

Regulations Related to the Transport of Radioactive Material in Brazil

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ABSTRACT

The transport of radioactive material has raised great interest on the part of national regulatory authorities, thus resulting in a safety measures improvement for all kinds of transportation. The transport of radioactive material is regulated by safety criteria much more than those applied to conventional hazardous material. All radioactive material transportation run in Brazilian territory must be in accordance with what is established by the CNEN-NE 5.01 – Transport of Radioactive Material. There are other national and international regulations for radioactive material transportation, which have to be accomplished with and adopted during the operation of radioactive material transportation. The aim of this paper is to verify the criteria set up in the existing regulations and propose a consensus for all the intervening organizations in the regulation process for land, air or sea transportation. This kind of transportation can not depend on the efforts of only one person, a group of workers or even any governmental body, but must be instead a shared responsibility among workers, transport firms and all regulative transportation organizations.

Key Words: safe transport, radioactive material , regulations.

I. INTRODUCTION

The Radioactive Material transport has raised great interest on the part of national regulatory authorities, both national and international, thus resulting in the safety measures improvements for all kinds of its transport. As a consequence of the public fear for nuclear energy the radioactive material transport has to be based on safety criteria much more restrictive than those applied to the other conventional hazardous materials.

Internationally, the International Atomic Energy Agency, IAEA, official body of the United Nations Organization, UNO, has issued a series of recommendations published in the “Safety Series

Documents”, among which we highlight number 6⁽¹⁾. The International Air Transportation Association, IATA⁽²⁾, has its recommendations based on those by IAEA, but some specific recommendations to the kind of transport they apply to.

Besides the international recommendations, there are also some regional settled by countries with interest in keeping common recommendations aiming at similar technical criteria for the safe transport of radioactive materials among them. In the case of Brazil, these regional recommendations were published by the Mercosul members⁽³⁾.

Finally, there are several national acts, procedures and norms, issued by different official bodies and national associations, presented below:

- a) Science and Technology Ministry, National Nuclear Energy Commission⁽⁴⁾;
- b) Transport Ministry, act⁽⁵⁾;
- c) Aeronautics Ministry, Civil Aviation Department, procedure⁽⁶⁾;
- d) Brazilian Association of Technical Norms, recommendations⁽⁷⁾;
- e) Environment Ministry, Brazilian Institute of Environment and Renewable Resources, procedure⁽⁸⁾. Due to several issues raised by its application, the reference term has been under revision.

Though the competence of each of the mentioned organizations is clearly defined, as to know:

- I) The Aeronautics Ministry is in charge of nationalizing the criteria adopted by IATA for the radioactive material transportation by air;
- II) The National Commission of Nuclear Energy is in charge of regulating the necessary and sufficient requirements for a safe air, land and sea transportation;
- III) The Brazilian Association of Technical Norms, a governmental body of public utility, recognized by the government, is in charge of regulating a pattern of the CNEN requirements, and last but not least
- IV) The Transport Ministry, is in charge of supervising the transportation and applying the penalties in case of non-conformity with all documents..

Owing to the amount of documents mentioned above, what seems to be clear is in fact misleading, mainly in the overlapping of different competences, when the official organisms interfere among one another.

As a consequence, contradictory criteria arise making the comprehension and accomplishment of the legislation difficult and, even worse without improvement in the safety conditions, as it will be shown in this work.

II .MAIN CONTROVERSIES

The main controversies in the legislation mentioned above will be shown below.

Placards and Labels

The national^(4,5,6,7,8,9,10,11,12), regional⁽³⁾ and international^(1,2) legislations, establish that all

vehicles have to carry safety placards and labels during the radioactive material transportation. According to:

- a) The CNEN Norm⁽⁴⁾ and the Safety Series no.6, the placards dimensions are:
 Width: 300 mm
 Height: 120 mm
 Frame: 10 mm
 And must be placed in the four sides of the vehicles transporting the radioactive material when under exclusive use or gross mass.
- b) The Transport Ministry^(5,12), the placards dimensions are:
 Width: 350 mm
 Height: 250 mm
 Frame: 10 mm
 And must be placed in the three sides of the vehicles transporting the radioactive material, except for the front side.
- c) The Mercosul⁽³⁾, the placard dimensions are:
 Width: 350 mm
 Height: 140 mm
 Frame: 10 mm
 And must be placed in the two opposite sides of the vehicle transporting the radioactive material highlighting that in the transportation of solid or fractioned radioactive material the use of a safety placard is not necessary.

Acompanying Documentation for Radioactive Material

- a) According to the Transport Ministry⁽⁵⁾, the official document that accompanies the radioactive materials, must have in its body all the data describing the material, such as: its kind and risk, besides the signature of the person responsible for its transport;
- b) According to the CNEN⁽⁴⁾, the Radioactive Material Dispatcher Declaration, document that accompanies the product to be transported must have all its data, such as its risk and kind, besides the compromise of transporting it with security and according to the country present legislation;
- c) The Transport Ministry⁽⁵⁾, establishes the obligation of the Transport Envelope Use, according to the ABNT⁽⁹⁾ norm, what is not required by the Transport Ministry procedure – railway transportation⁽¹¹⁾.

III.SUGESTIONS

Concerning the regional recommendations, we suggest they should be based on the international

recommendations, adequating them to facilitate the safe transport among the interested countries, considering their particularities, resulting in the necessity of a consensus. The group in charge of these recommendations, besides considering more simplicity in the transportation must, also, consider the upset caused when the radioactive material is transported to a neighboring country not member of any Regional Agreement, but that has ratified the International Recommendations.

This suggestion is also applied to the National Legislation, when compared to Regional and International Recommendations.

Concerning the national legislation we suggest be limited to procedures, regulations and norms, avoiding acts and laws, since these are difficult to be altered and demand federal discussion. The procedures, regulations and norms present mechanisms easy of being altered and, as technology advances quickly, they can be maintained scientifically updated in a higher percentage than acts and laws.

On the other hand, to avoid this competence conflict among the governmental organisms, we suggest the regulations should be settled by a committee representing the interested Ministries and National Associations, entitled to issue a single document, meeting all Organisms requirements, without criteria overlapping. Furthermore, this committee should give special attention to those factors involved in the safe transport of radioactive material. For instance, as to the recommendation criteria for labels and placards sizes, we should aim at its finality of become easy the radioactive material visualisation at distance and evaluate its hazard. The regulations approved by this committee should be accepted by all involved Organisms and published by a governmental body endorsed by the others.

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