclear energy as to other sources of energy. So as to reach that goal the declaration said it was imperative to simplify the regulations, the complexity of which had contributed so much to impede a normal development of nuclear energy. The necessity of developing breeder reactors so as to maintain this option open for the future, was clearly stated - The Moratorium on indigenous reprocessing was

lifted.

3/This political will to help facilitate the development of nuclear programmes led to concrete activities of reflexion and assessment. The french case was the object of many studies and analyses abroad. It was one of the very few countries where the nuclear programme followed its course steadily with continuity and on a very broad basis (59% of the electricity in 85 was of nuclear origin against 8% in 74; 31×900 MWe are in commercial operation; 2×1300 MWe in operation - 18×1300 MWe under construction; 2×1450 ordered - 70% of the electricity in 1990 shall be nuclear generated) - The standardization aspects, adopted since a long time in France, was very much analysed by utilities abroad or by governmental organization. Indeed, the "standard design" has proved suitable for the majority of sites, and capable of being adapted without great difficulty - This system of stabilization of technique, with possibility of improvements due to technical progress and experience feedback permits easier relationships with the authorities as well as minimization of hazards. It shortens construction time. I remember the numerous visits of foreign experts. To be brief, the Germans have now adopted the "convoy System" and the reflexions about standardization are encouraged in the USA, despite the difficulties to adopt such a system due to the multiplicity of actors: dozens of utilities, different suppliers of NSSS, a great number of engineering companies. Nevertheless, whatever the determination of the Administration, in particular of the DOE, the reform of the "licensing" process and of the regulations seems to be a very heavy task which is far from being achieved.

4/There are other important factors which have contributed to the slowing down of the rhythm of investment in the energy sector as a whole, and in the nuclear sector in particular:

- The climate of economic crisis we have known

for a decade or so has had as a result a lower growth than previously predicted, and consequently a lower growth of the electricity demand;

- The very high rate of interest had a negative effect on the decision of investment, particularly in capital intensive sectors.

- The problem of foreign debts led some countries of the third world to take a cautious position towards important investments.

5/- And yet nuclear energy has shown and demonstrated a very high competitiveness in the long run in many countries; In Germany, Japan, Great Britain, even in the US when the construction time is normal. In France, comparative generating costs for units operating in base load in 1992 expressed in current french francs of January 1984 are 23 centimes/kWh for nuclear, 33 for coal, 73 for oil. In a more concrete approach the rapidly growing exports (and quantitatively important) of electricity by France-EDF to european countries clearly demonstrate the competitiveness reached by nuclear generated electricity.

- The problem we are facing is a general one in the field of energy: a great prudence and restraint in the decisions of investments; this problem has some specific aspects in the sector of nuclear energy. For example, very few countries launched new investment of nuclear power plants in 84 and 85 (France and Japan only).

Whatever such a situation in the energy field, the competitiveness, the safety, the quality of nuclear energy in terms of protection of the environment (as compared to coal) are now clearly proven and admitted internationally - Already 13% of the electricity produced world wide is of nuclear origin, this figure will amount to 20% in 1990, taking into account the facilities under construction.

The question that is clearly and officially raised now is to know whether or not, in the industrialized world, the capacity will exist in the coming decade to supply the demand of electricity, espe-

cially if there are some improvements in the economic growth. This question is the object of serious studies and reports in the US, and in many European countries- Another point to note is that definition of energy programmes should not be influenced by the erratic and uncontrollable movements of oil prices.

In all these aspects, it is my deep impression that Korea has a clear, precise and determined and long term oriented view of its own interests.

II/ THE NON PROLIFERATION REGIME

At the beginning of the eighties, The non-proliferation regime was very much contested. The critics against that regime reached a serious degree of tension during the second Non Proliferation Treaty Conference, in the summer of 1980.

Why such tensions? The history of the seventies in the field of a nuclear international affairs is a very active one. The preoccupations over the risks of proliferation took a great importance and a new strength in many countries. Gradually, the idea emerged that complementary and common disciplines should be applied by the main suppliers in the nuclear trade. Under that background, the main supplier states (among which USA and USSR) met in London and defined a new set of rules which they committed themselves to abide by; those rules are known as the "London Guide Lines" - To sum up, they focus on the following ideas:

- Parts and materials contained in a list should not be transferred without being safeguarded by the A. E. I. A.

- Supplier States should show restraint in the transfer of sensitive technologies and related investment. Those so called sensitive technologies are "reprocessing", "enrichment of uranium", "fabrication of heavy water."

Furthermore, some States, the United States, Canada, Australia for example, took additional

laws (the non-proliferation nuclear Act in the case of the USA) which defined more severe conditions yet to be accepted by the State with which they are cooperating in the field of nuclear energy: full scope safeguards, authorization for reprocessing on a case by case basis.....

We may say that to-day, this debate is not as it used to be, although it still is clearly in the fore-front- For example The 3rd NPT review Conference, last summer, did not focus that much on that issue.

The reasons, obviously, are related to the fact that the nuclear programmes are not, in many countries, at such an advanced stage that could technically and economically justify the intention to develop sensitive technologies. On the other hand, these London guide lines, eventually, are common sense and have some logic, if they are applied in a pragmatic way- that is to say taking into account the situation of the countries- and not in a dogmatic one- That is anyway, my personal judgement on this very controversial issue. And I may add that, precisely for these reasons and through my own experience, I feel that these London guide lines will last, and that after all they could be accepted by a growing number of countries in the future.

Whatever the way rather smoother than expected, the 3rd NPT Conference evolved the debate on non-proliferation is certainly not at an end. We should even expect a hardening of these controversies in the future, which could once more make of those questions a major theme of international discussions.

My view is that the non proliferation regime has reached a certain balance, a certain point of equilibrium, whatever the critics from those who would like a more severe system or from those who claim it already is too restricted- I think this regime has demonstrated a certain efficiency. My feeling is that it could be wise to stabilize it.