

## **Address of František Janouch when starting the teaching of nuclear studies at the West-Bohemian University in Pilsen, 24.09.2010**

My dear young friends, esteemed professors, associate professor, teachers, invited guests!

I am very honored by the invitation to participate at the ceremonial opening the teaching of nuclear disciplines at the West-Bohemian university in Pilsen. It is an important initiative and I would like to use it for a short meditation.

I recollect my youth. Already at an age of about 10 I decided to become a chemist, I even build a small chemical laboratory in our kitchen, I was seeking different chemical compounds, was making experiments with different explosives, tear gas etc.

From the summer of 1945 I began to be attracted by nuclear physics. I was not yet 14, when on August 5, 1945 the Czech radio broadcasted the news about nuclear bomb exploded over Hiroshima. I was at vacation at my grandparents in a South-bohemian village Kamenný Újezd near České Budějovice.

The destruction produced by the Hiroshima bomb astonished me. I tried to understand how the relative small bomb could produce such a vaste amount of energy. But I knew so desperately little, in fact only the Einstein's equation

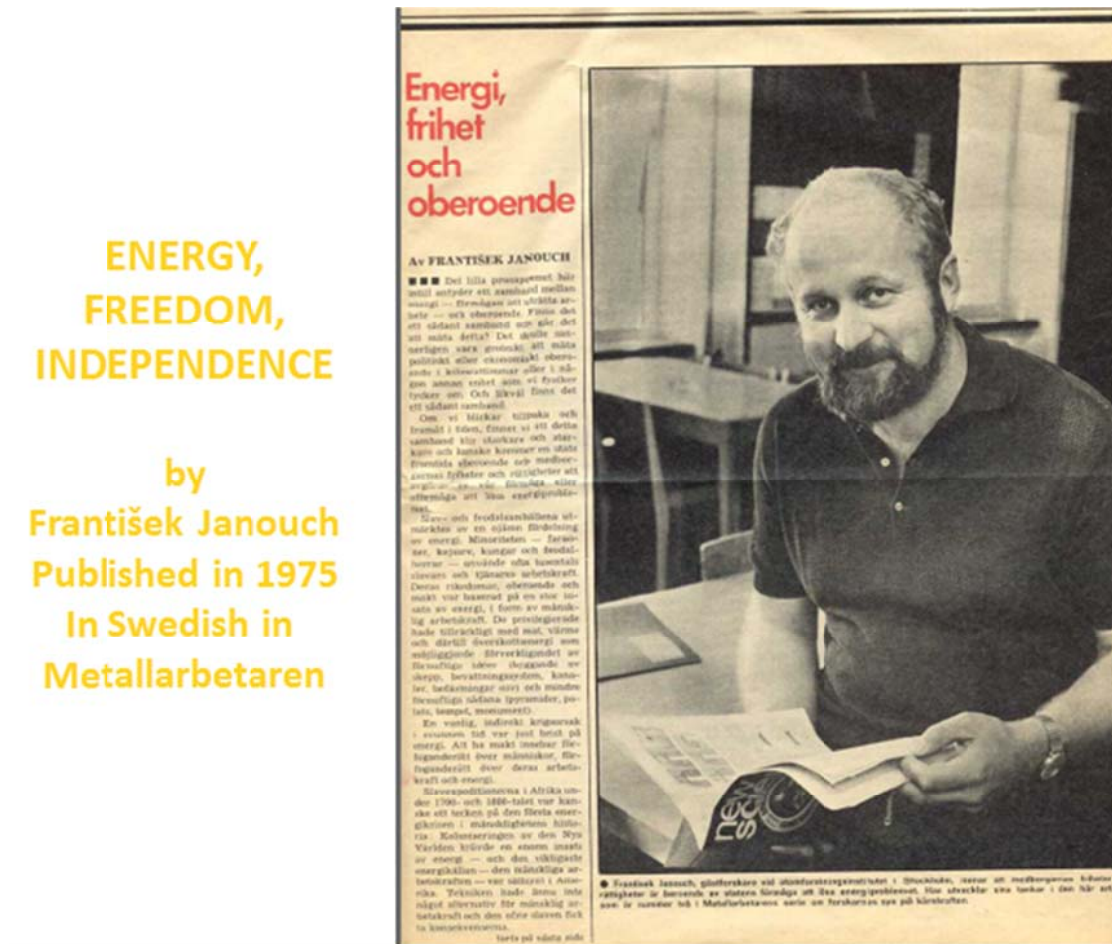
$$\mathbf{E=mc^2}$$

and, of course, it was not enough to understand the nature of a nuclear explosion.

From this moment I started to search of available literature and was reading and reading. When I received, in 1949, a fellowship for studies in the USSR, I was most happy. I was looking forward to learn the theoretical and nuclear physics from the celebrated Soviet scientists like Fock, Frenkel, Ioffe, Landau, Kurchatov, Ginzburg and many others. Unfortunately, due to a bureaucratic mistake, I was sent to study at the Leningrad Chemical-technological institute and it took three endless semesters before I persuaded the authorities that I must study the theoretical and nuclear physics. Finally the Prague approved my transfer to the physical faculty of the Leningrad University – they approved it with a comment let Janouch do the nuclear physics, although we are a small country and we will never need nuclear science...

Fascination by energy remained me for my whole life.

When after being deprived of a Czechoslovak citizenship in 1975 and received a political asylum in Sweden, the title of my first article I published in Swedish was: Energy, Freedom and Independence.



I proudly distributed reprints of my paper to my new Swedish friends and politicians. To my disappointment that they were not at all impressed: they asked me vaguely: Energy and Freedom? Or even Independence? What connection might be between these abstract things?

I decided therefore to explain my ideas in a larger and more „scientific“ paper „Nuclear Energy – to be or not to be?“ With a longer subtitle: „On Sweden’s Health and Political Risks of not Going Nuclear“ and distributed it via the mailing lists of the Research Institute of Physics in Stockholm (Former Nobel Institute for Physics).

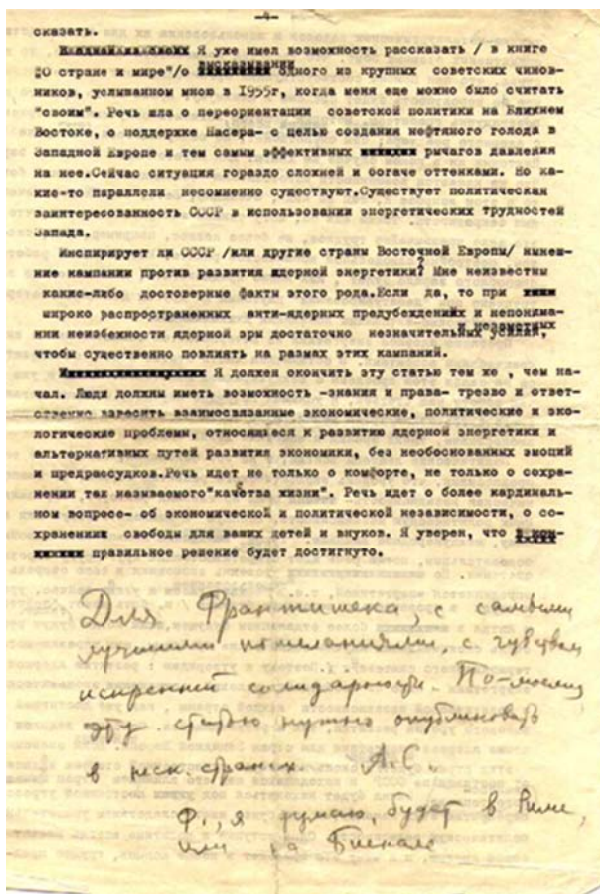
In 1976-78 I participated in several conferences and was also invited to many meetings and gatherings, organized by different environmental movements. I consistently advocated nuclear energy as one of the most natural and authentic energy which exists. The organizers were deeply disappointed: an East-

European dissident is defending nuclear energy? You must not be a proper dissident. A proper dissident, like Andrey Sakharov, would certainly have another opinion? What is his attitude towards nuclear energy?

I had to admit that I don't know Andrey Sakharov's attitude towards nuclear energy. But I took a chance and improvised: Andrey Sakharov is a genial physicist and as such he must support nuclear energy.

Doubts of my hosts were, however, not removed. I sent, therefore, my English paper to Andrey Sakharov and asked him, in an accompanying letter, to comment my paper and to express his view on nuclear energy. We exchanged, of course, our letters through a reliable „dissident“ postal service and the Soviet censors had no chance to confiscate our correspondence.

In December of 1977 I received from Andrey Sakharov two sheets of a yellowed paper covered on both sides with a typewriter text. It was an article. The title was: Nuclear Energy and the Freedom of the West. On the space left on the last sheet of paper Andrey Dmitrievich wrote with a pencil a short message:

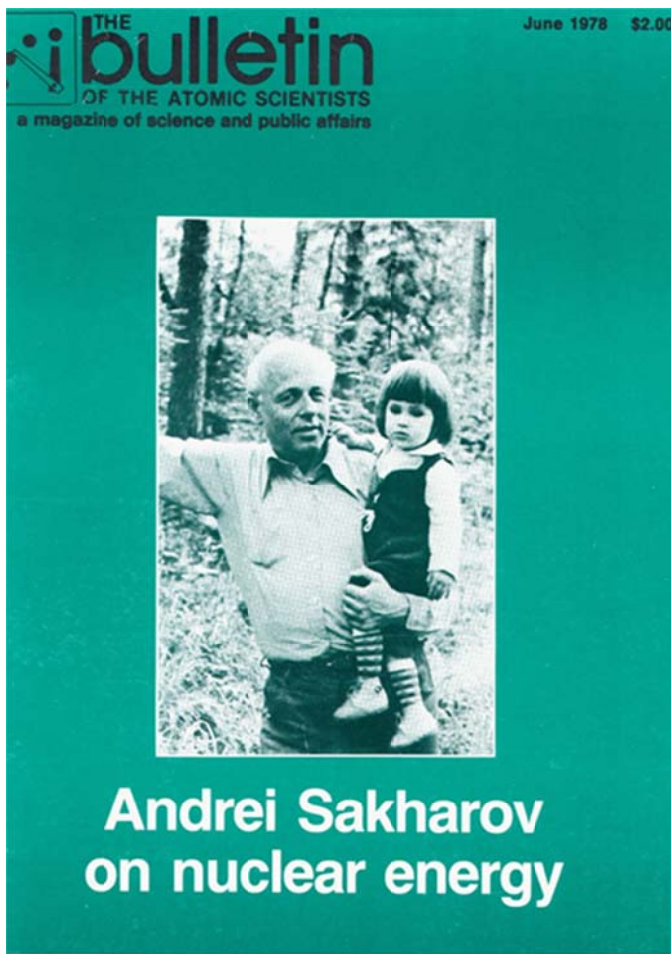


„For Frantisek ... with feelings of a sincere solidarity... I think that this paper should be published in several countries. A.S.“

I submitted Sakharov's paper to one of the largest German journals (der Spiegel) and to the known American journal (The Bulletin of the Atomic Scientists), founded in 1945 by Albert Einstein and Leo Szillard.

To my surprise and disappointment both journals refused to publish Sakharov's paper. The Editor-in-Chief of the Bulletin Professor Feld wrote me, that the Sakharov paper must be a fake – the paper could not reflect Andrej Sakharov's authentic views.

I had no choice but to send to both Editors-in-Chief the xerox copy of the last pages with Sakharov handwritten message to me. Der Spiegel reacted with an urgent cable accepting the paper, the Bulletin of the Atomic Scientists published the Sakharov's paper as a June 1978 Front Page Story.



USA and EU started to understand the connection between the Energy, freedom and independence almost a quarter of century later than Andrey Sakharov,

although his clear words were many times published in the West and known to both to politicians and to the public.

**Mr. Donald J. Johnston,  
Secretary General of OECD,  
Pamplona, Spain in April 2002:**

- It will require **policy leadership to bring energy to the top** of the policy agenda and to keep it there
- It will require **vision to anticipate problems** well ahead of time so that they can be addressed in an orderly manner
- It will require political courage to make difficult choices, notably for the **trade-offs between the welfare of the present versus future generations.**

In the meantime, due to the unpreparedness for discussing the energy issues the Swedish social-democratic party, lost for the first time for many years, the elections. The Swedish social-democratic leader Olof Palme (and former prime-minister), to whom I also sent my paper, wrote me, not as a Prime-minister, but as a party boss a kind letter that I should continue to publish my views on energy



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Dear Professor Janouch,

Thank you for your kind letter and your very illuminating article that I have read carefully. I definitely think that you should publish it and I hope that you will continue to take part in the energy debate that certainly will continue during the coming years.

With best regards  
Yours sincerely

Olof Palme

During the end of seventieth strange things happened in Europe. The Green pest of antinuclear madness seized not only the USA but even Europe. America exported to the rest of the world not only hamburgers Mac Donald and Kentucky Fried Chicken, accompanied by Coca Cola, but even a hysteric resistance against the nuclear energy.

Until now nobody properly investigated why the antinuke movement started to spread out avalanche-like in USA and from USA to Europe precisely in the second half of seventieth.

Allow me to formulate one hypothesis. At the end of sixtieth and in the first half of seventieth USA tried to save what France had lost in its former colony Indochina (Vietnam). But even the USA was unable to combat Vietnamese guerilla. The bloody US engagement in Vietnam was becoming in USA more and more unpopular. A mass movement against the Vietnam war was growing, hundreds of thousands, perhaps even millions of young Americans were involved in this citizens movement. Finally, due to the joint efforts of young American citizens and Vietnam guerilla, a political solution was achieved and the Vietnam war was finished. But, suddenly a large and well organized „army“

of young Americans women and men lost a „meaning“ of life and became somewhat „jobless“.

In the end of seventieth Jane Fonda produced a well done thriller „The Chinese syndrome“. From a scientific-technical point of view it was a sheer non-sense, but Jane Fonda made the movie sexy and attractive. And young Americans, instead of protesting against nuclear weapons – I just remind, that in early eighties the nuclear superpower stored in their arsenals around or even over 50.000 nuclear and thermonuclear warheads, each of them thousand or even many thousands more powerfull than the bomb, which destroyed the city of Hiroshima. But young people begun to protest not against this global danger, but against the undisputable benefit the nuclear energy provides for the humanity. It was so absurd, that I started to fight against this movement by lecturing about energy (lectures were called The Energy Primer) to educate and enlighten people and to provide them with at a least basic information on energy and its role it place in our life.

This was the time when it was a boom for nuclear energy in Sweden. The Swedish company ASEA –Atom (later ABB-Atom) not only produced advanced nuclear reactors but even fuel for them. At the end Sweden built up and operated 12 nuclear power reactors in four locations: Forsmark, Oskarshamn, Barsebäck, Ringshals. They contributed – and are contributing – around 45% of total Swedish electricity production

Under a pressure of two parties, the greens and the left party (communist) the Swedish Parliament (Riksdag) decided to announce in 1980 a referendum to decide whether Sweden should continue to use the nuclear power. In the 1980 referendum citizens were asked to choose between three alternatives (platforms), which were for a common „Svensson“ perhaps too complicated. Complicated was even the result of the referendum and our „wise“ Riksdag decided, that Sweden will after all completely abandon the use of nuclear energy but not immediately, but only from year 2010. The law was passed through the parliament only in 1982. But at that time they were still several power reactors under construction. Since in 1982 it was assumed, that the life time of a Swedish power reactor is 25 years (correspondingly was the return of investments calculated) and since the last power reactor was planned to be put into operation in 1985 it was clear for the pragmatic Swedish legislators, that all nuclear power plants could without any economic harm be shut down prior 2010 (1985+25=2010. „Solon“ legislators even incorporated in this law a special

paragraph (Law 1984:3.§6) that it in Sweden it is forbidden to perform research and construction studies which can lead to build up in Sweden new nuclear power plants. Among the intellectuals the law was wittily called in Swedish „tankesförbudlagen“, a „law forbidding to think“.

Sic transit gloria mundi! ("Thus passes the glory of the world".) In 1986 Sweden produced about 45% of its high electricity consumption in nuclear power plants. Two of Swedish power reactor (Barsebäck 1 and 2, about 600 MW(e) were shut down in 1999 and 2005. They were closed because of a political bargain, „Kuhandl“:

- 1) Social-democratic party needed a political support from the green party. The greens were ready to support social-democratic party only if the social-democrats would make some visible antinuclear gesture.
- 2) Barsebäck nuclear power reactors were visible from the Danish Copenhagen and caused a permanent tensions between the two otherwise very friendly „fraternal“ Nordic countries: „non-nuclear“ Danmark and „nuclear“ Sweden.

Even the very rational Swedes have their Kocourkov's. Since the power of the remaining 10 Swedish nuclear power reactors was not sufficient to provide a very high Swedish electricity consumption, most of the remaining 10 Swedish nuclear power reactors were allowed to increase the electricity production – today the nuclear power plant production is almost the same, as it was before the closing of two Barsebäck reactors.

Thanks to a demagogy of Greens and the antinuclear craziness initiated by them Sweden lost a lot: first of all the excellent Swedish nuclear industry, producing very advanced and safe boiling water reactors (BWR) and production of nuclear fuel elements. Even the development of very sophisticated and safe reactors (with advanced passive safety), i.e. reactors SECURE a PIUS was abandoned.

Antinuclear hysteria affected the whole society. At universities and technical universities the nuclear energy disciplines lost their perspective and became unattractive for young people.

The fact, that Sweden can't exist without the nuclear energy and that it would take perhaps many decades before the renewable would be able to cover the electricity provide by the Swedish nuclear power plants was silenced and belittled.. Suddenly, at the beginning of the third millennium, it became clear,



that Sweden does not have enough nuclear specialists. One was forced urgently to establish and to support financially the education of young nuclear specialists. One has to establish national centers of nuclear competences (at technical universities in Stockholm and Goteborg), to increase the education of students and specialists in the field of nuclear physics and nuclear energy.

The Czech Republic must learn a lesson from this negative and even tragic development in an otherwise very rational and pragmatic country as Sweden. We must not allow that the Greens, as they did in Sweden and in Germany, would draw in us into a dead end in energetics.

I have to tell you about my experiences with a Czech „politician“ Milan Horáček: I know him for about forty years. During these long years I was trying to explain him the basis of an energy primer, but for thirty years our discussions always ended with my teachers strict warning: Horáček, it is still very poor. Repeat the subject, go again through all the basic books and materials and try again once more!

But, instead of learning the energy primer Horáček was first elected to the German Bundestag, later even to the European Parliament. ... Ó tempora, ó mores!

But ultimately I am not so pessimistic. In 2006 the Swedish Riksdag removed silently the shameful § 6 on prohibition of nuclear research and in the spring of 2010 Sweden was suddenly allowed, under the pressure of reality, to continue to run the ten Swedish nuclear power plants beyond 2010 and even, wonder of wonders, to build even new nuclear power plants to replace the existing ones. The Czech Republic should take a proper lesson from the Swedish mistakes in the energy policy which this developed, industrial and rational country made during the last quarter of century.

The green demagogues are widespread not only in Sweden, but also in Germany and other countries, cost the mankind a lot of energy, money and time. And especially time is not much left.

I welcome with my whole heart the decision to start at the Westbohemian University in Pilsen the education of nuclear energy disciplines. It is certainly a step in a right direction!

And I would like to assure you, young students of nuclear technologies, that you will be facing an interesting and exciting life. I never regretted the decision I made 65 years ago, on August 6, 1945.

Thank you for your attention.

(September 2010)