Is Not the Universality of Implementation of IAEA Rules as Difficult to Maintain as It Was to Obtain?

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INTRODUCTION

It is quite a common place to say that the IAEA recommendations on the safe transport of radioactive materials remarkably succeeded in their task to uniformize the applicable rules, and by that way to make it possible to carry radioactive material nationally and internationally.

That is true, at the present time as well from the geographical and political standpoint, as from the modal standpoint, that means, whichever is the country, the air or maritime space, or the transport mode.

The transcription of IAEA rules in the regulations or recommendations of modal international organizations, and in the national rules allowed to get to this very favorable situation.

It is however another common place to say that the problems set up by this carriage evolve with the technical progress and nuclear knowledge as well as with the evolution and development of their implementation, and, therefore, the applicable rules must be adapted to the evolution and evolve themselves.

It seemed therefore interesting to us to try to see under what conditions, the harmony obtained at one given date could be maintained and kept with the passing time, through the necessary adaptations in the field of the making up of the general rules, and in the practical applications.

I - THE GENERAL RULES IN FRONT OF THE EVOLUTION OF NUCLEAR TECHNIQUES AND INDUSTRY AND OF THE PROGRESS IN SAFETY ASSESSMENT.

The evolution of actual situations found expression by amendments proposed and often accepted by consensus in IAEA Recommendations, and periodically issued.

However the incorporation of these amendments of which simple issuance already requests time, must be made as simultaneously as possible, in modal international or regional rules, and between the latter and national rules as well.

Every gap in these transcriptions entails difficulties, of which the resolution requests considerable efforts and causes lost time and money.

The passage, for instance, from Recommendations of 1967, to those of 1973, gave some examples, of which all the following are not, at the present time, rubbed out.

This coming together, so wishable it could be, is unfortunately not easy to assure, even already at the level of international regulations, as far as different transport modes are concerned. It is obviously still more difficult in national rules, where many other factors, dealing with the state's sovereignty, or possible consulting national or local procedures, may intervene.

The wishable alignment in texts and dates must be the result of an effort of international organization and national administrations.

But has the IAEA itself a part to play in this effort? Its part of adapting the recommendations to the actual situation in transport and the progress of technical and scientific knowledge is essential.

But, if it is crucial for IAEA, not to be passed over by situations of facts, it is not less important for the experts to be conscious of the practical involvements of the amendments they promote. And also of the difficulties entailed by the cascade of regulatory consequences of these evolutions when the flow is too rapid at the source.

These modifications must indeed have repercussions in a space which presents many dimensions: geographical, modal, political, and, we have seen it, temporal, but also of discontinuous structure, even in time, as far as the adjustments are to be made at predetermined rhythms, not always equal, and uneasily changeable.

Moreover, the IAEA deals with all transport modes; that does not mean that the rules are absolutely the same for all the modes. However, as far as the packagings are concerned, they stay the same as far as possible. Differences, from this standpoint are until now, relatively minor: for instance, differential pressure criteria in air transport.

It could be asked, in this connection, what could be the effect of a greater difference between the air criteria, for example, and those of other modes. The universality of principle can be saved by the taking in account of the same proportion of accidents (from severity viewpoint) as in a land transport for instance, somewhat erasing the difference between their absolute probabilities.

A very noticeable difference could be, nevertheless, introduced in the definition of the packagings. We will come back on this point, and we will see that it is less in the writing of the regulations than in their implementation that are encountered the main difficulties due to the differences introduced and by their unavoidable evolution in time.

II - THE EFFECT OF DISCONTINUITIES IN IMPLEMENTATION OF RULES.

The packagings, and specially the approved packagings which are the main supports of safety, have obviously a material life, and therefore a life duration.

If the mode of operating can easily change, from one day to the other, from one country to the other, from one mode of transport to the other, it is not the same for packagings. This is, precisely, one of the main reasons of the necessity of the universality of regulations.

Some differences can be covered by reversible or irreversible modification: calibration of valves in maritime transport, adding of protecting shells for example. Some others entail a quite new design.

In the case e.g. of very important packaging designed for transport of irradiated fuels representing a large economical investment, and of which the solidity has for consequence a long duration of life it would be absurd and anyway difficult in practice to retire them from use for more or less theoretical reasons and in any case without any severe and proved reason affecting their actual safety.

In a similar way what can be said about packagings used on every mode for long years and which could be forbidden, e.g., on air mode, when nothing has changed, except that the experts moved from a less or more conscious probabilistic approach of this mode, to an approach more similar to the one used until now in land transport, that is to say essentially deterministic?

We will be in a situation, perhaps unavoidable, which is perhaps the price for progress, where, at the same time a transitional period will be economically and materially indispensable, and very difficult to admit from the safety standpoint, at least in principle.

The principle of grand father clause, very pragmatic in its implementation, solves only apparently all the problems. It makes use indeed of the multilateral approval, already utilized for type B (M) and Fissile packages. However in these two cases multilateral approval stays upon a fundamental consensus, in a frame of applicable rules, it is in fact a verification by the involved Competent Authorities of the compliance to these rules. It is not the case for grand fathers.

If an amendment of the Regulations, significant for a packaging, is issued during the lifetime of the latter, its utilization will be suspended to multilateral agreements, very near from special arrangements. We are, in this case, very near from a pure contractual situation, outside any compulsory regulation, at least on amended points.

This situation could be unpleasant especially in two cases:

> the case of very complex, solid and onerous packagings, the case of packagings diffused in many exemplars, all over the world.

In practice, if not in principle, this comes back to actually apply the new requirements only to the new constructions, although without legal basis, except if the law allowed it.

It is, besides, what some people propose to legalize, as it is the case in some fields other than nuclear transport, and what was implicitly made when no expiration date was given to design approval certificates.

It is in that context, that the Recommendations of 1985 require to accompany the use of the grand father clause by a registration of the material exemplars subject to this clause, in addition to the new ones.

This registration and control, should be, to our opinion, organized by the Competent Authority of the country of the owner of the packaging. This seems to be the only possible solution for the packagings overpassed by the evolution of the Regulations, as for the others.

The regulations do not specify, indeed, the Competent Authority who is in charge of this registration: The C.A. of the Country of design, manufacture, use, ownership...?

Will this situation be completely satisfactory?

It seems to be the case when the amendments to the regulations are either shallow, or leading to possible modifications, or additions, to the packagings.

As we already saw, it is very much less the case when the amendments are asking for fundamentally new designs.

In that case, the use of old ones, even when it is traditional, will be submitted and limited to very topical special arrangements.

CONCLUSION

We have seen that one of the prices to pay for the conjunction of universality of packagings and necessity of evolution is that at one given moment, and more and more as the time passes, many exiting materials are no longer totally in line with the rules in force.

Is that situation actually jeopardizing the safety?

As a matter of fact, it was rarely proved, until now, that a packaging complying with, e.g., 1967 IAEA rules was not safe, when, of course, it has been maintained in good order. Some actual cases, which, as we saw in other papers, are very instructive, can often be interpreted less as failures of the regulations than as failure of their implementation.

What about the future?

I - For the existing material packagings.

The "grand-fathers", i.e. the packagings in line with the previous rules and not, on at least one point, with the new ones, may continue their active life, under the condition of multilateral approval of their design, and, that is our proposal, under the control of their individual state and maintenance by the Competent Authority of their owner. This last control will be essentially unilateral, but with some evidence of it given to everybody, as for example a marking on the packaging, and even some visible registration in the country of the owner.

This solution will be satisfactory as far as all the involved Competent Authorities stay in agreement on the design approval.

This "continued" agreement is, to my own opinion, submitted to certain conditions on the evolution of the rules themselves.

II - For the evolution of the requirements.

On the one hand, in order to avoid an enlarged gap between regulations and facts, it is certainly crucial not to be overpassed by evolutions coming from other sources, but it is certainly as crucial to make sure that these "foreign" sources of amendments are really pertinent and grounded more on actual safety than on other factors.

On the other hand it is necessary to evolve at a pace that, first, positive regulations, and, second, reality, can follow. And, to avoid too theoretical amendments, not inspired by the actual discovery of a lack in safety, as it was strongly underlined by the International Maritime Organization, questioning, to tell the truth, the U.N. Recommendations.

Moreover its seems crucial also to keep the principle of requirement of results, avoiding constraining determination of means, much more sensitive to location, to time - or fashion - and to specific interests as well.

And as far as possible, fundamentally new requirements are to be inspired more by new actual situations as accidents showing unviewed failures, or birth of a new traffic, than by new theories or extrapolations.

That is in order to avoid as far as possible successive contradictory solutions to the same problem, which are always unpleasant, and sometimes very difficult to cope with in our case.

That seems to us the condition for keeping the essential time dimension to the wonderful space of agreement gained by transport of radioactive material.

Index

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