

THE CONCEPT OF LAUNCHING STATE IN THE NPS PRINCIPLES

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ABSTRACT

The Principles Relevant to the Use of Nuclear Power Sources in Outer Space propose a wider concept of launching States since they provide different definitions of the term “launching State” contained in the Principle 2. This is because of the potentially insufficient *status* of the traditional launching State for the purposes of the Principles, which require that the launching State be able to exercise jurisdiction and control over the on board NPS. Furthermore, the Principles retain the classical notion of launching States, as stated in the Liability and Registration Convention, for the purposes of liability and compensation. This legal framework presents peculiarities of some relevance, especially regarding problem of transfer of jurisdiction and control over the NPS between launching States as could be deduced from the formulation of the Principle 2.

The Legal Regime of Nuclear Power Sources: Applicability of Rules of Different Branches of Law

The object of the presentation will be the legal regime concerning the use of Nuclear Power Sources (NPS) in outer space analysed from the point of view of the launching state. That is to say to relate the discipline dealing with NPS – with particular reference to the UN Resolution 47/68 adopted by the General Assembly on 14 December 1992 concerning Principles relevant to the Use of NPS in Outer Space¹ with the provisions of the launching State

stated by the Liability and Registration Conventions.

The legal regime of NPS in outer space is characterised by the applicability of a complex interaction of norms pertaining not only to space law but also to nuclear law which includes international norms of conventional nature and numerous sources of soft law such as the procedures of IAEA and of the International Commission for the Radiological Protection (ICPR) for the development of technical standards, recommendations and other guide-lines². The same Principles concerning the use of NPS which are directly applicable as *lex specialis* fall in the sphere of soft law and, therefore, among the normative sources non juridically binding for States. The Report of the Working Group of the Legal Subcommittee charged with the “Review of international documents and national processes potentially relevant to the peaceful uses of NPS in outer space”³ classifies a series of documents potentially relevant for the reconstruction of the legal regime governing the use of NPS in the outer space in different sets of norms, including, firstly, the relevant norms of the international conventions, particularly the IAEA Conventions, the recommendations of the International Commission for Radiological Protection, the IAEA relevant publications, the reports of the UN Scientific Committee on the Effects of Atomic Radiation (UNSCEAR) and various others technical documents issued by IMO.

It should also be considered that, in the organisation of these kind of mission

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equipped with NPS, the scientific community apply rules of Planetary Protection laid down by COSPAR, aimed at the protection of the space environment. Furthermore, the relevance of norms of national and international environmental law has been well established in the legal literature⁴. These provisions can be either Earth oriented or Space oriented. Even nuclear law fulfils these functions where it deals with protection of the habitat and of the human beings exposed to hazardous radiation.

It is in this context that issues concerning the launching States are included. The concept of launching State has given rise to numerous criticisms in their application, causing, as it is known, the intervention of the Working Group in the Legal Subcommittee, in order to clarify this concept. But Principles governing NPS only partially accept the traditional concept of launching State.

The double meaning of the term “launching State” in Res. 47/68 on the NPS

It is not common that in the same document we find a double meaning of the same term. But this is exactly what happened with the term ‘launching State’ in Resolution 47/68 concerning Principles relevant to the Use of NPS in Outer Space, in which Principle 2 determines the meaning of ‘launching State’ or ‘State launching’ on the bases of the aims of the States’s actions.

Section 1 of Principle 2 states: *“For the purpose of these Principles, the terms of ‘launching State’ and ‘State launching’ mean the State which exercises jurisdiction and control over a space object with nuclear power sources on board at given point in time relevant to the principle concerned”*.

The following paragraph, however, makes reference to the usual notion of ‘launching State’ as laid down in Article I of the

Liability Convention and in Article I of the Registration Convention, applicable only to the interpretation of Principle 9 and therefore exclusively to questions of liability and compensation. Following this reasoning, it is possible to say that the definition in the Section 1 of Principle 2, is aimed at interpreting the whole set of Principles, with the exception of Principle 9, for which the usual notion of ‘launching State’ as expressed in the Liability Convention is applicable.

The reason for this dual use of the expression ‘launching State’ may be found in the fact that there might not necessarily be coincidence between the launching State according to the traditional definition and the launching State able to exercise jurisdiction and control over the nuclear device on board. In fact, the obligations as contained in the Principles can be reasonably fulfilled only by a State which has the capacity to exercise jurisdiction and control over the NPS.

Principle 3, e.g., states the obligation of the launching State to conform to the general objectives on safety measures; Principle 4 states that the safety assessment of the NPS, which is a highly technically complex procedure, can only be carried out by a State with wide knowledge of the nuclear device and of all phases concerning design, construction, manufacturing, operation and testing of the system. Again, Principle 5 attributes to the launching State the obligation of notification of any eventual malfunction of the NPS or of uncontrolled re-entry with the aim of obtaining technical information from the launching State in order to take the necessary measures⁵.

The definition contained in Section 1 of Principle 2, furthermore establishes a temporal connection between a given moment in which obligations are fulfilled (*at given point in time*) and the prescribed activity to be carried out by the State

involved (*relevant to the principle concerned*).

This definition, in fact, makes it possible that the State which exercises jurisdiction and control over the NPS might change in outer space. In this regard, I quote an example already hypothesised in the literature of the case of the launch of a US shuttle with an NPS on board which delivers the nuclear system to the Italian element of the Space Station, leaving the device at the disposition of an Italian astronaut. This situation necessarily implies the transfer of jurisdiction and control over the nuclear power source⁶.

For the purposes of the Principles, it is important to identify the launching State which can materially fulfil the obligations as mentioned therein. This is the reason for which, in this context, the *status* of launching State as traditionally utilised is insufficient. However, this situation does not exclude, obviously, that there may be coincidence between the launching State described in Section 1 and that of Section 2; neither is it said that this situation will necessarily arise.

If the double meaning of the concept of launching State is a necessity for the sake of the Principles on NPS, the roots of a similar approach can be traced in nuclear law, where the distinction is known between the State possessing nuclear weapons on his territory and the State having jurisdiction and control over them, as in the case of the NATO Nuclear Sharing Arrangements⁷.

Concerning space law, Principle 2 is based on the Article VIII of OST, according to which a State on whose registry an object launched into outer space is carried, retains jurisdiction and control over the object in outer space or on a celestial body⁸. This provision creates a link between the concepts of jurisdiction and control and that of registration, since registration is a prerequisite for jurisdiction and control.

For the purposes of Article VIII of the OST, the case of NPS could constitute an exception according to the norms of registration, from which jurisdiction and control over the object arise for the State of registry while Section 1 of Principle 2, determines the attributions of such functions on the basis of the ability of a launching State to exercise them, thus creating a kind of 'functional jurisdiction'.

Through the double meaning of the concept of 'launching State' and the consequent distinction in the attribution of jurisdiction and control, the provision creates a sort of a 'concurrent jurisdiction' over the same space object, in the sense that one refers to the whole object, and the other limits itself to the device on board, which is part of the same object.

It is now important to verify to what extent there exists effective correspondence between the registration of the object and jurisdiction and control and what are their meanings under legal doctrine.

Registration, jurisdiction and control

Article VIII of the OST creates a perfect correspondence between the State of registry of the spacecraft and jurisdiction and control over it. However this provision has been subject to some criticism in legal doctrine both in itself and in its implications. For example, it has been noted that the article does not exclude *expressis verbis* that non-registered States cannot have jurisdiction and control⁹ or that the same provision does not specify the consequences of non-registration¹⁰.

Furthermore, while the same provision entails jurisdiction and control over spacecraft as a consequence of registration, it doesn't define the notion of jurisdiction and control, whose definitions cannot be found even in other UN general Treaties.

For these reasons, given the central role of the concepts of jurisdiction and control laid

down in the Principles and lacking specific Treaty provisions on them, which might throw light on the problem, it seems useful to refer to some definitions provided by legal literature.

The concepts of jurisdiction and control are frequently used as synonyms, even if some authors deny the existence of a real distinction between the conceptual and functional aspects.

In Public International Law the concept of jurisdiction finds its origin in the notion of territory, within which the State exercises its authority over people and things¹¹. Jurisdiction constitutes one of the attributes of State sovereignty but in the case of the exercise of sovereignty over things or persons beyond national borders, we make reference to the concept of jurisdiction rather than sovereignty.

Jurisdiction is based on the double capacity of the State to create and enforce legal norms, that is to say, prescriptive jurisdiction (*jurisfaction*) which consists in the right to make laws and in the right to guarantee the implementation of law (*jurisdiction*).¹²

Furthermore, international law distinguishes three different kinds of jurisdiction, namely territorial, quasi-territorial and personal¹³. Through registration, the territorial sovereignty can extend itself over the spacecraft in the outer space, not in absolute terms but on quasi-territorial basis. Article VIII establishes a quasi-territorial jurisdiction on the spacecraft¹⁴.

As regards the definition of the term control, it is frequently used as an aspect of jurisdiction, a kind of *genus* of jurisdiction itself¹⁵, or as a consequence¹⁶. Control, however concerns the monitoring of technical conditions of the space object. This definition should not be interpreted only in the sense of passive observation but also as an obligation of the State of registry for the active guidance of the space object.

Some authors of the Soviet school point out that article VIII of the OST would imply a notion of control consisting in special activities for the State of registry aimed at monitoring the technical conditions of the space object during the launch, placing it in orbit and its functioning during landing.

This concept of control makes reference again to the art. VIII, that, in turn, constitutes the base of the Registration Convention and this provision has to be considered in relation with article II (2) of the Registration Convention¹⁷, according to "*where there are two or more launching States in respect of any such space object, they shall jointly determine which of them shall register the object in accordance with paragraph 1 of this article, bearing in mind the provisions of article VIII of the OST and without prejudice to appropriate agreements concluded or to be concluded among the launching States on jurisdiction and control over the space object*". For our purposes, the second part of this Article is more relevant because it can create a disconnection between the launching State which registers the object and the State which assumes jurisdiction and control through the appropriate agreements. Through such accords, launching States can attribute jurisdiction and control to a State other than that of registry, even if, as has been noted by Gorove, "*it is not quite clear just how appropriate agreements would modify the jurisdiction and control granted to the State of registry*"¹⁸. This kind of agreements in fact have been rejected in maritime law.

Furthermore, it has to be highlighted that the formulation of the Article concerned, dealing with "*agreements...to be concluded*" seems to be perfectly applicable in the case of transfer of jurisdiction and control over a NPS device in outer space.

Finally, as such agreements are not subject to publication nor to notification to third

parties, they could make difficult for the latter the identification of the State which exercises jurisdiction and control and the applicable law on board. Regarding this matter, Cheng wondered if following this provision “*in the light of Article VIII of the 1967 Space Treaty, once an object has been registered, States have any discretion to alter the link between registration and jurisdiction*”¹⁹. In the case of such agreements, in the lacking of the criterion of registration, it could be hard to found a link between the nuclear device and the State exercising jurisdiction and control over it²⁰. The Principles on NPS, in the attribution of jurisdiction and control over the NPS to a simply launching State and not to the State of registry utilises a criterion of substance over form. It is evident that the ability of the launching State to exercise jurisdiction and control over the NPS determines the attribution of these competencies. Taking into account the criterion of effectiveness, which is well established in international law, the Principles provide a wider concept of a launching State, able to exercise jurisdiction and control over the nuclear device, independently from registration. And such a situation can happen in compliance with the space Treaty, in particular with the Registration Convention.

In this context, by virtue of the functional criterion adopted in the Declaration on Principles on NPS, the reference in Principle 9 to the traditional concept of a launching State being liable for the whole object assumes coherence with the rules of registration, in that it leaves liability to the State of registry, which follows than the formal criterion.

In the Principles governing NPS, the conceptual division of the two figures of launching States interrupts only a theoretical linearity of the relationship *launching State/registration/liability*, making it impossible to establish a connection

between jurisdiction and control over NPS on the part of a determined launching State and the attribution of liability.

Conclusions

At this point, it is possible to highlight some elements of particular relevance:

1. First of all, the Principles on NPS, through the dual use of the term ‘launching State’ provide a wider concept of launching State than that generally used. The definition of ‘launching State’ able to exercise jurisdiction and control over NPS does not substitute the traditional concept but is added to it.
2. Another characteristic of the Principles with respect to the launching State governing NPS is that which foresees eventual transfer of jurisdiction and control from one State to another. In fact, the definition refers to a temporal criterion (*at a given point in time*) in relation to a given Principle (*relevant to the Principle concerned*). In this case, however, it should be obvious that we do not refer to a transfer of ownership of the space object but only to a transfer of jurisdiction and control over the NPS between launching States.
3. The definition of two different figures referring to the same term: ‘launching State’ should not leave doubt about the fact that jurisdiction and control might be attributed only to a launching States.
4. In addition to the requirement of the *status* of launching State, with the aim of attributing jurisdiction and control over the on board NPS, the Principles provide that the launching State has the capacity to exercise such functions over the nuclear device without the transfer of

jurisdiction and control implying registration. Since the attribution of jurisdiction and control over the NPS to a launching State is made using a substantive criterion (the capacity of the launching State to materially exercise those functions) and in absence of specific references to Article VIII of the OST and to the Registration Convention, the Principle does not require registration, even in the case of transfer of the mentioned competencies.

5. In fact, the hypothesis of registration would imply liability for the State of registry. The transfer of competencies concerning jurisdiction and control to a launching State having the technical capacity of exercising them might be considered as a *de facto* attribution.
6. From this framework however, the Principles do not foresee any further liability for the launching State having jurisdiction and control over the nuclear system, since that approach is in compliance with the rules of liability established in space law. Nevertheless, we cannot underestimate the situation where a launching State exercises some competencies of certain importance on a ultra-hazardous system, without assuming the correspondent liability, except for the liability arising from the *status* of being a launching State.
7. Finally, it may be said that the Principles do not provide any indication in order to clarify the relationship between the space object and the nuclear power sources on board. On one hand they seems to consider the nuclear device as an autonomous element with respect to the whole object (in fact the NPS and

the object could have two different launching States exercising jurisdiction and control over them) and on the other hand, the nuclear system is not sufficiently autonomous to imply a separate registration.

In conclusion, it should not be forgotten that some of the characteristics of this Declaration derives from the ultra-hazardous nature of the use of nuclear energy whose risks cannot be underestimated.

1 On the background and negotiations of the UN Principles on NPS, see, in particular: FAUTEUX, *Sources d'énergie nucléaire dans l'espace: bilan réglementaire et incertitude américaine* in *AASL* (1991), 267-305; KOPAL, *The Use of Nuclear Power Sources in Outer Space. A New Set of UN Principles?*, *IISL Proceedings*, 1991, 124-131; LODICO, *Developing Legal Principles for the Safe Use of NPS in Outer Space*, *IISL Proceedings*, 1991, 132-138; BIANCHI, *Il regime internazionale delle salvaguardie relative all'uso dell'energia nucleare nelle missioni spaziali* in FRANCONI, POCAR, *Il regime internazionale dello spazio*, Milano, 1993, 113-167; BENKO, GRUBER, SCHROGL, *The UN Committee on the Peaceful Uses of Outer Space: Adoption of Principles Relevant to the Use of Nuclear Power Sources in Outer Space and Other Recent Developments* in *ZLW* (42,1), 1993, 35-49; BENKO, GEBHARD, *The Use of Nuclear Power Sources in Outer Space* in BENKO, SCHROGL *International Space Law in the Making*, Gif sur Yvette, 1993, 19-71; CHRISTOL, *Nuclear Power Sources (NPS) for Space Objects: A New Challenge for International Law*, *IISL Proceedings*, 1993, 244-254; COCCA, *Are the Principles on the Use of NPS a Progress in Space Law?*, *IISL Proceedings*, 1993, 255-262; HOSKAVA, *The Notification Principle in the 1992 NPS Resolution*, *IISL Proceedings*, 1993, 304-311; JASENTULIJANA, *An Assessment of the UN Negotiations on the Use of Nuclear Power Sources in Outer Space*, *IISL Proceedings*, 1993, 312-321; TEREKHOV, *Review and Revision of the Principles*

Relevant to the Use of NPS in Outer Space, IISL Proceedings, 1993, 336-348.

² See e.g. TEREKHOV, *The 1986 IAEA Conventions on Nuclear Accidents and the Considerations of the Use of NPS in the Legal Sub-Committee of Copuos, IISL Proceedings, 1987, 403-410*; COURTEIX, *The Legal Regime of Nuclear Power Satellite: A Problem at The Cross-Road of Nuclear Law and Space Law, IISL Proceedings, 1991, 117-123.*

³ "A Review of International Documents and National Processes Potentially Relevant to the Peaceful Uses of Nuclear Power Sources in Outer Space", UN Doc.. A/AC.105/781, 12 March 2002.

⁴ See, among others: ANASTASSOV, *The Use of NPS of Energy in Outer Space and Certain Ecological Issues, IISL Proceedings, 1988, 208-211*; BOYLE, *Nuclear Energy and International Law: An Environmental Perspective, BYIL, 1989, 257-313*; ABEYRATNE, *The Use of NPS in Outer Space and Its Effect on Environmental Protection, 24, JSL, 17, 1997, 17-28.*

⁵ CHRISTOL, *NPS for Space Objects, cit., 248*; BENKO, GRUBER, SCHROGL, *The UN Committee on the Peaceful Uses of Outer Space, cit, 40, 43-47.*

⁶ BENKO, GRUBER, SCHROGL, *The UN Committee on the Peaceful Uses of Outer Space, cit., 38.*

⁷ Under the NATO Nuclear Sharing Arrangements, about 150-200 nuclear weapons are deployed in Belgium, Germany, Greece, Italy, The Netherlands, Turkey and the United Kingdom but, during peacetime all of the weapons remain under custody and control of US forces. On this subject, see: <http://www.basicint.org/pubs/Research/2000nuclearsharing2.htm>.

⁸ Article VIII of the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies (hereafter OST): "A State Party to the Treaty on whose registry an object launched into outer space is carried shall retain jurisdiction and control over such object, and over any personnel thereof, while in outer space or on a celestial body" (Text in 610 UNTS 205, 18 UST 2410).

⁹ CSABAFI, *The Concept of State Jurisdiction in International Space Law, The Hague, 1971.*

¹⁰ CHENG, *Nationality for Spacecraft? In Air & Space Law: De Lege Ferenda, Essays in Honour of Henry Wasseberg, Masson Zwaan, Mendes de Leon (ed), 1992, 214.*

¹¹ For a definition of jurisdiction in public international law, see, e.g. BOWETT, *Jurisdiction: Changing Patterns of Authority over Activities and Resources* in REISMAN, *Jurisdiction in International Law, Dartmouth, Aldershot, Brookfield (USA),*

Singapore, Sydney, 1999, 237-262; CSABAFI, *The Concept of State Jurisdiction in International Space Law, cit., 49 ss., 124-125*; CHENG, *Studies in International Space Law, Oxford, 1997, 72-80.*

Gorove describes jurisdiction as a "legal concept used to describe a State's right to exercise legislative, executive and judicial powers with respect to a particular person, thing or event...State can still exercise jurisdiction and control over people and objects in outer space; however is not the launching State but the State of registry which is accorded this right" (*Developments in Space Law, Issues and Policy, Dordrech, Boston, London, 1991, 330*).

¹² CHENG, *Studies in International Space Law, Oxford, 1997, 73-75.*

¹³ Definitions in CHENG, *Studies in Space Law, cit, 72-73.*

¹⁴ "Quasi-territorial jurisdiction ...is the sum total of the powers of a State in respect of ships, aircraft and spacecraft having its nationality or registration...Quasi-territorial jurisdiction differs from personal jurisdiction in that it extends not only to the craft in question but also to all persons and things on board, including the activities of such persons, whether on board the craft or elsewhere" (CHENG, *Studies, op. cit, 73*).

¹⁵ For the different definitions of control, see, e.g. REIJNEN, *The United Nations Treaties Analysed, 1992, 118-119*; CSABAFI, *The Concept of State Jurisdiction, op. cit; 108 ss.*

¹⁶ "A kind of factual complement to or consequence of jurisdiction...The requirement of control is added to that of jurisdiction, to ensure that the State of registration will also be able to enforce the legislation by exercise of its jurisdiction", VON DER DUNK, *Private Enterprises and Public Interests in the European Spacecraft, Leiden, 1988, 27.*

¹⁷ Convention on the registration of Objects Launched into Outer Space, 28 UST 695, TIAS 8480.

¹⁸ GOROVE, *The U.S./International Space Station: Legal Aspects of "Space Objects" and "Jurisdiction and Control" in Developments in Space Law, cit, 330.*

¹⁹ CHENG, *Studies, op. cit, 473.*

²⁰ CHENG, *Studies, op. cit., 415.*