

from such action by posing a high risk of detection". I ask why we should put our faith in a safeguards system which we are told by the Canadian government, or by the department the minister is in charge of, cannot prevent clandestine diversion of nuclear material to military purposes? This is a clear indication that the whole case the minister has built up in this matter is a house of cards that falls over immediately you look at his own documents.

In the same paper it goes on to state:

In the event of such unauthorized diversion of nuclear materials or facilities to proscribed purposes by a state, international sanctions may be applied to that state.

● (1800)

Let us look again at the dubious language "may be applied". Some of us have made a study of international sanctions and know very well that seldom in history have they been adequately applied.

**Mr. Deputy Speaker:** Order, please. If the hon. member requires only a few minutes, perhaps the House would allow him to complete his speech so that the Chair might recognize the hon. member for Wellington (Mr. Maine) after dinner. Is this agreed?

**Some hon. Members:** Agreed.

**Mr. Brewin:** The House will be pleased to know I am approaching the end of what I have to say. I said "approaching". I am not right at it. Again, on page 15 we find:

... the recipient member may be asked to return the materials and equipment made available to them.

I have forgotten my grammar, but I can say that I believe the phrase "may be" means remote and unlikely. That is precisely the situation.

Finally, page 17 refers to Canada's new policies requiring a binding assurance that Canada-supplied nuclear material and technology will not be used to produce a nuclear explosion. A state cannot develop a nuclear explosion devised for peaceful purposes without acquiring a capability to produce nuclear weapons. The minister made that very clear. I ask, what is left of the binding assurance if it is given by a militaristic undemocratic, unstable state? What is the deduction to be made from this material? It is surely that at least a temporary embargo should be put on the export of all nuclear material as suggested by Dr. Lilienthal.

We understand as well as the minister the dilemma involved. We have seen the problems in respect of technological development and the transfer of technological resources, but we urge that the common sense answer, until we have greater assurance than we have today about safeguards, is that we adopt Dr. Lilienthal's advice. I urge the government to have a full inquiry into this and other fields in the production of nuclear energy so that this generation and this country shall not have laid upon them the guilt of enhancing the prospect of world-wide destruction.

**Mr. Deputy Speaker:** It being after six o'clock I do now leave the chair until eight o'clock tonight.

At 6.06 p.m. the House took recess.

### Nuclear Proliferation

#### AFTER RECESS

The House resumed at 8 p.m.

**Mr. Frank Maine (Wellington):** Mr. Speaker, the motion before the House today reads:

That this House condemns the government for increasing the threat posed to mankind by the proliferation of nuclear weapons, and in particular by its present negotiations to resume nuclear assistance to India.

This motion has two parts to it and I would like to deal with each part separately. First of all I wish to deal with the part which refers to increasing the threat posed to mankind by the proliferation of nuclear weapons.

I should like to differentiate between nuclear weapons and power reactors. They are not the same, they are not interchangeable. Let us go into that a little further. There are technical reasons why the CANDU does not contribute to the proliferation of nuclear weapons. The CANDU is a system that uses natural uranium which is made up of .71 per cent of the uranium isotope U-235, the balance being the uranium isotope U-238. This is very important because it is a unique system in the world. It is different from the U.S. system which uses enriched uranium, and it is also very different from the environmental aspect and the hazard it presents. When one is talking about the importance of the CANDU system one should be aware of the fact that one cannot generalize about power reactors as do many people, especially members of the opposition.

Why is it important that we use natural uranium with a high content of uranium 238? Uranium 238 under irradiation in a power reactor, where it gets 6,000 megawatt-days per tonne irradiation converts a lot of that uranium 238 into plutonium 239 and plutonium 240. These two isotopes of plutonium are very different. The importance of plutonium 239 is that it is used primarily to make the bomb, but not plutonium 240. As a matter of fact it is plutonium 240 from which they do not want to make material that can be made into a bomb. The longer you leave fuel in the reactor, the more plutonium 240 you make.

Therefore if one wants to make fissionable material for a bomb one would not leave it in the nuclear reactor for 6,000 megawatt days per tonne, one would irradiate it for 600 megawatt days per tonne, which is a factor of one tenth. This is quite a different situation, from a practical and economical point of view, when you are considering the making of electricity. The CANDU system is a total design. It is designed to be fed the fuel continuously, and the fuel feeding of the reactor is such that the uranium will be irradiated to the 6,000 megawatt days per tonne level. If you change it by a factor of ten, either you have to redesign your system completely—and since Canada has designed the CANDU system it would mean a foreign buyer having to ask us to redesign the system—or else you will have to shut the system down to take out the fuel.

The CANDU system is designed to make electricity. If you happen to shut the electricity down more than you use it, the system will not be generating electricity. For these very practical reasons, if you want to generate electricity you use the CANDU system, but if you want to make bombs you do not use the CANDU system.