

# DISTINGUISHING "PEACEFUL" FROM "MILITARY" USES OF ATOMIC ENERGY: SOME FACTS AND CONSIDERATIONS†

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Ever since the discovery of the means of releasing nuclear energy, one of the most pressing exigencies of our time has been the establishment of effective international controls to insure that the formidable power of the atom will be used solely for the peaceful pursuits of mankind.

When general nuclear disarmament appeared to be an unattainable goal under existing world conditions, Western policy makers decided to focus on more limited objectives, such as the setting up of international controls over the civilian applications of atomic energy; thereby they hoped to make atomic industrial know-how widely available to less developed nations without simultaneously enhancing the chances of proliferation of nuclear weapons. The various international atomic control systems which — as a result — have come into existence have been incorporated in a series of international bilateral accords as well as international multilateral agreements such as those establishing the International Atomic Energy Agency (IAEA), the European Atomic Energy Community (Euratom) and the European Nuclear Energy Agency (ENEA) of the Organization of European Economic Cooperation (OEEC), now known as the Organization of Economic Cooperation and Development (OECD).<sup>1</sup>

The problem of distinguishing "peaceful" from "military" uses in the field of nuclear energy is of fundamental importance inasmuch as one of the basic objectives of the above international control arrangements has been to assure that nuclear materials earmarked for peaceful purposes would not be diverted to military uses.<sup>2</sup>

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<sup>1</sup> For a concise, comparative analysis of the various international control systems, see Gorove, *Controls Over Atoms-for-Peace: Some Facts and Implications for Nuclear Disarmament*, 27 LA. L. REV. 36 (1966).

<sup>2</sup> So far as it can be ascertained there has been very little discussion, if any, in the literature involving the problem of distinguishing "peaceful" from "military" uses in relation to atomic energy. Most of the recent writings discussing similar distinctions pertain to other areas of the law, particularly to space law. See, e.g., MCDUGAL, LASSWELL & VLASIC, *LAW AND PUBLIC ORDER IN SPACE* 395 ff. (1965), with an extensive listing of the relevant literature; see also Meyer, *Interpretation of the Term 'Peaceful' in the Light of the Space Treaty*, paper presented before the 19th Congress of the International Astronautical Federation, New York City, October

To be sure, the word "military" or "nonpeaceful" within the context of atomic energy, may refer to something more than just "atomic weapons" or "atomic warfare." It may or may not include submarines, airplanes or rockets propelled by atomic energy. It may or may not include nuclear explosives or radioactive fallout. Where is the line to be drawn? Even if the word "military" referred to the more restricted concept associated with "atomic weapons," it would be necessary to include a definition of that term which may, owing to its technical nature, be difficult to apply. In addition, there is the problem of the meaning of the term "use." Does this include the various phases of "research," "development," "production," "testing," and "storage," or only actual application?

Just as it may be extremely difficult to determine the degree to which the discovery or use of electricity, steam, or water power have contributed to peace or added to the horrors of warfare, it may be equally difficult if not impossible to determine whether the actual application of atomic energy will or will not in a given situation increase the military capabilities of a nation. Thus, atomic energy for military purpose, as in the case of U.S. atomic stockpiles, may serve as a deterrent to war and hence contribute to peace, whereas nuclear energy for peaceful purposes, such as atomic power plants providing electricity or atomic-propelled commercial airplanes, may increase the military potential of a nation and hence have a tremendous wartime significance. Similarly, it may be very hard to determine the line where peaceful pursuits or studies end, or shade off into their military counterparts. Also, it may be difficult to determine the extent to which the assistance obtained from a foreign source releases the recipient country's resources for a military program of its own.<sup>3</sup>

While there have been many attempts to define the concept of "military purpose," no satisfactory definition has been achieved. However, there have been some clues provided in a series of atomic bilateral agreements,<sup>4</sup> in the security control system of the European Nuclear Energy

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17, 1968 (mimeo.) For brief references to the problem with regard to atomic energy, see Gorove, *Humanizing the Atom: Establishment of the International Atomic Energy Agency*, 3 N.Y.L.F. 245 (1957); Gorove, *The First Multinational Atomic Inspection and Control System at Work: Euratom's Experience*, 18 STAN. L. REV. 160 (1965); Gorove, *Controls Over Atoms-for-Peace: U.S. Bilateral Agreements with Other Nations*, 4 COLUM. J. OF TRANSNAT'L L. 181 (1966); Gorove, *Controls Over Atoms-for-Peace: Some Facts and Implications for Nuclear Disarmament*, 27 LA. L. REV. 36 (1966); Gorove, *The Inspection and Control System of the European Nuclear Energy Agency*, 7 VA. J. INT'L L. 68 (1967); Gorove, *Transferring U.S. Bilateral Safeguards to the International Atomic Energy Agency: The 'Umbrella' Agreements*, 6 DUQ. U. L. REV. 1 (1967).

<sup>3</sup> Gorove, *Humanizing the Atom: Establishment of the International Atomic Energy Agency*, 3 N.Y.L.F. 245 at 279 (1957).

<sup>4</sup> For general discussions of the control provisions of atomic bilateral agreements between nations, see Gorove, *Controls Over Atoms-for-Peace: U.S. Bilateral Agreements with Other Nations*, 4 COLUM. J. OF TRANSNAT'L L. 181 (1966); Gorove, *Controls over Atoms-for-Peace Under Canadian Bilateral Agreements with Other Nations*, 42 DENVER L. CENTER J. 41 (1965); Gorove, *Safeguarding Atoms-for-Peace: U.K. Bilateral Agreements with Other Nations*, 68 W. VA. L. REV. 263 (1966); Seaborg, *Existing Arrangements for International Control of Warlike*

Agency (ENEA) of the Organization for Economic Cooperation and Development (OECD),<sup>5</sup> as well as in some discussions of the International Atomic Energy Agency (IAEA).<sup>6</sup>

Under a number of bilateral agreements concluded by the United States with other nations the "research on or development of atomic weapons,"<sup>7</sup> as well as the disposition, utilization, design, and fabrication of atomic weapons, has been regarded as a military use.<sup>8</sup> On the other hand, the entire field of health and safety relating to atomic energy has been regarded as falling under the "peaceful" category. Similarly, information on reactors, including reactor engineering and properties of reactor materials and their specification, reactor components, overall design and characteristics and operational techniques and performance of reactors; geology, exploration techniques, chemistry of uranium and thorium, properties of materials, technology of production and utilization of materials was regarded as having "peaceful" rather than "military" connotations.<sup>9</sup>

Between these two fairly delineated extremes, there has been a wide area where the ultimate determination seems to have been dependent on technological developments at a particular time. Thus, for instance, the development of atomic submarines, ships, aircraft and certain package power reactors has been regarded by some bilateral agreements as a "military" endeavor until such time as these atomic devices would warrant civilian applications.<sup>10</sup> Essentially similar position was taken with regard

*Material-5: The United States Program of Bilateral Safeguards*, 2 DISARMAMENT & ARMS CONTROL 442 (1964).

<sup>5</sup> A thoroughgoing account and assessment of ENEA's security control procedures may be found in Gorove, *The Inspection and Control System of the European Nuclear Energy Agency*, 7 VA. J. INT'L. L. 68 (1967). For briefer, informative discussions see Huet, *The O.E.E.C. European Nuclear Energy Agency*, 1 LAW AND ADMINISTRATION 180 (H. Marks ed. 1959); Vignes, *Le Système de Contrôle de Sécurité de l'Agence Européenne pour l'Énergie Nucléaire*, 7 ANNUAIRE FRANCAIS DE DROIT INTERNATIONAL 555 (1961).

<sup>6</sup> For historical background and general information on the IAEA, see Bechhoefer & Stein, *Atoms for Peace*, 55 MICH. L. REV. 747 (1957); Gorove, *Humanizing the Atom: Establishment of the International Atomic Energy Agency*, 3 N.Y.L.F. 245 (1957); Isenbergh, *The Statute of the International Atomic Energy Agency*, 1 LAW AND ADMINISTRATION 219 (Marks ed. 1959); Stoessinger, *Atoms for Peace: The International Atomic Energy Agency*, ORGANIZING PEACE IN THE NUCLEAR AGE 117 (1959). For more recent discussion and appraisals of the IAEA and its safeguards system, see Gorove, *Maintaining Order Through On-Site Inspection: Focus on the IAEA*, 18 W. RES. L. REV. 1525 (1967); Hall, *The Safeguards Role of the International Atomic Energy Agency*, 2 DISARMAMENT & ARMS CONTROL 170 (1964); Szasz, *The Law of International Atomic Energy Safeguards*, 1 REVUE BELGE DE DROIT INTERNATIONAL 196 (1967); Willrich, *Safeguarding Atoms for Peace*, 60 AM. J. INT'L. L. 34 (1966).

<sup>7</sup> See, e.g., Agreement between Turkey and the United States, June 10, 1955, [1955] 2 U.S.T. & O.L.A. 2703, T.I.A.S. No. 3320, art. VII(B). For additional agreements, see Gorove, *Controls Over Atoms-for-Peace: U.S. Bilateral Agreements with Other Nations*, 4 COLUM. J. OF TRANSNAT'L. L. 181 (1966).

<sup>8</sup> See, e.g., the Agreement between Australia and the United States, June 22, 1956, [1957] 1 U.S.T. & O.L.A. 738, T.I.A.S. No. 3830, art. II(B); cf. art. I(A) and (E).

<sup>9</sup> See, e.g., the Agreement between the United Kingdom and the United States, June 15, 1955, [1955] 2 U.S.T. & O.L.A. 2709, T.I.A.S. No. 3321, art. 1(C) (ii).

<sup>10</sup> *Id.* art. II(C) (a).

to the design, construction and operation of specific production plants for the separation of deuterium from other isotopes of hydrogen and for the separation of isotopes of any other element. The same applied to the design, construction and operation of facilities other than reactors capable of producing significant quantities of isotopes by means of nuclear reaction.<sup>11</sup>

Turning from the bilateral agreements to the ENEA Security Control Convention,<sup>12</sup> under the latter the use of special fissionable materials in weapons of war has been taken to mean use for a "military" purpose whereas the use of such materials in reactors for the production of electricity and heat or for propulsion has been regarded as use for a "non-military" purpose.<sup>13</sup> While the IAEA Statute<sup>14</sup> gives no similar clue regarding the meaning of "military" purpose, it is of some interest to note that the Statute aims not at "nonuse" for military purpose but at "nonuse in the furtherance" of such purpose which seems to indicate that the draftsmen favored a broader prohibition. It is of further interest that, whereas the Statute of the IAEA aims to ensure "nonuse in the furtherance" of any military purpose,<sup>15</sup> the Statute of the ENEA<sup>16</sup> purports to ensure "nonfurtherance."<sup>17</sup> In other words, under the ENEA, the materials, equipment and services are not supposed to further any military aim whether or not they are actually "used" for this purpose. Despite this clear distinction, its practical effect remains uncertain. On the one hand, there is no definition of the word "use" in the IAEA safeguards system, just as there is no circumscription of the term "furtherance." On the

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<sup>11</sup> *Id.* art. II.

<sup>12</sup> Organization for European Economic Co-operation, Convention on the Establishment of a Security Control in the Field of Nuclear Energy, December 20, 1957. For a text of the Security Control Convention, see 53 AM. J. INT'L. L. 1018 (1959).

<sup>13</sup> Art. 17.

<sup>14</sup> Statute of the International Atomic Energy Agency, July 29, 1957, [1957] 1 U.S.T 1093, T.I.A.S. No. 3873, 276 U.N.T.S. 3 (hereinafter cited as IAEA Statute).

<sup>15</sup> Art. III A.5 of the IAEA Statute reads:

"The Agency is authorized: . . . To establish and administer safeguards designed to ensure that special fissionable and other materials, services, equipment, facilities, and information made available by the Agency or at its request or under its supervision or control are not used in such a way as to further any military purpose; and to apply safeguards, at the request of the parties, to any bilateral or multilateral arrangement or, at the request of a State, to any of the State's activities in the field of atomic energy."

<sup>16</sup> *See*, Organization for European Economic Co-operation, Statute of the European Nuclear Energy Agency, December 20, 1957 (hereinafter cited as ENEA Statute). The text of the ENEA Statute appears in 53 AM. J. INT'L. L. 1012-18 (1959). On September 30, 1961, by decision of the Council of the Organization for Economic Cooperation and Development, the ENEA Statute was maintained in the new organization when the Convention establishing the OECD came into force on October 1, 1961.

<sup>17</sup> Art. 8(a) of the ENEA Statute reads: "A security control shall be established with a view to ensuring that the operation of joint undertakings and the materials, equipment and services made available by the Agency or under its supervision, shall not further any military purpose."

other hand, while the ENEA concept appears broader because of the exclusion of certain applications from the concept of military purpose, in actuality it probably is narrower. Whether or not it will remain so, will depend on the implementation of the concepts both by the ENEA and the IAEA in the future.<sup>18</sup>

Looking back in search for historical clues in some of the IAEA discussions, it may be recalled that at the time of the negotiation of the Agency's Statute several views were advanced. According to one opinion only the military applications of atomic explosion and the toxicity of radioactive fallout would have constituted use in the furtherance of military purpose.<sup>19</sup> Thus, the use of nuclear fuel for the propulsion of a submarine, airplane or missile, or the installation on a tanker of an engine similar to those on atomic submarines would not have amounted to such use. Another view was that the Agency's objective was not prevention but only segregation; so long as military uses were dissociated from peaceful ones, the argument ran, the Agency was obliged to assist one without being able to discourage the other. The point stressed was that, by assisting peaceful applications, the Agency would indirectly make the military programs easier to execute.<sup>20</sup>

Further discussions regarding problems of definition and interpretation also came up at the time of establishing the Agency's safeguards system which was to assure that certain designated items will not be used in such a way as to further a "military" purpose.<sup>21</sup> One of the views advanced was in favor of defining the concept of military purpose since nondefinition might leave a way out for states which wished to utilize the Agency's assistance for military purpose. If the inspectors found that materials had been diverted to military purpose, the argument ran, they would be in a difficult position if those concerned argued that the term "military purpose" had not even been defined. A contrary view stressed the point that an inspector who discovered some irregularity would report it to a higher authority, such as the Agency's Board of Governors, which would then be responsible for deciding whether or not there had been a diversion to military purposes. Thus, if an inspector found that, in a steel factory using radioisotopes supplied by the Agency to measure the thickness of steel-plate, certain quantities of the plate produced were used in the housing industry and others in the manufacture of military barges, it would be up to the Board of Governors to make the relevant decision. At the end of

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<sup>18</sup> See Gorove, *The Inspection and Control System of the European Nuclear Energy Agency*, 7 VA. J. INT'L. L. 68 at 74 (1967).

<sup>19</sup> See Gorove, *Humanizing the Atom: Establishment of the International Atomic Energy Agency*, 3 N.Y.L.F. 245 at 279 (1957).

<sup>20</sup> IAEA Doc. CS/OR. 26, 66-67 (1957).

<sup>21</sup> The discussions were held at the time of the drafting of the Agency's Safeguards Document, which embodied the principles and procedures governing the application of the Agency's first comprehensive safeguards system. See, IAEA Doc. INFCIRC/26 (1961).

the discussions, the consensus was that, while the use of nuclear energy for a "military purpose" would no doubt be broader than just the production of military weapons, not much would be gained by seeking an exact definition at the time. Too narrow a wording might hinder the Board of Governors in discharging its obligations properly, while working out a comprehensive and foolproof definition would be extremely difficult, if not impossible. Therefore, it was considered wiser to postpone a definition until some future time when there might be a kind of common law on the subject, based on inspectors' reports and on the Board's decisions. In the meantime, the Board would consider and decide on the doubtful borderline cases as they arose, whether at the time of application for Agency help, or at the time when instances of possible misuse might be reported.

Even the cursory examples to which space has permitted allusion seem to indicate that the determination of the dividing line between "peaceful" and "military" use or purpose in relation to atomic energy is by no means an easy task. First, it appears essential to assess the overall objective of the particular control system, that is to determine whether or not it aims at preventing "use," "use in the furtherance," or just "furtherance" of a military purpose. Next, it would seem necessary to clarify whether or not all types of activities falling within each of these categories are to be prohibited or only certain types. For instance, research or the use of information helpful in the development of atomic weapons may not be regarded so serious as the setting up of nuclear power plants, or the actual use of nuclear materials for weapons' production. Manufacture of atomic explosives could in most circumstances be regarded as military use, unless the preferred policy was to allow it in certain specified instances (e.g., small explosive power, negligible radioactivity, etc.).

Obviously there is a wide gamut of activities that the terms "use," "furtherance in the use," or just "furtherance" of a military purpose may purport to cover. Each of these could be placed on an infinite line ranging from activities which seem to constitute minimal dangers or threats of deprivation to the community involved, to activities where the hazards appear to be greatest in terms of potential value losses. Any choice regarding the precise placement of the dividing line between peaceful and military use or purpose is above all a policy question which should be determined after a clarification of community objectives, an evaluation of the costs and threats to community values of the alternative solutions and a consideration of relevant trend perspectives. Any policy judgment, however, would do well to keep in mind the lesson conveyed by the atomic bilateral agreements, namely that something which has overwhelmingly military connotations today, may have many peaceful uses tomorrow. Hence, the distinction between "peaceful" and "military" uses of atomic

energy is a relative one and as such, should be reevaluated from time to time in the light of technological developments and innovations.