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James R. Wilch

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COMMENT

GATT and the Half-Life of Uranium Industry Protection

“But further, said I, it is practically impossible to establish the city in a region where it will not need imports.”¹

I. INTRODUCTION

In 1964, Congress amended the Atomic Energy Act of 1954² to authorize the private ownership of nuclear fuel to promote the development of a civilian nuclear power industry.³ By promoting vigorous civilian demand for domestically mined uranium, Congress attempted to assure the viability of the domestic uranium producers, which in turn would assure the availability of a domestic supply for the military.⁴ Because natural uranium must be enriched prior to its use in either the civilian or defense sector, and because the United States Atomic Energy Commission (“AEC”) ran what was then the sole enriching operation in the free world, the domestic uranium industry could be protected from foreign competition by restricting enrichment.⁵ Congress thus authorized the AEC to restrict enrichment of foreign-source uranium destined for domestic end use “to the extent necessary to maintain the viability of the

¹ PLATO, *REPUBLIC* in *THE COLLECTED DIALOGUES OF PLATO* 370:e (E. Hamilton & H. Cairns eds. 1961).

² Atomic Energy Act of 1954, ch. 1073, 68 Stat. 919 (codified as amended at 42 U.S.C. §§ 2011-2282 (1982 & Supp. 1987))[hereinafter AEA of 1954].

³ The 1964 amendments added subsection (v) to § 161 of the AEA of 1954. Private Ownership of Special Nuclear Materials Act, Pub. L. No. 88-489, § 16, 78 Stat. 602, 606 (1964)(codified at 42 U.S.C. § 2201(v)(1982))[hereinafter § 161(v)].

⁴ See *Private Ownership of Special Nuclear Materials, 1964: Hearings Before the Subcomm. on Legislation of the Joint Comm. on Atomic Energy*, 88th Cong., 2d Sess. 343 (1964)[hereinafter *1964 Hearings*].

⁵ See *infra* notes 27-31 and notes 41-59 and accompanying text, for discussion of the uranium fuel cycle, and enrichment restrictions, respectively.

domestic industry.”⁶

These restrictions on international trade conflicted with the United States’ trade obligations imposed by its membership in the General Agreement on Tariffs and Trade (GATT).⁷ Despite an inauspicious beginning⁸ and some controversy as to whether it is law in the United States,⁹ GATT is the dominant framework controlling the flow of goods across international borders.¹⁰ Although the members of GATT, known as Contracting Parties, have not always adhered to the Agreement’s terms, they realize the enormous potential for mutual gains through trade. As a result, the GATT relationship has persisted.¹¹

GATT generally requires that each Contracting Party assure equal opportunity for goods of all Contracting Parties, including domestic products.¹² This “most favored nation” (“MFN”) principle requires, with many exceptions, that advantages accorded to products originating in or destined for one Contracting Party be granted to similar products coming from or going to all other Contracting Parties.¹³ As of 1987,

⁶ 42 U.S.C. § 2201(v).

⁷ General Agreement on Tariffs and Trade, *opened for signature* Oct. 30, 1947, 61 Stat. A3, A7 T.I.A.S. No. 1700, 55 U.N.T.S. 187 (effective Jan. 1, 1948)[hereinafter GATT].

⁸ GATT was originally intended to be the operational framework, or controlling “contract,” of a United Nations sponsored, multi-nation mercantile body called the International Trade Organization. The ITO never advanced beyond the negotiating stage, however, largely because the United States refused to join. J. JACKSON, *WORLD TRADE AND THE LAW OF GATT* 49-53 (1969)[hereinafter J. JACKSON]. The GATT contractual relationship survived, however, and has been established in practice as an independent entity, albeit weaker than intended. See Jackson, *GATT and Recent International Trade Problems*, 11 MD. J. INT’L L. & TRADE 1, 8-9 (1987)[hereinafter Jackson, *Recent Problems*].

⁹ See Jackson, *The General Agreement on Tariffs and Trade in United States Domestic Law*, 66 MICH. L. REV. 249, 280-90 (1967)[hereinafter Jackson, *GATT and Domestic Law*]. Congress never enacted GATT into law, and the United States and the other signatories have proceeded under the agreement only provisionally. Protocol of Provisional Application, Oct. 30, 1947, 61 Stat. A2051, T.I.A.S. No. 1700, 55 U.N.T.S. 308 (1948).

¹⁰ O. LONG, *LAW AND ITS LIMITATIONS IN THE GATT MULTILATERAL TRADE SYSTEM* 4-6 (1985). “GATT is at the same time a legal framework for the conduct of trade relations between its member countries, a forum for trade negotiations and for the adaptation of its legal framework, and an organ for conciliation and settlement of disputes.” *Id.* at 5.

¹¹ The GATT framers believed that free trade was the key to efficient resource allocation and world prosperity. GATT, *supra* note 7, Preamble, para. 2. It was also hoped that GATT-controlled trade would promote political cooperation and peace. K. DAM, *THE GATT: LAW AND INTERNATIONAL ECONOMIC ORGANIZATION* 12 n.5 (1970). See generally Abbott, *Linking Trade to Political Goals: Foreign Policy Export Controls in the 1970s and 1980s*, 65 MINN. L. REV. 739, 853-54 (1981)[hereinafter Abbott].

¹² See J. JACKSON, *supra* note 8, at 255.

¹³ See GATT, *supra* note 7, art. I(1). The article provides: “With respect to customs duties and charges of any kind imposed on or in connection with importation or exportation . . . any advantage, favour, privilege or immunity granted by any contracting party to any product originating in or destined for any other country shall be accorded . . . to the like product originating in or destined for the territories of all other contracting parties.”

GATT membership included ninety-six Contracting Parties. These, and the additional twenty-eight countries which abide by GATT principles in conducting trade, account for over 80% of world trade in goods.¹⁴ Uranium producers that are both GATT members and U.S. suppliers include Canada, Australia, South Africa, Gabon, and Niger.¹⁵ From 1967 to 1987, domestic utilities purchased 106.8 million pounds of uranium abroad and committed to purchase an additional 109.5 million pounds over the next several years. Domestic producers have exported 62 million pounds over the same period and are committed to sell an additional 12.2 million pounds.¹⁶ Since virtually all U.S. trade in uranium is with GATT members, it is important to reconcile U.S. defense policy for uranium with GATT.

The uranium enrichment restriction, though technically in violation of the GATT prohibition against differing "national treatment,"¹⁷ was intended to afford temporary protection to an industry recently emancipated from defense control.¹⁸ It was also possible that in 1964 the restriction fit within GATT's exception from nondiscriminatory trade policies for trade in goods affecting national security.¹⁹ The AEC enforced 100% enrichment restrictions from 1969 to 1977, and phased out the restrictions from 1977 to 1984.²⁰

Current uranium market conditions, however, reflect a separation between civilian and defense supply markets. Australia and Canada, two reliable U.S. allies with substantial proven uranium reserves, supply most of the needs of the U.S. civilian reactor program with less expensive, higher grade ore than is available in the United States.²¹ Continued imports from Canada, by far the largest supplier to the United States, are assured by the recently enacted Canada-United States Free Trade Agreement ("FTA").²² Moreover, neither exporter permits its uranium to be used for defense purposes, allowing allocation of all domestic production

¹⁴ See THE CONTRACTING PARTIES TO GATT, GATT ACTIVITIES 1987, at 118-19 (1988)[hereinafter GATT ACTIVITIES 1987]; see also F. STONE, CANADA, THE GATT AND THE INTERNATIONAL TRADE SYSTEM 23 (1984).

¹⁵ GATT ACTIVITIES 1987, *supra* note 14, at 118-20.

¹⁶ ENERGY INFO. ADMIN., U.S. DEPARTMENT OF ENERGY, URANIUM INDUSTRY ANN. 1987 66 (1988)[hereinafter URANIUM ANN.].

¹⁷ GATT, *supra* note 7, art. III. *But see* S. REP. NO. 1325, 88th Cong., 2d Sess. 17 (1964), reprinted in 1964 U.S. CODE CONG. & ADMIN. NEWS 3105, 3121 [hereinafter 1964 REPORT]. For more on uranium and national treatment, see *infra* notes 182-190 and accompanying text.

¹⁸ URANIUM ANN., *supra* note 16, at 2.

¹⁹ GATT, *supra* note 7, art. XXI. See *infra* notes 203-208 and accompanying text.

²⁰ Foreign Uranium for Domestic Use: Modification of Restrictions on Enrichment, 39 Fed. Reg. 38,016-17 (1974)[hereinafter Modification of Restrictions].

²¹ See *infra* notes 256-259 and accompanying text.

²² Canada-United States Free Trade Agreement, Dec. 22, 1987-Jan. 2, 1988, — U.S.T. —,

to the military, if necessary. Defense needs can also be satisfied for several years by a substantial government uranium stockpile, and if the stockpile becomes depleted, now-dormant domestic sources can be called back into production with adequate warning. The utilities also maintain significant stockpiles to draw upon. Since civilian and military uranium needs are assured through individual sources,²³ the GATT national security exception, if it ever applied, does not currently apply to uranium imported for civilian use.²⁴

The uranium market can never truly be "free," however. Because uranium has few metallurgical uses, and because there is a real danger of weapons-grade uranium falling into irresponsible hands,²⁵ non-proliferation restraints and tight safety regulation are required on uranium trade.²⁶ Nevertheless, this Comment will show that civilian uranium trade policy can be formulated to resolve the tension between GATT, and military security and nonproliferation interests.

The international uranium supply markets for both the U.S. nuclear utilities and its national defense are sufficiently distinct that the movement of uranium and provision of enrichment services for the civilian nuclear power industry can now be governed by international commodity

T.I.A.S. No. —, reprinted in 27 I.L.M. 293 [hereinafter FTA]. See *infra* notes 105-126 and accompanying text.

²³ See Section IV *infra* for detailed discussion.

²⁴ See *infra* notes 223-230 and accompanying text.

²⁵ Former President Kountché of uranium-rich Niger stated in 1982 that he would sell mineral wealth "even to the devil." Niger's uranium customers have included Libya, Pakistan, Iraq, and Algeria. Woodsworth, *How Niger's Uranium Boom Lost its Glitter*, Fin. Times, Sept. 21, 1988, at 6, col. 1 [hereinafter Woodsworth].

²⁶ Enriched uranium can be used as an explosive with additional enrichment. N. MOSS, *THE POLITICS OF URANIUM* 21 (1981). Currently, the United States, the Soviet Union, France, Great Britain, China, and India are known to have nuclear weapons, but other countries are suspected of possessing them. See generally Schwartz, *Controlling Nuclear Proliferation: Legal Strategies of the United States*, 20 LAW & POL'Y INT'L BUS. 1 (1988). The United States, the Soviet Union, and two European consortia currently have enrichment capability. Brazil, Japan, and others are on the verge of developing this capability. See *infra* note 65. The need to stanch the spread of nuclear weapons and the capability to make them became a pressing concern in the 1960s, resulting in the Non-Proliferation Treaty of 1967. Treaty on the Non-Proliferation of Nuclear Weapons, *opened for signature* July 1, 1968, 21 U.S.T. 483, T.I.A.S. No. 6839, 729 U.N.T.S. 161. This treaty recognized the "links between nuclear energy and weapons" and thus also restricted trade in uranium feed material and enrichment technology. Treverton, *Introduction*, in *ENERGY AND SECURITY* 2 (G. Treverton ed. 1980) [hereinafter G. TREVERTON].

In 1957, the International Atomic Energy Agency, of which the United States is a member, was created to monitor and safeguard the use of nuclear materials. Statute of the International Atomic Energy Agency, *opened for signature* Oct. 26, 1956, 8 U.S.T. 1093, T.I.A.S. No. 3873, 276 U.N.T.S. 3. The third major prong of the U.S. nonproliferation effort is the Nuclear Non-Proliferation Act of 1978, Pub. L. No. 95-242, 92 Stat. 120 (1978) (codified at 22 U.S.C. §§ 3201-32 (1982 & Supp. V 1987); 42 U.S.C. §§ 2011-2160(a) (1982)), in response to India's "peaceful" nuclear explosion in 1974 and to other loopholes in U.S. law. Schwartz, *supra*, at 2-3, 28-29.

trade norms without jeopardizing national defense. The United States thus can no longer sidestep the operation of GATT in this area.

Section II of this Comment describes the protection of the uranium industry through enrichment restrictions and the concurrent uranium market distortions. The section then examines the subsequent relaxation of enrichment restrictions during the 1980s and the futility of attempts to reimpose restrictions on civilian uranium trade. Section III demonstrates how enrichment and other trade restrictions negatively interact with GATT and concludes that the national security exception is inapplicable. Section IV illustrates the distinction between the civilian and military markets, holding that uranium trade can now be governed by GATT.

II. URANIUM INDUSTRY PROTECTION

Uranium is a naturally occurring, silvery-white radioactive metal²⁷ with several isotopes, only one of which (U_{235}) is readily fissionable and thus usable as reactor fuel.²⁸ Ores of uranium contain less than one percent U_{235} and in order to be usable as fuel, this concentration must be enhanced to between three and four percent.²⁹ To do so, the ore is first milled,³⁰ and then the fissionable isotope is concentrated by one of several means of enrichment.³¹

²⁷ Uranium is relatively common among crustal elements, occurring in such minerals as pitchblende, coffinite, and carnotite. Commercially mined deposits appear in Arizona, Colorado, New Mexico, Texas, Utah, Washington, and Wyoming. URANIUM ANN., *supra* note 16, at 3.

²⁸ Uranium has an atomic number of 92, which means that there are 92 protons in the nucleus of an uranium atom. *See Periodic Table of the Elements*. The isotope U_{235} has 235 nucleons, or 92 protons and 143 neutrons. Nuclei of other isotopes, by definition, have differing numbers of neutrons, but the constant, identifying number of protons. *See* I. KAPLAN, NUCLEAR PHYSICS 197-98 (1975)[hereinafter I. KAPLAN]. Uranium fission occurs when U_{235} is bombarded with sufficiently energetic neutrons, which split the target nuclei typically into two nuclear fragments, which are themselves nuclei of atoms of intermediate atomic weight, such as yttrium or xenon. Each fission event releases energy in the form of kinetic energy and gamma radiation. A fissioning U_{235} atom also releases an average of 2.5 neutrons, which permits a chain reaction to occur. In an uncontrolled reaction, the number of fissions and resulting neutrons and energy releases increase exponentially in time. If the time interval is small enough, an explosion occurs, as in an atomic bomb. If neutron generation can be controlled to a steady state, where as many neutrons are used as are produced, the released energy can be captured and used to generate electricity. *See* K. KRANE, INTRODUCTORY NUCLEAR PHYSICS 478-527 (1988). One kilogram of fissioning uranium can release about the same quantity of energy as an explosion of 20,000 tons of TNT. I. KAPLAN at 637. Theoretically, any nucleus will fission if the bombarding neutrons are of high enough energy. U_{235} is ideal because fission can be induced by slow (lower energy) neutrons. *Id.* at 608.

²⁹ URANIUM ANN., *supra* note 16, at 3.

³⁰ Uranium mills are usually located near the mines, and employ chemical leaching methods to obtain a uranium oxide concentrate called yellowcake (U_3O_8). Uranium quantities are usually expressed as U_3O_8 equivalent. *Id.*

³¹ Because fissionable U_{235} , and less-readily fissionable isotopes such as U_{238} feature differing

A. Early History

Prior to the Second World War, uranium was mined incident to the extraction of other elements and found use as an alloy constituent, and to color glass and ceramics.³² Its first large-scale use was in atomic weapons that were tested in the United States and subsequently dropped on Hiroshima and Nagasaki, bringing a swift close to World War II.³³ The Army Corps of Engineers was responsible for wartime weapons development.³⁴ At that time, the only source of uranium was a single mine in the Belgian Congo, as deposits in the United States remained unexplored.³⁵

After the War, Congress passed the Atomic Energy Act of 1946

numbers of neutrons, the resultant size and weight differential can be exploited as a means of separation. The three U.S. enrichment plants employ the gaseous diffusion process. In this process, the uranium oxide in yellowcake is first converted to gaseous uranium hexafluoride (UF₆), which is then passed several times through a cascaded molecular sieve. The UF₆ featuring U₂₃₅ is slightly smaller and lighter, and passes more readily through the sieve. See T. MOORE, URANIUM ENRICHMENT AND PUBLIC POLICY 9-11, 14 (1978). Enrichment plant output is calculated by a complex formula expressed in terms of Separative Work Units ("SWUs"). An SWU measures the amount of work required to produce a certain weight of product at a certain composition, using feed material of a certain weight and composition, with the process rejecting a weight of material ("tails") at a certain composition. Brigoli, *Cascade Theory*, in URANIUM ENRICHMENT 39-42 (S. Villani ed. 1979).

A later developed process, known as gas centrifugation, physically spins the UF₆, and the fictitious centrifugal force dispatches the heavier U₂₃₈ away from UF₆ containing the lighter fissionable isotope. AM. NUCLEAR SOC., 2 NUCLEAR POWER AND THE ENVIRONMENT: FUEL/WASTE QUESTION & ANSWERS 4-6 (1982). A method still in development, called Atomic Vapor Laser Isotope Separation ("AVLIS") relies on the fact that U₂₃₅ and U₂₃₈ atoms absorb different colors of light. A laser emitting wavelengths only absorbed by U₂₃₅, ionizes these atoms, allowing separation by an electromagnetic field. GOV'T ACC'T OFF., URANIUM ENRICHMENT, CONGRESSIONAL ACTION NEEDED TO REVITALIZE THE PROGRAM 26 (1987)[hereinafter GAO REPORT].

Uranium used to fuel the light water reactors typically operated in the United States, and the subject of this Comment, requires further processing. The separated gaseous product containing U₂₃₅ is converted to solid uranium dioxide (UO₂) powder and compressed into cylindrical pellets, then clad in sealed steel rods and arranged into fuel assemblies. URANIUM ANN., *supra* note 16, at 3. See generally *Proceedings of the Tri-Committee Business Advisory Panel on Uranium Enrichment: Joint Meeting Before the Subcomm. on Energy Research and Production of the House Comm. on Science and Technology, and the Subcomm. on Energy Conservation and Power of the House Comm. on Energy and Commerce, and the Subcomm. on Energy and the Environment of the House Comm. on Interior and Insular Affairs*, 98th Cong., 2d Sess. (1984). Upon depletion, the spent fuel containing uranium, transuranic elements created by neutron capture, and the many fission products must be stored indefinitely because of the intense and long-lived radioactivity of the waste. G. RUSS, NUCLEAR WASTE DISPOSAL: CLOSING THE CIRCLE (1984).

³² URANIUM ANN., *supra* note 16, at 2.

³³ Marsh, *The Nightmare is Born*, Fin. Times, Dec. 3-4, 1988, at 1, col. 1; Greenwood, Ratjehns, & Ruina, *Nuclear Power and Weapons Proliferation*, in G. TREVERTON, *supra* note 26, at 112.

³⁴ The Manhattan Engineering District developed "the Bomb," constructing the first enrichment facility at Oak Ridge, Tennessee. URANIUM ANN., *supra* note 16, at 2.

³⁵ See *Status of the Domestic Uranium Mining and Milling Industry: The Effects of Imports: Hearing Before the Subcomm. on Energy Research and Development of the Senate Comm. on Energy and Natural Resources*, 97th Cong., 1st Sess. 405 (1981)[hereinafter 1981 Hearing]. See also Conant

("AEA of 1946").³⁶ That enactment established the Atomic Energy Commission ("AEC") to oversee further nuclear development. The AEA of 1946 anticipated civilian use of nuclear energy for power generation but still prohibited private parties from owning enriched uranium.³⁷ The AEC itself began to develop domestic as well as Canadian and South African uranium sources in the succeeding years.³⁸

The next major statutory revision, the AEA of 1954, maintained the government's monopsony buyer status but encouraged the development of peaceful uses for atomic energy.³⁹ The United States, the United Kingdom, and the Soviet Union had built prototype reactors by 1960.⁴⁰

B. Private Ownership and Enrichment Restrictions

1. Authorizing Legislation

By 1963, the desire to encourage development of atomic energy, among other reasons, prompted the AEC to promote legislation allowing private ownership of enriched uranium.⁴¹ One year later, Congress authorized the private ownership and direct sale of "special nuclear materials," as enriched uranium was then called,⁴² by amending the AEA in 1964 to include section 161(v).⁴³ The amendment dictated the conditions under which the AEC could contract to enrich uranium for domestic utilities as well as for foreign entities.⁴⁴ In order to maintain sufficient uranium supply potential for military purposes, Congress conditioned

& Kratzer *International Dimensions of Energy*, 27 AM. U.L. REV. 559, 597-98 (1978)[hereinafter Conant].

³⁶ Atomic Energy Act of 1946, ch. 724, 60 Stat. 755 (1946)(codified as amended in scattered sections of 42 U.S.C. (1982 & Supp. V 1987)) [hereinafter AEA of 1946].

³⁷ *Id.* § 5(a), 60 Stat. 760-61. However, leasing uranium from the AEC was permitted. URANIUM ANN., *supra* note 16, at 2.

³⁸ The government had purchased over 100 million pounds of uranium from these countries by the 1960s. T. NEFF, *THE INTERNATIONAL URANIUM MARKET* 145, 174-75 (1984).

³⁹ AEA of 1954 § 52, 68 Stat. 929-30; Conant, *supra* note 35, at 584-85.

⁴⁰ Kratzer, *Nuclear Cooperation and Non-Proliferation*, 17 *ATOM. ENERGY L.J.* 250, 254-55 (1976).

⁴¹ See *Private Ownership of Special Nuclear Materials: Hearings Before the Subcomm. on Legislation of the Joint Comm. on Atomic Energy*, 88th Cong., 1st Sess. 4 (1963)[hereinafter *1963 Hearings*].

⁴² The AEA of 1954 classified enriched uranium as "special nuclear material." 42 U.S.C. § 2014(aa).

⁴³ See note 3, *supra*.

⁴⁴ The AEC was to issue written enrichment services "criteria" subject to prior review by the Joint Committee on Atomic Energy [hereinafter JCAE]. Pricing had to be nondiscriminatory for all customers and had to provide for recovery of the government's costs over a "reasonable period of time." 42 U.S.C. § 2201(v). For a detailed history and analysis of the legal framework of uranium enrichment, see Montange, *The Federal Uranium Enrichment Program and the Criteria and Full Cost Recovery Requirements of Section 161 of the Atomic Energy Act*, 2 J. MIN. L. & POL'Y 1 (1987)[hereinafter Montange].

the ability of domestic uranium consumers to procure enrichment of foreign source uranium on the continued strength of the U.S. uranium mining and milling industry:⁴⁵ “[The AEC], to the extent necessary to assure the maintenance of a viable domestic uranium industry, shall not offer [enrichment] services for source or special nuclear materials of foreign origin intended for use in a utilization facility within or under the jurisdiction of the United States.”⁴⁶ The statute required the AEC to include in its enrichment criteria “the extent to which [enrichment] services will be made available for [uranium] of foreign origin,”⁴⁷ based on its survey of the uranium market.⁴⁸ Congress estimated that restrictions would be required for only ten years, because by 1975, expected high civilian demand alone would assure the viability of the domestic uranium industry.⁴⁹

While the authorization of trade-limiting enrichment restrictions posed obvious problems with U.S. trade obligations, Congress paid only lip service to the GATT system. The report of the Joint Committee on Atomic Energy (JCAE) stated “these reasonable and flexible restrictions on the performance of services by the [AEC] should not in any sense be deemed inconsistent with any obligations the United States may have under [GATT] and other international trade agreements,” noting, however, that direct restrictions on the importation of foreign uranium would not be “appropriate.”⁵⁰ The JCAE apparently considered, or at least hoped, that enrichment would be thought of as a service and thus outside

⁴⁵ See 1964 REPORT, *supra* note 17, at 3121. (“It is the committee’s view that the measures taken in this bill to assure the viability of the domestic uranium industry are in the national interest since this industry is closely related to our vital defense and security interests.”) It is not clear, however, that only defense concerns, and not merely protectionism, were at work here. See *Id.* at 3135. (“In the committee’s view the maintenance of a viable domestic industry is an integral part of a sound nuclear industry and may, indeed, be closely intertwined with the defense and security interests of the United States.”) *Id.*

⁴⁶ 42 U.S.C. § 2201(v)(1982).

⁴⁷ *Id.*

⁴⁸ See 1964 REPORT, *supra* note 17, at 3120:

[S]uch importation could have a serious impact on the uranium mining and milling industry, particularly during a period of limited demand for its product. Accordingly, the flexible restriction contained in the committee bill will allow the [AEC] to review periodically the condition of the domestic and world uranium markets and to offer enrichment services on a basis which will assure, in its opinion, the maintenance of a viable domestic uranium mining and milling industry.

Id.

⁴⁹ 1964 Hearings, *supra* note 4, at 5. The lifting of restrictions was not guaranteed: “While it is possible that by 1975 substantial amounts of uranium could be freely imported into the United States for enrichment and sale on the domestic market, one cannot at this time predict, with any degree of certainty, the condition of the domestic uranium industry a decade hence.” 1964 REPORT, *supra* note 17, at 3135.

⁵⁰ 1964 REPORT, *supra* note 17, at 3121.

the ambit of GATT.⁵¹ The AEC, however, ran the only enrichment facility outside of the Soviet Bloc, and thus future enrichment restrictions would have the identical effect as direct import restrictions.⁵² The United States Department of State ("State Department") was less sanguine about the prospect of contravening trade obligations and issued a letter to the AEC warning that future section 161(v) restrictions might violate GATT and the general U.S. policy of reducing barriers to trade.⁵³ The matter, however, was left unresolved.

2. *Establishment of Enrichment Criteria and Foreign Response*

In 1966, the AEC established the first criteria for enrichment services pursuant to Section 161(v). These criteria called for a complete moratorium on the enrichment of foreign uranium for an indefinite period.⁵⁴ The embargo reflected, among other concerns, a desire to protect an "infant industry," as little uranium had been sold to anyone outside the military.⁵⁵ The criteria also gave utilities the option of using a requirements contract.⁵⁶ Under this arrangement, a utility could not obtain enrichment services from any other source, but neither was it obligated to use a minimum amount of enrichment.⁵⁷

Foreign uranium producers made no formal complaints under

⁵¹ "[I]t would be reasonable to place restrictions upon performance of services by the [AEC] where the enrichment of foreign material would have an adverse effect on the domestic uranium industry." *Id.* There is currently a movement to include trade in services as well as goods within the purview of GATT. *See infra* note 190.

⁵² The AEC also attempted to reserve for itself the authority to regulate importation of enriched uranium via its licensing authority over importation and possession in the event that domestic utilities attempted to evade the statute by purchasing enriched uranium abroad. *1963 Hearings, supra* note 41, at 29-30 (testimony of Joseph Henness, Gen'l Counsel, AEC).

⁵³ Letter from Alexis Johnson (Deputy Undersec'y, State Dept.) to Glenn Seaborg (Chairman, AEC)(June 8, 1964), *reprinted in 1964 Hearings, supra* note 4, at 409-11 [hereinafter Johnson-Seaborg Letter]. *See infra* note 189 for further discussion.

⁵⁴ Uranium Enrichment Services Criteria, 31 Fed Reg. 16,479 (Dec. 23, 1966) [hereinafter 1966 Criteria].

⁵⁵ *See, e.g., Uranium Enrichment Services Criteria and Related Matters: Hearings Before the Joint Comm. on Atomic Energy, 89th Cong., 2d Sess. 168-69 (1966)*[hereinafter *1966 Hearings*](statement of Dean McGee, Kerr-McGee)(restrictions needed only until domestic industry can establish itself in the commercial market). Protection of an infant industry is justified on the theory that a competitive industry will ultimately emerge if it is protected from competition in the early stages of its development. Gains may not ultimately be realized, however, if the new industry remains inefficient instead of cutting its comparative cost disadvantage. This protection of high cost output also penalizes downstream industries. *See H. GRAY, FREE TRADE OR PROTECTIONISM 136-37 (1985).*

⁵⁶ 1966 Criteria, *supra* note 54; *1966 Hearings, supra* note 55, at 4-5, 7-8 (statement of Glenn Seaborg, Chairman, AEC).

⁵⁷ *Id.*; *see Yokell & De Salvo, The Uranium Default: Westinghouse and the Utilities, PUB. UTIL. FORT., Feb. 7, 1985, at 22* [hereinafter Yokell & De Salvo].

GATT, but they did criticize the embargo as an unfair departure from free trade goals and GATT norms.⁵⁸ Consumers of foreign uranium benefitted, however, because they did not have to compete with purchasers in the United States for supplies available abroad.⁵⁹

C. Market Distortions

1. Upward Distortions

In the early part of the 1970s, the oil embargo, an increased projected demand for electricity, enhanced confidence in nuclear power as a reliable energy source, and growing environmental concern over the use of nonrenewable fossil fuels combined to prompt the AEC to make optimistic projections for growth in nuclear generating capacity.⁶⁰ Since the AEC needed approximately eight years lead time to get new enrichment plants on line, it proposed a new long-term fixed commitment contract that would guarantee business for its planned enrichment capacity.⁶¹ The contract required utilities to commit to purchase enrichment services, measured in units called Separative Work Units (SWUs), eight years in advance of enrichment of a reactor's initial core, and to specify exact SWUs needed on a continuous ten-year forward basis.⁶²

To assure that their expensive new nuclear plants would not sit idle, purchasers of enrichment services hedged against the possibility of facing a fuel supply shortfall in the future by locking in enrichment of fuel for their maximum projected requirements. This demand for enrichment quickly committed the AEC's enrichment capacity, forcing it to close its

⁵⁸ See Diplomatic Note No. 359 from the Embassy of Canada (Dec. 3, 1971) reprinted in Brief of the Government of Canada as Amicus Curiae in Support of Petitioners at appendix b, *Huffman v. Western Nuclear, Inc.*, 486 U.S. 663 (1988)[hereinafter Canada Brief] ("The Canadian Government has also pointed out that the restriction conflicts with United States' obligations and Canadian rights under the GATT, and has requested that the United States Government undertake to remove the restriction by a specified early date."); *Aide Memoire* to U.S. Gov't from Gov't of Australia (Dec. 13, 1971), reprinted in Brief of the Government of Australia as Amicus Curiae in Support of Petitioners at appendix 3, *Huffman v. Western Nuclear, Inc.*, 486 U.S. 663 (1988)[hereinafter Australia Brief] ("The Australian Government would welcome the early announcement of a definite date for the relaxation of the import embargo on foreign uranium to assist the normalization of world trade in this commodity.").

⁵⁹ Conant, *supra* note 35, at 599; T. MOORE, URANIUM ENRICHMENT AND PUBLIC POLICY 39 (1978).

⁶⁰ Total worldwide nuclear generating capacity was projected to increase 80-fold by the turn of the century. Montange, *supra* note 44, at 21-22.

⁶¹ *Proposed Changes in AEC Contract Arrangements for Uranium Enriching Services: Hearings Before the Subcomm. on Energy of the Joint Comm. on Atomic Energy*, 93rd Cong., 1st Sess. 17, 267 (1973)[hereinafter 1973 Hearings].

⁶² *Id.* at 23-26, 292-94. See also *supra* note 31.

order books.⁶³ This hedging behavior also created an enormous but illusory demand for uranium. The utilities, in contracting for enrichment services they might not ultimately need, also had to arrange for uranium feed material to be delivered to the AEC enrichment plants in quantities reflecting the amount of future SWUs purchased. Utilities thus also became committed to purchase uranium probably far in excess of what their actual needs would be. Prices skyrocketed, inducing the producers to step up production.⁶⁴ The contract cut-off and the enrichment embargo also spurred development of competitive enrichment capability abroad.⁶⁵

⁶³ Taylor, *How the U.S. Government Created the Uranium Crisis (and the Coming Uranium Bust)* (1977), reprinted in *Uranium Enrichment Policy: Hearing Before the Subcomm. on Energy Research and Development of the Senate Comm. on Energy and Natural Resources*, 95th Cong., 2d Sess. 143 (1978) [hereinafter *1978 Hearing*].

⁶⁴ It was also revealed that uranium producers were involved in a price-fixing cartel with foreign producers, which may also have maintained upward pressure on prices. *In re Uranium Antitrust Litig.*, 473 F. Supp. 393 (N.D. Ill. 1979). See also E. GRAY, *THE GREAT URANIUM CARTEL* (1982); J. TAYLOR & M. YOKELL, *YELLOWCAKE, THE INTERNATIONAL URANIUM CARTEL* (1979). In an effort to convince prospective utility customers to purchase its nuclear reactors, Westinghouse entered into long-term, fixed-price uranium supply contracts with the utilities when uranium prices were steady at about \$6.00 per pound. The rise in price to \$40.00 per pound by 1975 forced Westinghouse to default on the contracts in the face of staggering potential losses. Maher, *Antitrust Fall-Out: Tensions in Australian-American Relationship*, 13 FED. L. REV. 105-07 (1982). It defended the resulting multiple lawsuits on the theory that unexpected high prices and scarcity created by an international producers' cartel frustrated performance. See *In re Westinghouse Elec. Corp. Uranium Contracts Litig.*, 517 F. Supp. 440 (E.D. Va. 1981). In turn, Westinghouse sued the producers, alleging that foreign producers had conspired to fix prices and had induced domestic producers to go along. See Rankin, *The Supreme Court of Canada and the International Uranium Cartel: Gulf Oil and Canadian Sovereignty*, 2 SUP. CT. L. REV. 411-13 (1981).

Representatives of Canada, Australia, the United Kingdom, France, and South Africa actually did meet in Paris in February of 1972 to discuss how to react to the continuing U.S. enrichment embargo, which had foreclosed them from the largest uranium market. Believing that their GATT rights were violated by the embargo, these governments, and uranium producers from these nations, agreed to eliminate competition for sales outside the five participants and the United States. *Id.*

⁶⁵ In addition to the DOE, there now are three international competitors in the enrichment field. Eurodif is a consortium of French, Spanish, Belgian, and Italian interests which enjoys a 32% market share. It operates with a capacity of 10.8 million SWU per year, employing the gaseous diffusion process. German, British, and Dutch private and government partners comprise Urenco, which has capacity of approximately two million SWU per year. Its three gas centrifuge facilities account for 7% of the world market. The Soviet Union's Techsnabexport provides enrichment services to the Soviet-Bloc countries, as well as offering three million SWU per year to Western customers. GAO REPORT, *supra* note 31, at 21-22. By comparison, DOE's total enrichment capacity is 27 million SWUs. *Id.* at 8. Urenco plans to build a gas centrifugation plant in the United States if it can resolve DOE's security and energy concerns. *DOE Says Urenco Plant in U.S. Raises Security, Energy Policy Issues*, NUCLEARFUEL, Feb. 20, 1989, at 3. Japan, South Africa, Brazil, and Argentina are also developing enrichment technology, although Japan is likely to be the only serious competitor, with a projected three million SWU per year capacity by 2004. Japan is a leader in the development of the low cost, energy efficient AVLIS process. GAO REPORT, *supra* note 31, at 22. See note 31, *supra*.

In 1974, Congress held hearings to study the possibility of eliminating the enrichment embargo.⁶⁶ With uranium demand so high, and the domestic mining industry producing at capacity, the AEC announced later that year that enrichment restrictions could be eased and dictated a phased elimination over the period from 1977 to 1984.⁶⁷

2. *What Goes Up*

The bubble soon burst, however, as a different constellation of events caused the uranium price structure to collapse. Energy conservation efforts increased in reaction to the oil embargo, thereby reducing demand for electricity, and consequently for nuclear reactors and fuel.⁶⁸ Utilities obligated to purchase possibly unneeded enrichment services by the long-term, fixed-commitment contracts asked for contract adjustments. In 1978, the Department of Energy ("DOE"), which had taken over responsibility for the enrichment program from the now defunct AEC,⁶⁹ complied by creating an adjustable fixed commitment contract featuring shorter lead and commitment periods.⁷⁰ Utilities were thus able to order enrichment services conforming more to their actual uranium fuel needs, which reduced the demand for uranium.

Further, the domestic nuclear utility industry itself began to experience significant problems. A near disaster at the Three Mile Island plant in Pennsylvania,⁷¹ the realization that the nuclear waste problem might be intractable,⁷² and construction cost overruns and delays caused by the

⁶⁶ *Proposed Modification of Restrictions on Enrichment of Foreign Uranium for Domestic Use: Hearings Before the Joint Committee on Atomic Energy*, 93d Cong., 2d Sess. (1974).

⁶⁷ See *Modification of Restrictions*, *supra* note 20. The criteria allowed foreign uranium enrichment in the following percentages: 1977, 10%; 1978, 15%; 1979, 20%; 1980, 30%; 1981, 40%; 1982, 60%; 1983, 80%; 1984, 100%. U.S. INT'L TRADE COMM'N, SUMMARY OF TRADE AND TARIFF INFORMATION: URANIUM AND URANIUM COMPOUNDS 28 (1984).

⁶⁸ Montange, *supra* note 44, at 26.

⁶⁹ The AEC was abolished by the Energy Reorganization Act of 1974, Pub. L. No. 93-438, § 104, 88 Stat. 1233, 1237 (codified at 42 U.S.C. § 5814 (1982)). Its enrichment responsibility was briefly transferred to the new Energy Research and Development Administration ("ERDA") in the energy conscious 1970s. 42 U.S.C. §§ 5812, 5814(c)(1982). Congress later abolished ERDA, transferring its functions to the DOE. Department of Energy Organization Act, Pub. L. No. 95-91, 91 Stat. 565, (1977)(codified in scattered sections of 42 U.S.C. (1982)) [hereinafter DOE Organization Act].

⁷⁰ The commitment period was halved to five years, and the lead for execution was cut from eight to six years. *1978 Hearings*, *supra* note 63, at 244-45.

⁷¹ It has since been revealed that fully half the reactor core melted. *New View About Three Mile Island*, N.Y. Times, Nov. 2, 1988, at 23, col. 1 (city ed.). Molten UO₂ fuel broke through the inner containment vessel, leaving engineers puzzled as to why the outer, and final, containment vessel was not breached. Sullivan, *Three Mile Island Reveals New Details*, N.Y. Times, Jan. 26, 1988, at 17, col. 3 (nat'l ed.).

⁷² The nuclear industry maintains that nuclear wastes can be disposed of safely. "More than 25 years of scientific investigation, laboratory analysis, and field experiment . . . conclude that separat-

need to upgrade engineering⁷³ contributed to decisions by the utilities to cancel reactor orders and abandon works-in-progress.⁷⁴ The resulting overstock in enriched and natural uranium gave rise to an active secondary market, as utilities attempted to diminish the size of their fuel stockpiles,⁷⁵ depressing uranium demand further. The overheated market of the 1970s had given way to idle mines by the early 1980s.

D. New Requests for Protection, Another Contract, and Nonviability

In 1981, just four years after the enrichment restrictions began to be phased out, representatives of the domestic mining industry demanded relief under section 161(v).⁷⁶ Canada and Australia warned that reinstatement of restrictions would lead to action under GATT.⁷⁷

Although the DOE did not reimpose restrictions, Congress did alter the AEA to improve the DOE's accountability regarding its monitoring of the viability of the mining industry by adding section 170B in 1983.⁷⁸ This required the DOE to report annually⁷⁹ and establish criteria for assessing viability.⁸⁰ In its 1983 report to Congress, the DOE found that

ing nuclear waste from man's environment can take place safely by burial in mined geologic formations." G. RUSS, *supra* note 31, at 9. *But see* Schneider, *U.S. Delays Start of Plant To Store Nuclear Wastes*, N.Y. Times, Sept. 14, 1988, at 1, col. 3 (nat'l ed.) (nation's first repository designed to store waste from 45 years of nuclear weapons production, remaining radioactive for 280,000 years, delayed because of safety concerns and leaks). There are also concerns over the DOE's competence to manage waste site construction and operation. Wald, *Work Is Faltering on U.S. Repository for Atomic Waste*, N.Y. Times, Jan. 17, 1989, at 1, col. 6 (nat'l ed.). The effect on containment vessels and sites of long-term exposure to intense radiation is, of course, not yet known.

⁷³ Only 24 of 112 licensed reactors have completed the numerous changes required by the Nuclear Regulatory Commission following the Three Mile Island accident. *Nuclear Safety Goals are Not Met*, N.Y. Times, Mar. 27, 1989, at 39, col. 1 (nat'l ed.).

⁷⁴ Over 100 plants ordered since 1973 have been cancelled, and there have been no new orders since 1978. Nuclear power remains an important source of electricity, however, rising from 11.4% to 20.0% of generated power from 1979 to 1989. *See Industry is Doing Better but Prospects Are Grim*, N.Y. Times, Mar. 23, 1989, at 38, col. 2 (nat'l ed.). At the time of the Three Mile Island incident, there were 25 plants on order, 95 under construction, and 72 in operation. In 1989, there are only two on order, twelve under construction, and 111 in operation. Wald, *10 years After Three Mile Island*, N.Y. Times, Mar. 23, 1989, at 25, col. 3 (nat'l ed.).

⁷⁵ Proposed Uranium Enrichment Services Criteria, 51 Fed. Reg. 3624, 3625 (1986) (to be codified at 10 C.F.R. pt. 762) (proposed Jan. 24, 1986) [hereinafter 1986 Proposed Criteria].

⁷⁶ 1981 Hearing, *supra* note 35.

⁷⁷ *Id.* at 27-28 (statement of Harry R. Marshall, State Dept.); letter from Ambassador Nicholas Parkinson (Australia) to Sen. Pete Domenici, *reprinted in 1981 Hearing, supra* note 35, at 36-39.

⁷⁸ Act of Jan. 4, 1983, Pub. L. 97-415, § 170B, 96 Stat. 2067, 2081-83 (codified at 42 U.S.C. § 2210b (Supp. V 1987)).

⁷⁹ "The [DOE] shall monitor and for the years 1983 to 1992 report annually to the Congress and to the President a determination of the viability of the domestic uranium mining and milling industry. . . ." *Id.* at § 2210b(a).

⁸⁰ The criteria vaguely defined viability in terms of the capability at a particular time of supply-

the domestic industry was viable,⁸¹ eliminating for the moment any recourse the uranium industry had in section 161(v).

In an effort to lure enrichment business away from less expensive foreign enrichment concerns, the DOE adopted still another contract formulation in 1984. This new contract allowed for reduction, and later elimination, of fixed commitments, provided a price ceiling, and required acceptance of only 70% of the services contracted for by its customers.⁸² The contract also provided for a "variable tails assay" option. This meant that a utility, in obtaining a given quantity of fuel, could elect between two enrichment options. If it desired to supply a greater amount of uranium feed material to the plant, less enrichment would be required to obtain the desired fuel quantity. If a utility instead wished to supply a smaller quantity of uranium feed, more enrichment would be required to derive the same amount of fuel. In the former case, assay of U₂₃₅ remaining in the "tails" (the material depleted in U₂₃₅ remaining after enrichment) would be higher in U₂₃₅ than in the latter, hence the name variable tails assay.⁸³ These new policies and options would yield a more realistic demand for uranium.

The DOE found the uranium industry was nonviable between 1984 and 1986.⁸⁴ In 1986, it initiated a rulemaking to consider revising the enrichment criteria.⁸⁵ The DOE proposed no restrictions on enrichment because it believed that restrictions would not assure viability. It blamed the bad straits of the industry on high domestic production costs and the general collapse of demand rather than import competition.⁸⁶ The criteria adopted featured no restrictions.⁸⁷ The DOE also indicated that restrictions on enrichment would be pointless because of the availability of enrichment services abroad.⁸⁸

ing domestic needs under hypothetical situations. Criteria to Assess Viability of Domestic Mining and Milling Industry, 48 Fed. Reg. 45,746 (1983)(codified at 10 C.F.R. pt. 761 (1988)).

⁸¹ S. REP. NO. 214, 100th Cong., 1st Sess. 9 (1987).

⁸² Montange, *supra* note 44, at 29.

⁸³ See *Western Nuclear, Inc. v. Huffman*, 825 F.2d 1430, 1433 (10th Cir. 1987). Fruit juice is analogous. One can squeeze two oranges a little to obtain the same amount of juice as from a single firmly squeezed orange. The juice remaining in each of the two lightly squeezed oranges would be greater than in the firmly squeezed one. Each of the former would have a higher "juice assay" than the latter.

⁸⁴ S. REP. NO. 214, *supra* note 81, at 9.

⁸⁵ 1986 Proposed Criteria, *supra* note 75.

⁸⁶ *Id.* at 3627.

⁸⁷ Uranium Enrichment Services Criteria, 51 Fed. Reg. 27,132 (codified at 10 C.F.R. pt. 762) [hereinafter 1986 Criteria].

⁸⁸ *Id.* at 27,138.

E. The Producers Resort to the Courts: *Huffman v. Western Nuclear*

1. *The Litigation*

Even before the DOE made the nonviability findings, three uranium mining and milling companies sued the DOE in federal court in Colorado in 1984. The suit challenged the 1984 contract and claimed that the DOE had violated section 161(v) by not imposing enrichment restrictions.⁸⁹ The trial judge voided the contract because the DOE had failed to follow procedures of the Administrative Procedures Act and the AEA,⁹⁰ and enjoined the DOE from enriching any foreign uranium for domestic use.⁹¹

The Tenth Circuit remanded the contract question for findings regarding the nexus between the adoption of the contract and the reduced demand facing the domestic industry.⁹² The court affirmed the restrictions on foreign uranium enrichment but limited its analysis to statutory construction.⁹³ The Supreme Court reversed, principally on the ration-

⁸⁹ *Western Nuclear, Inc. v. Huffman*, No. 84-C-2315 (D. Colo. June 20, 1986), *aff'd*, 825 F.2d 1430 (8th Cir. 1987), *rev'd and remanded*, 486 U.S. 663 (1988). *Western Nuclear, Inc., Energy Fuels Nuclear, Inc. and Uranium Resources, Inc. sued the DOE, then-Energy Secretary Donald C. Hodel, and several DOE officers involved in the enrichment program, including F. Clark Huffman, Chief of the Enrichment Services Branch.*

⁹⁰ Both the AEA, 42 U.S.C. § 2231 (1982) and the DOE Organization Act, 42 U.S.C. § 7191(a)(1)(1982), require DOE compliance with the Administrative Procedures Act ("APA"), 5 U.S.C. §§ 551-559 (1988). Specifically, rulemaking for contracts criteria is subject to notice and comment requirements pursuant to the APA, 5 U.S.C. § 553 and the DOE Organization Act, 42 U.S.C. § 7191(b). The 1964 statute also provides that "[t]he [DOE] shall establish criteria in writing setting forth the terms and conditions under which services provided under this subsection shall be made available Provided, that before the [DOE] establishes such criteria, the proposed criteria shall be submitted to the [JCAE]." 42 U.S.C. § 2201(v). The successors to the JCAE are the Senate Energy and Natural Resources Committee, and the House Committees on Energy and Commerce, and on Interior and Insular Affairs. *See Montange, supra* note 44.

⁹¹ District Judge Jim R. Carrigan's order granting summary judgment for the uranium company plaintiffs required that, commencing January 1, 1987, the DOE could not provide any enrichment services for foreign-origin uranium intended for domestic end use, at least until the "viability of the domestic uranium industry [was] assured." *Western Nuclear, Inc. v. Huffman*, No. 84-C-2315 (D. Colo. June 20, 1986)(order granting summary judgment). The court also ordered rulemaking to establish criteria for providing enrichment services to comply with § 161(v) so that a viable domestic industry could be maintained, including the extent to which services could be made available to enrich foreign-source uranium. *Id.*

⁹² *Western Nuclear*, 825 F.2d at 1434-37. A finding of injury to the domestic industry caused by a preference for foreign uranium built into the new contract might also have affected the restrictions determination.

⁹³ The court found that the phrase "to the extent necessary to assure the maintenance of a viable domestic uranium industry, [the DOE] shall not offer [enrichment services]," only controlled the calculus of the amount of restrictions, not whether to impose restrictions at all. *Western Nuclear*, 825 F.2d at 1438-39 (emphasis in original). The court distinguished *Young v. Community Nutrition Inst.*, 476 U.S. 974 (1986), in which the Supreme Court interpreted a statute which guided the extent to which the presence of a poisonous food additive should be regulated by the Food and Drug

ale that the courts below had rested their holdings on the erroneous assumption that restrictions would always assure the viability of the uranium industry.⁹⁴ The plaintiffs maintained that Congress had made such a policy determination and that the DOE merely disagreed with Congress. The DOE, on the other hand, contended that if no extent of restriction could achieve the statutory goal of viability, then it was not a violation not to impose restrictions, and in fact might be outside of its statutory authority to do so in such circumstances.⁹⁵ The Court agreed with the DOE, at least for the limited purpose of ruling on summary judgment, refusing to adopt the Procrustean logic of the lower courts.⁹⁶ The Court would not force the DOE to create protectionist measures that would not further the statutory goal, particularly when there was a complete lack of guidance as to amount of restrictions necessary. The Court remanded for a determination of whether the DOE nevertheless violated section 161(v) by improperly determining that no amount of restrictions would assure viability.⁹⁷

2. Reaction to the Litigation

The international trade implications of the *Western Nuclear* case were not lost upon the Office of the United States Trade Representatives (“USTR”) nor upon the governments of Canada and Australia. The USTR opposed the district court injunction, claiming that damage to

Administration (“FDA”). The statute in *Young* provided that “the [FDA] shall promulgate regulations limiting the quantity therein or thereon to such extent as he finds necessary for the protection of public health. . . .” 21 U.S.C. § 346 (1982)(emphasis added). The FDA had maintained that the phrase “to such extent” modified the word “shall,” thus giving it discretion to decide if any regulation at all was necessary. The *Young* court found that the phrase could also be read to modify “the quantity therein or thereon.” Since the phrase was therefore ambiguous, the reasonable agency interpretation was entitled to deference (citing *Chevron U.S.A., Inc. v. Natural Resources Defense Council, Inc.*, 467 U.S. 837 (1984)). *Young*, 476 U.S. at 980-81. The *Western Nuclear* court found that the word “shall” in § 161(v) could only mean that restrictions were required and that the modifying phrase “to the extent” unambiguously informed the DOE of the amount of restrictions required. *Western Nuclear*, 825 F.2d at 1438-39. The court further distinguished *Young* because other methods were available to the FDA to protect public health, while the DOE’s only means of maintaining the viability of the uranium industry was through enrichment restrictions. *Id.* at 1439.

⁹⁴ *Huffman v. Western Nuclear, Inc.*, 486 U.S. 663, —, 108 S. Ct. 2087, 2093 (1988).

⁹⁵ *Id.* at —, 108 S. Ct. at 2092.

⁹⁶ *Id.* The Court, however, scolded the DOE in a footnote for not articulating any construction of § 161 (v) prior to the litigation. The Court agreed that the statute was unambiguous and thus it declined to consider how much deference to give the DOE. In light of the manner in which the DOE came upon its interpretation, it would not likely have been very much. *Id.* n.9 (citing *Securities Indus. Ass’n v. Board of Governors*, 468 U.S. 137, 143-44 (1984)(*post hoc* rationalizations for agency actions entitled to little deference)). *Cf. Diver, Statutory Interpretations in the Administrative State*, 133 U. PA. L. REV. 549, 593 (1985)(“courts should presumptively defer to an agency’s interpretation of a statute under which the agency exercises significant policymaking responsibility”).

⁹⁷ *Western Nuclear*, 486 U.S. at —, 108 S. Ct. at 2092-93.

trade relations would result and that the restriction "would be subject to legal challenge under [GATT]."⁹⁸ Australia noted that the restriction would:

disrupt the world market for uranium, erode international confidence in the reliability and predictability of the United States policies affecting international co-operation in the peaceful uses of nuclear energy, and give rise to a major problem in trade relations between our countries in that it will impact adversely and unfairly on Australia's exports of uranium to the U.S.⁹⁹

Following the appellate decision, Australia also charged that the restriction would contravene declarations against protectionism made by the United States at the Uruguay Round GATT negotiations.¹⁰⁰ Canada reiterated Australia's concerns,¹⁰¹ emphasizing that the FTA then being negotiated would be imperiled by the decision.¹⁰²

The mining companies dropped the remanded suit in 1989 in order to devote their resources to legislative efforts. With Canadian uranium treated as domestic under the FTA, they would have had difficulty proving that restricting enrichment of the small remainder of non-Canadian uranium being imported into the United States would restore viability.¹⁰³

With at least the provisional blessing of the Supreme Court, the DOE refused to implement new section 161(v) restrictions.¹⁰⁴ The subse-

⁹⁸ Declaration of Robert Reinstein, Dir. of Energy Trade Policy, United States Trade Representative [hereinafter USTR], June 13, 1986, *reprinted in* Brief of Eldorado Nuclear Ltd., Amok Ltd., Saskatchewan Mining Dev. Corp., Uranerz Exploration & Mining Ltd., and the Gov'ts of the Provinces of Saskatchewan and Ontario as Amici Curiae in Support of Petitioners, at appendix B, *Huffman v. Western Nuclear, Inc.*, 486 U.S. 663 (1988)[hereinafter Canadian Interests Brief].

The fact that restrictions would have had far-ranging effects is reflected in the number of amici taking part in the litigation. In the Tenth Circuit, twenty-five nuclear utilities, the National Taxpayers Union, and the attorneys general of five uranium-producing states filed. Amici at the Supreme Court on the merits included the federal governments of Australia and Canada, Canadian provincial governments and uranium producers, as well as Senators Bingaman, Domenici, Garn, Hatch, Simpson and Wallop.

⁹⁹ Diplomatic Note No. 186/86A (June 27, 1986), *reprinted in* Australia Brief, *supra* note 58, at appendix 1.

¹⁰⁰ Diplomatic Note No. 237/87 (July 24, 1987), *reprinted in* Australia Brief, *supra* note 58, at appendix 2. See *Ministerial Declaration on the Uruguay Round* (Sept. 20, 1986), in CONTRACTING PARTIES TO GATT, BASIC INSTRUMENTS AND SELECTED DOCUMENTS [hereinafter BISD] 19 (33d Supp. 1987).

¹⁰¹ Diplomatic Note No. 194 (July 22, 1987) *reprinted in* Canada Brief, *supra* note 58, at appendix A. See also *Appeals Court Bars Energy Department from Enriching any Foreign Uranium*, 4 Int'l Trade Rep. (BNA) 962-63 (July 29, 1987).

¹⁰² See notes 105-106 and accompanying text.

¹⁰³ *U.S. Miners Formally Drop DOE Lawsuit, Draft Enrichment Bill Expected in House*, NUCLEARFUEL, Feb. 6, 1989, at 2.

¹⁰⁴ The DOE did not achieve a true victory because there was the possibility that further proceedings could have revealed a nexus between restrictions and viability. See *Supreme Court Rules Department of Energy Need not Limit Foreign Uranium Enrichment*, 5 Int'l Trade Rep. (BNA) 917 (Jun. 22, 1988). The DOE was nonetheless relieved because it had \$300 million per year in enrich-

quent enactment of the FTA effectively repealed it with respect to the United States' largest trading partner. The FTA also narrowed the ability of each nation to rely on national security as a pretext for protecting domestic energy industries.

F. The Gutting of Section 161(v): Free Trade with Canada

1. Mechanics of the Agreement

Not only has section 161(v) not been enforced, it no longer applies to the largest foreign supplier of uranium to the United States. The FTA¹⁰⁵ exempts Canada from "any restriction on the enrichment of foreign uranium under Section 161(v)."¹⁰⁶

The FTA generally incorporates the GATT obligation to accord national treatment to goods¹⁰⁷ and attempts to set up a Free Trade Area under Article XXIV.¹⁰⁸ The Agreement also provides strong measures

ment fees at stake and a substantial prior debt to retire. See *Uranium Industry Loses in High Court on Imports*, N.Y. Times, Jun. 16, 1988, at 28, col. 5 (nat'l ed.).

¹⁰⁵ Following two years of negotiations, President Reagan and Prime Minister Mulroney signed the agreement in 1988 to eliminate all barriers to trade between the two countries by the turn of the century. Farnsworth, *Economic Spur Set by U.S. and Canada in New Trade Pact*, N.Y. Times, Oct. 5, 1987, at 1, col. 6 (nat'l ed.); Farnsworth, *Reagan and Mulroney Sign Pact to Cut U.S. - Canada Trade Curbs*, N.Y. Times, Jan. 3, 1988, at 1, col. 2 (nat'l ed.). Congress quickly approved the pact, but it became the dominant issue in the Canadian general election. Russell, *Those Irish Eyes Are Smiling Again: After an Emotional Campaign, Mulroney—And Free Trade with the U.S.—Wins a Resounding Victory*, TIME, Dec. 5, 1988, at 39. The Canadians had felt that their identity and prosperity would be subsumed into those of the United States. See Freeman, *Mulroney's Victory in Canada Bodes Well for its Ties with U.S.*, Wall St. J., Nov. 23, 1988, at 1, col. 6, (midwest ed.)(Canadian opposition to the FTA based on their belief that they are "more charitable, more peaceable and more tolerant. It's hardly hairy-chested nationalism".)

The Canadians approved the pact, and it became effective January 1, 1989. United States-Canada Free Trade Agreement Implementation Act of 1988, Pub. L. No. 100-449 § 101, 102 Stat. 1851, 1852 (codified at 19 U.S.C. § 2112 (1988)) [hereinafter FTA Act]; see also Farnsworth, *Wide Effect Seen From Trade Pact*, N.Y. Times, Jan. 2, 1989 at 21, col. 6 (nat'l ed.).

¹⁰⁶ FTA, *supra* note 22, annex 902.5. Implementing legislation amends § 161(v) so that the phrase "foreign origin" excludes "source or special nuclear material originating in Canada." FTA Act, *supra* note 105, § 305(b), 102 Stat. 1876, 19 U.S.C. § 2112. Canada also agreed to exempt the United States from its policy, adopted in 1985, requiring uranium to be upgraded to the fullest extent possible (to UF₆) within Canada before export. *Canadian Officials Analyze Impact of FTA on Uranium Trade with U.S.*, NUCLEARFUEL, Feb. 8, 1988, at 2. The United States had challenged this policy under GATT. See *supra* note 179 and accompanying text.

¹⁰⁷ FTA, *supra* note 22, arts. 105, 501, 502; GATT, *supra* note 7, art. III.

¹⁰⁸ "[A] free-trade area shall be understood to mean a group of two or more customs territories in which the duties and other restrictive regulations of commerce . . . are eliminated on substantially all the trade between the constituent territories on products originating in such territory." GATT, *supra* note 7, at art. XXIV(8)(b). This arrangement denies most-favored-nation treatment to products of outside countries in violation of GATT articles I and II. Free Trade Areas are permitted, however, if four criteria are met: the purpose is to facilitate trade among the parties, and not to raise barriers to trade with other GATT members; it applies to "substantially all" trade to avoid discriminatory effects; the resulting external barriers are not higher than before; and the parties follow article

to assure that energy trade will remain free,¹⁰⁹ and it places energy trade explicitly under the aegis of GATT.¹¹⁰ Specifically, the parties affirmed their "rights and obligations under [GATT] with respect to prohibitions or restrictions on bilateral trade in energy goods."¹¹¹ "Energy goods" refers to goods classified in the Harmonized Tariff System and includes most forms of uranium.¹¹²

The FTA also contains a narrower general exception for national security than does GATT.¹¹³ The United States and Canada agreed not to cloak measures restricting energy trade under these exceptions. They can now invoke either exception only to the extent necessary to maintain

XXIV procedures for notice and consultation with Contracting Parties, and for negotiation with affected states. RESTATEMENT (THIRD) OF THE FOREIGN RELATIONS LAW OF THE UNITED STATES § 809 comment b (1987)[hereinafter RESTATEMENT OF FOREIGN RELATIONS LAW].

The experience of the United States-Israel Free Trade Area shows blessing by GATT can take some time. See Free Trade Area Agreement Between Israel and the United States, Report of the Working Party adopted 14 May 1987 (L/6140), in BISD, *supra* note 100, at 58 (34th Supp. 1988); see also GATT ACTIVITIES 1987, *supra* note 14, at 83 (concerns by Working Party that agreement broke new ground as it was between countries with no historical trade ties nor geographical proximity, over conformity to GATT, and effect on third parties). If a Free Trade Area did not technically qualify for exception under article XXIV, waivers can be granted for associations of states into regional associations. J. JACKSON, *supra* note 8, at 545-46. The Contracting Parties, by a two-thirds vote, can waive an obligation imposed by GATT "[i]n exceptional circumstances not elsewhere provided for in [GATT]. . ." GATT, *supra* note 7, Art. XXV(5). Since the FTA strongly reaffirms and parallels GATT, it is unlikely that this will be necessary.

¹⁰⁹ FTA, *supra* note 22, ch. 9. See Office of the USTR, Summary of the Agreement (rev. ed. Oct. 8, 1987)(unpublished release)("[f]ree and open energy trade is an essential component of the FTA because it enhances the energy security and increases the industrial competitiveness of both countries. There is a broad agreement to assure the freest possible bilateral trade in energy.")

¹¹⁰ "[FTA] Articles 902, 903, and 904 are border measures that build on the [GATT] The GATT is already applied to energy trade, [it has] for the last 40 years. It's not new. It may be new that we are suddenly paying attention to GATT in the energy area." *U.S. Energy Official Sees Boost in Gas Trade Resulting From U.S.-Canada Trade Agreement*, 5 Int'l Trade Rep. (BNA) 898, 899 (June 15, 1988)(quoting Robert Reinstein, USTR)[hereinafter Reinstein Statement]. The DOE's position on the FTA was that it merely maintained the status quo of "freer" uranium trade. *Energy: Free Trade with Canada: Hearings before the Subcomm. on Energy and Power of the House Comm. on Energy and Commerce*, 100th Cong., 2d Sess. 165-66 (1988)[hereinafter *FTA Energy Hearings*](Statement of William Martin, Deputy Secretary, DOE).

¹¹¹ FTA, *supra* note 22, art. 902(1).

¹¹² *Id.*, art. 901(2). These include uranium ores and concentrates, elemental uranium and its compounds and mixtures, uranium and its compounds enriched and depleted in U₂₃₅, and spent fuel elements. USITC, HARMONIZED TARIFF SCHED. OF THE UNITED STATES subheads. 2612.10, 2844.10-2844.50 (effective Jan. 1, 1989)(USITC Pub. 2030). The FTA also invokes GATT to prohibit price floors on uranium exports or imports except where minimum import price requirements are permitted in enforcing countervailing duty and antidumping orders and undertakings. FTA, *supra* note 22, art. 902.2.

¹¹³ A GATT Contracting Party can take action to protect its "essential security interests," including measures related to "fissionable materials." GATT, *supra* note 7, art. XXI. See *infra* notes 203-208 and accompanying text. The parallel FTA provision omits the fissionable materials exception and adds a consideration regarding non-proliferation. FTA, *supra* note 22, art. 2003.

military supply and fulfill defense contracts, respond to armed conflicts, implement non-proliferation policies, or respond to threats of disruption of nuclear materials supply for defense purposes.¹¹⁴ The FTA exception does not mention or allude to civilian uranium supply situations.¹¹⁵

The FTA further restricts the use of general exceptions contained in GATT articles XI and XX. Article XI prohibits the use of quotas or licenses to restrict imports or exports,¹¹⁶ but allows temporary exceptions for export restrictions to relieve shortages of "products essential to the exporting Contracting Party."¹¹⁷ Article XX contains exceptions allowing measures to conserve "exhaustible natural resources,"¹¹⁸ to limit exports to "ensure essential quantities of . . . materials to a processing industry" under certain conditions,¹¹⁹ and to acquire or distribute products in short supply.¹²⁰ The FTA permits application of these restrictions to energy goods trade only if it will not reduce total proportional exports of the good, the United States and Canada do not charge a higher export price than domestic, and supply channels are not disrupted.¹²¹

The FTA mirrors GATT article XXIII¹²² in providing avenues for dispute resolution when measures, whether or not in conflict with the FTA, cause "nullification and impairment of any benefit reasonably expected to accrue" to a party.¹²³ In addition, if a party perceives that an "energy regulatory action" would result in "discrimination against its energy goods,"¹²⁴ it can initiate consultations with the other party.¹²⁵ The United States and Canada must also consult to avoid market distortions if either party restricts imports of energy goods from third countries.¹²⁶

¹¹⁴ FTA, *supra* note 22, art. 907.

¹¹⁵ The USTR negotiator for the energy section of the FTA stated that article 907 narrows the circumstances by which Canada or the United States can cite national security to justify limiting energy trade to critical defense needs, or to carrying out nuclear non-proliferation programs. Reinstejn Statement, *supra* note 110.

¹¹⁶ GATT, *supra* note 7, art. XI(1). See *infra* notes 191-95 and accompanying text.

¹¹⁷ GATT, *supra* note 7, art. XI(2)(a).

¹¹⁸ *Id.* art. XX(g).

¹¹⁹ *Id.* art. XX(i).

¹²⁰ *Id.* art. XX(j).

¹²¹ FTA, *supra* note 22, art. 904.

¹²² GATT, *supra* note 7, art. XXIII. See *infra* note 175.

¹²³ FTA, *supra* note 22, art. 2011. Procedures include consultations (art. 1804), and dispute settlement procedures (arts. 1805, 1807), or consent arbitration (art. 1806).

¹²⁴ FTA, *supra* note 22, art. 905.

¹²⁵ *Id.*

¹²⁶ *Id.* art. 902(4).

2. *Miners' Response*

The uranium producers felt singled out for unfair treatment under the FTA,¹²⁷ and urged its rejection.¹²⁸ Industry attempts to modify the FTA were limited by the fast-track process governing ratification of executive negotiated trade agreements.¹²⁹ The complaints centered around claims that the Canadian government subsidized exploration, production, and upgrading of uranium,¹³⁰ and tolerated dumping into the U.S. market.¹³¹ The USTR's office weakly countered that negotiations would proceed in the next five to seven years to achieve better "discipline" in this area, and that remedies under existing countervailing duty law might still be utilized.¹³² The USTR also pointed out that the uranium industry still qualified for "escape clause" protection under section 201 of the Trade Act of 1974.¹³³ One Senator complained that the FTA "wiped

¹²⁷ *U.S. Non-Ferrous Metals Producers, Uranium Producers, Oppose Free Trade Agreement*, 5 Int'l Trade Rep. (BNA) 73-74 (Jan. 20, 1988).

¹²⁸ *Proposed U.S.-Canada Free Trade Agreement on Domestic Mining and Natural Resources: Oversight Hearing before the Subcomm. on Mining and Natural Resources of the House Comm. on Interior and Insular Affairs*, 100th Cong., 2d Sess. 52, 59 (1988)(statement of John Adams, Board Chairman, Energy Fuels Corp.)[hereinafter *FTA Oversight Hearing*](“I appear before you today to urge that the FTA with Canada be rejected . . . [Uranium] was one of those giveaways by the U.S. negotiators.”) Senator Simpson agreed, but was also pragmatic, stating that because Wyoming's uranium industry was already dormant, ratification of the FTA would be like “shooting a corpse.” *Time Running Short on Trade Agreement; U.S. Approval Needed Before October*, NUCLEARFUEL, Jan. 25, 1988, at 8.

¹²⁹ *Official Says Uranium Industry Plan to Amend U.S.-Canada Accord Will Fail*, Daily Rep. for Execs. (BNA)(Jan. 29, 1988). This limitation provides the executive real negotiating authority with trade partners. Office of the USTR, *Background on Free Trade Areas* (Oct. 4, 1987)(press release).

¹³⁰ See *FTA Oversight Hearing*, *supra* note 128 at 246-47, 249-51 (statement of John Adams, Energy Fuels Corp.).

¹³¹ One senator complained that delivery prices for Canadian utilities varied between \$50 and \$80 per pound, but were dumped at below production cost at \$15 to \$20 per pound in the United States. *FTA Energy Hearings*, *supra* note 110, at 208 (statement of Sen. Nielson).

¹³² See Letter from Ambassador Clayton Yeutter (USTR) to Sen. Alan Simpson (April 19, 1988)[hereinafter *Yeutter-Simpson Letter*], reprinted in *Implementation of the United States-Canada Free Trade Agreement and the Potential Impacts on Energy and Natural Resource Industries: Hearings before the Senate Comm. on Energy and Natural Resources*, 100th Cong., 2d Sess. 120-21 (1988)[hereinafter *FTA Implementation Hearings*]. See GATT, Agreement on Interpretation and Application of Articles VI, XVI and XXIII of the General Agreement on Tariffs and Trade, done Apr. 12, 1979, 31 U.S.T. 513, T.I.A.S. No. 9619, (Subsidies Code). Countervailing duty law for U.S. imports from GATT signatory countries is governed by 19 U.S.C. §§ 1671-1671(h) (1988). Dumping is proscribed by the GATT Anti-Dumping Code, which implements article VI. Agreement on the Implementation of Article VI of the General Agreement on Tariffs and Trade, done Apr. 12, 1979, 31 U.S.T. 4919, T.I.A.S. No. 9650. See 19 U.S.C. 1673-77(k) (1988). See also *infra* notes 171-73 and accompanying text.

¹³³ *FTA Implementation Hearings*, *supra* note 132, at 13 (statement of Clayton Yeutter, Ambassador, USTR); Trade Act of 1974, Pub. L. No. 93-613, §§ 201-03, 88 Stat. 1978, 2011-2018 (1975) (codified as amended at 19 U.S.C. §§ 2251-54 (1988)). This clause provides that under certain circumstances, the International Trade Commission (“ITC”) will investigate whether an increase in

out" section 161(v).¹³⁴

3. Implications

Prior section 161(v) restrictions created a two-tiered uranium price structure, with artificially inflated prices in the United States, and an oversupply elsewhere that depressed prices. These and other market distortions ultimately turned out to be disastrous for the domestic uranium industry. However, because Canadian uranium is treated as domestic under the FTA, this two-tiered pricing system is largely avoided, even in the unlikely event section 161(v) restrictions are reinstated.¹³⁵

It is unclear to what extent the FTA will affect the uranium market because it largely preserves the status quo.¹³⁶ Even so, it is clear that the FTA virtually eviscerated section 161(v). It no longer applies to Canada, by far the largest supplier to the United States, and it is thus highly unlikely that the domestic uranium industry could offer any proof in a litigation or administrative proceeding that enrichment restrictions against the remaining producer countries would make a whit of difference to its

fair imports is a "substantial cause" of threatened or actual injury to domestic producers. Upon a positive finding, the President must, with some discretion, provide for protective relief (e.g., tariffs or quotas) or adjustment assistance to workers, firms, and communities. 19 U.S.C. § 2253 (1988). See also R. FOLSOM, M. GORDON, & J. SPANOGLE, *INTERNATIONAL BUSINESS TRANSACTIONS* 275-76 (3d ed. 1988). Consultation should occur with affected GATT members prior to imposition of § 201 action. Similarly, GATT article XIX enables a party to suspend most-favored-nation treatment and tariff concessions upon an injury finding. GATT, *supra* note 7, art. XIX. Such actions are to be taken only in an unforeseen emergency and only as long as necessary to meet the emergency. RE-STATEMENT OF FOREIGN RELATIONS LAW, *supra* note 108, at § 808 comment a. Affected countries compensate by suspending equivalent concessions or obligations. GATT, *supra* note 7, art. XIX(3). See also *U.S. Under No GATT Obligation to Enrich Non-U.S. U for Domestic Use*, 10 Int'l Trade Rep. (BNA) 3 (Sept. 9, 1985).

The uranium industry has never attempted such relief, possibly because it has been urged to rely on § 161(v) instead. 134 CONG. REC. S3326 (daily ed. Mar. 30, 1988)(statement of Sen. Wallop). The USTR has also advised against such an action because it felt that the ITC would likely find reduced demand, rather than imports, was the major problem. The USTR also believed that the ITC would find that industry problems were long-term because of the comparative advantage of the exporters and thus the short-term relief authorized under § 201 would not revitalize the industry. Letter from Ambassador Clayton Yeutter (USTR) to John Herrington (Sec'y, DOE)(Dec. 26, 1985), *reprinted in* 134 CONG. REC. S3334-35 [hereinafter Yeutter-Herrington Letter]. A § 201 investigation is also tied to the uranium industry through § 170B of the AEA, although initiation of such investigation is discretionary with the DOE. 42 U.S.C. § 2210(b)(d). See *infra* notes 140-44 and accompanying text.

¹³⁴ *FTA Implementation Hearings*, *supra* note 132, at 106 (statement of Sen. Domenici).

¹³⁵ Gooding, *Uranium—the Most Political Energy Resource*, *Fin. Times*, Nov. 10, 1988, at 40, col. 2 [hereinafter Gooding].

¹³⁶ Canada has interpreted the FTA's UF₆ upgrade exception for the United States to include uranium refined and converted for use in the United States, or uranium refined, converted, and enriched in the United States for reexport. See *Canadian Government Interprets Uranium Upgrading Policy Exception in FTA*, *NUCLEARFUEL*, Jan. 9, 1989, at 4.

viability.¹³⁷

G. Recent Efforts to Aid the Uranium Industry

Legislative campaigns to reimpose limitations on enrichment or use of foreign uranium were mounted even as the section 161(v) restrictions were being phased out in the early 1980s.¹³⁸ These measures met with stiff resistance from the executive branch, which cited GATT and other trade norms in opposition.¹³⁹ Supporters of the uranium industry in the Senate continue to propose protectionist legislation, but the House and the Executive branch continue to oppose them, especially now because of the FTA.

1. AEA Section 170B and National Security Investigations

The 1983 addition of section 170B to the AEA of 1954¹⁴⁰ mandated a national security investigation under section 232 of the Trade Expansion Act of 1962¹⁴¹ under certain import conditions.¹⁴² Section 232 protection has been available since 1962, but section 170B added an automatic trigger provision for the uranium industry.¹⁴³ A study was triggered in late 1988, but section 170B only requires such a study; it

¹³⁷ One producer explained: "We can't make the factual record on viability if 30 million pounds of Canadian uranium starts coming into the U.S. . . . If you have all this stuff coming in, then you can't say that restricting imports of Australian uranium is going to make you viable." *Confirmation of FTA Expected by Year-End as Canadians Re-Elect Conservative Gov't.*, NUCLEARFUEL, Nov. 28, 1988, at 1. In addition, Canada could merely step up production shielded by the FTA to compensate for restrictions on imports from other countries.

¹³⁸ See *DOE Sees Stability of World Uranium Market Enhanced by Risk to Domestic Industry*, NUCLEARFUEL, Aug. 31, 1981, at 8. A 1981 DOE report weighed options to control uranium imports, if necessary in the future, including postponing the relaxation of enrichment restrictions, setting import ceilings, negotiating voluntary export restraints with foreign producers, imposing tariffs to equalize production costs, increasing tails assay requirements to boost demand, creating buffer stocks, and reestablishing a government purchase program. *Id.* See also *Embargo Jibes with GATT, Proponents Say*, NUCLEARFUEL, June 7, 1982, at 14 [hereinafter *Embargo Jibes*].

¹³⁹ See, e.g., *Uranium Import Quota Proposals Face Continued State Department Hostility*, NUCLEARFUEL, Oct. 10, 1983, at 6. Carlton Stoiber, Director of the State Department Office of Nuclear Export and Import Control, stated: "We strongly believe that the national interest—properly assessed—would best be served by a world uranium market which is not significantly constrained by the domestic laws of any producer or consumer nation." *Id.*

¹⁴⁰ See *supra* note 78 and accompanying text.

¹⁴¹ Trade Expansion Act of 1962, Pub. L. No. 87-794, § 232, 76 Stat. 872, 877 (codified as amended at 19 U.S.C. § 1802 (1988)).

¹⁴² The statute requires that if executed contracts or options exceed 37.5% of actual or projected domestic requirements for two consecutive years, the DOE must request the Commerce Department to determine the effects on national security. 42 U.S.C. § 2210b(e)(1) (Supp. 1988).

¹⁴³ The DOE can also request the Commerce Department to initiate a section 232 investigation if the DOE itself determines that imports "may threaten to impair the national security." *Id.*

does not mandate import restrictions.¹⁴⁴

Generally, section 232 empowers the president to “adjust” imports of an article if the Commerce Department finds it is being “imported into the United States in such quantities or under such circumstances as to threaten to impair national security.”¹⁴⁵ One commentator, after examining the statutory language, history, and application, has concluded that section 232 “is designed to limit imports of critical defense materials especially in order to protect the domestic production base or to protect against an embargo by an important foreign supplier.”¹⁴⁶ This formulation of section 232 seemingly would apply to uranium.

In practice, however, only the domestic oil industry has ever received section 232 protection.¹⁴⁷ The statute has never been applied to protect the uranium industry or any other industry producing a commodity or product like uranium.¹⁴⁸ An oil industry coalition in 1987 requested another section 232 investigation, voicing concerns similar to those voiced by the uranium industry.¹⁴⁹ Although the Commerce De-

¹⁴⁴ The DOE found that imports constituted 43.8% of domestic requirements in 1986 and 51.1% in 1987, and requested an investigation. The president of the Uranium Producers Association believed that “this study will highlight the risks involved in letting one or two foreign governments, however friendly, dominate the domestic uranium market.” See *Herrington Says U Industry Non-viable, Calls for National Security Study*, NUCLEARFUEL, Jan. 9, 1989, at 13 [hereinafter *Herrington Says*]. Criteria to be evaluated pursuant to 15 C.F.R. § 705.4 (1988) include the quantity and circumstances of importation, the domestic production and capacity needed to meet national security needs, the availability of labor and capital, the impact of foreign competition on economic welfare, and the impact of imports on the strength of the industry to meet security requirements. Initiation of National Security Investigation of Imports of Uranium, 54 Fed. Reg. 8225 (Feb. 27, 1989).

¹⁴⁵ 19 U.S.C. § 1862(b) (1988). Any interested party can initiate an investigation, which must be performed in consultation with the Secretary of Defense. The President can decide not to impose restrictions if he finds that there is no threat to security. *Id.* § 1862(c).

¹⁴⁶ Carter, *International Economic Sanctions: Improving the Haphazard U.S. Legal Regime*, 75 CALIF. L. REV. 1159, 1200-02 (1987).

¹⁴⁷ Oil was first protected in 1958 by a predecessor statute to § 232 via an import quota system. With world prices at below \$2 per barrel and the domestic price at \$3 per barrel, the oil industry argued that imports would force the U.S. price down, rendering costly wells unprofitable and inhibiting development of reserves. The United States would thus become more dependent on imports and vulnerable to supply disruptions. G. HUFBAUER, D. BERLINER & K. ELLIOT, *TRADE PROTECTION IN THE UNITED STATES: 31 CASE STUDIES* 345 (1986). Subsequent administrations have limited oil imports via § 232 for varying economic and political reasons. See *Federal Energy Admin. v. Algonquin SNG., Inc.*, 426 U.S. 548 (1976) (upholding license fees imposed under Presidents Nixon and Ford). The case did not define the proper uses of the statute, however. Carter, *supra* note 146, at 1201 n.157.

¹⁴⁸ Section 232 investigations into the threat to security from imports of commodities such as chromium, manganese, and silicon ferroalloys have been unavailing for these industries. See Carter, *supra* note 146, at 1201 n.157.

¹⁴⁹ “The possibility of our oil supplies quickly drying up in a conflict at the same time that the country’s domestic industry is rapidly pulling back, with operating wells being capped and relatively little exploration and new drilling should scare the daylighters out of serious national security planners.” *Oil Industry Group Asks Commerce to Probe When Imports Are Threat to U.S. Security*, 4

partment found a threat to national security,¹⁵⁰ neither the Secretary of Commerce nor the President recommended that imports be restricted, arguing that it would not be cost effective,¹⁵¹ and it would in the long run actually impair national security.¹⁵²

The same analysis applies to the uranium industry. Prior overregulation, protectionism, and reliance on long-term contracts instead of spot markets,¹⁵³ have distorted both the uranium and petroleum markets and resulted in overinvestment and overproduction. Both industries are adjusting to a market driven by international supply and demand, and it does not appear in either case that the national security of the United States is threatened by import penetration.¹⁵⁴

Neither the uranium industry nor its allies in the Senate have initiated a section 232 investigation.¹⁵⁵ The USTR had claimed that section 232 was not applicable because “[u]ranium for military uses is not an issue here, but only uranium for commercial electric generation. The

Int'l Trade Rep. (BNA) 1494 (Dec. 2, 1987). Oil imports recently exceeded domestic output for the first time in a decade. Wald, *Oil Imports in January Topped Output in U.S.*, N.Y. Times, Feb. 16, 1989, at 25, col. 4 (nat'l ed.).

¹⁵⁰ Presidential Decision; Petroleum Section 232 National Security-Import Investigation 54 Fed. Reg. 6556-57 (Feb. 13, 1989). The Commerce Department found that while energy security had improved since the last study, it was still concerned with supply disruptions caused by declining domestic production, rising imports, and growing dependence on insecure foreign sources. The report concluded that since oil access was “essential to our economic security, foreign policy flexibility and defense preparedness,” a threat to national security existed. *Id.* at 6558. However, the Department found that the United States could meet its “defense requirements and essential industrial and civilian needs in a major conventional war” from domestic production, reserves and reliable imports.” *Id.* A study by the National Petroleum Council also concluded that the United States could withstand a “sudden and sustained loss of oil imports” without shortages, although prices would rise. See *Cutoff of Oil Imports Studied*, N.Y. Times, Mar. 20, 1989, at 31, col. 5 (nat'l ed.).

¹⁵¹ Section 232 recognizes the “close relation of the economic welfare of the Nation to our national security. . . .” 19 U.S.C. § 1862(c). The Commerce Department feared that oil import restrictions would raise the price of oil, allowing a small temporary increase in domestic production, but also increasing costs with severe adverse competitive impact. 54 Fed. Reg. at 6559. It was estimated that a \$10 per barrel import fee would result in an overall loss to the economy of \$150 billion to \$200 billion from 1988 to 1995. *Id.* (citing DOE, ENERGY SECURITY (1987)). See also Bradley, *There's No Energy Crisis Brewing*, N.Y. Times, Feb. 8, 1989, at 23, col. 2 (nat'l ed.) (market-driven oil market less prone to dislocation) [hereinafter Bradley].

¹⁵² 54 Fed. Reg. at 6559. The Commerce Department found that since the last section 232 investigation in 1979, U.S. energy security had improved as a result of price decontrol, filling of the strategic reserve, and drawdown agreements with foreign allies. Government programs stimulating oil production and the FTA were also cited. *Id.* at 6558.

¹⁵³ See Bradley, *supra* note 151 (“a vast spot market and oil trading network have replaced the rigid long term contract market of the 1970s”). Long-term contracts also governed uranium supply in the 1970s. See *supra* notes 60-64.

¹⁵⁴ Since the enactment of § 161(v) the Executive Branch has favored unconstrained uranium imports, and thus a positive finding might not result in import limitations. *FTA Energy Hearings supra*, note 110, at 203 (statement of Robert Reinstein, USTR). See note 189, *infra*.

¹⁵⁵ 134 CONG. REC. S3329 (daily ed. Mar. 30, 1988) (Statement of Sen. Packwood).

principal source of imports is Canada, an immediate neighbor and a long time stable ally.”¹⁵⁶ As Professor Jackson has pointed out, “[t]he overall U.S. trade policy in which Section 232 finds its place is and has been to promote national security by expanding world trade.”¹⁵⁷

2. More Recent Attempts and the Subsidy Issue

The focus of efforts to aid the uranium industry is likely to shift from forms of protection to subsidies. Senate bill 2097, an example of the former, would have replaced section 161(v) restrictions with sliding scale charges based on the percentage of foreign uranium included in new fuel assemblies loaded in all reactors of a single nuclear licensee.¹⁵⁸ The import use penalties of the bill came under attack from other legislators,¹⁵⁹ the USTR,¹⁶⁰ and the press¹⁶¹ as violating the FTA. The Bill passed the Senate,¹⁶² but died at the adjournment of the 100th Congress.

This resistance led the Reagan Administration, and the uranium industry and their proponents in the Senate, to strike a compromise.¹⁶³

¹⁵⁶ Yeutter-Herrington Letter, *supra* note 133.

¹⁵⁷ J. JACKSON, LEGAL PROBLEMS OF INTERNATIONAL ECONOMIC RELATIONS 948 (1977)[hereinafter J. JACKSON, CASEBOOK].

¹⁵⁸ Up to 37.5% foreign uranium could be utilized without charge, with hefty charges of \$ 200 to \$ 500 per kilogram assessed for greater amounts. S. 2097, 100th Cong., 2d Sess., §§ 110, 112, 113 (1988). Prior embodiments of the Uranium Revitalization, Tailings Reclamation and Enrichment Act of 1987 featured other forms of protection. See, e.g., S. 1100, 100th Cong., 1st Sess. (1987)(voluntary restraint agreement with foreign uranium producers to assure 50% domestic uranium contained in aggregate of new fuel assemblies loaded in all domestic civilian power reactors).

¹⁵⁹ Senators Evans and Bradley led a narrowly defeated attempt to excise the “crushing tariff” from the bill, claiming that it would violate “absolutely the most fundamental spirit of the [FTA].” 134 CONG. REC. S3327 (daily ed. Mar. 30, 1988) (statement of Sen. Evans). The remaining titles addressed uranium mill tailings cleanup and the fate of the money losing DOE enrichment program through creation of a government owned enrichment enterprise. The GAO estimated unrecovered costs at nine billion dollars, although the exact amount has generated a good deal of controversy. GAO REPORT, *supra* note 31, at 17. Since § 161(v) requires full cost recovery for enrichment services, the DOE may face further legal challenges.

¹⁶⁰ Robert Reinstein of the Office of the USTR noted that the import limitations would violate chapter five of the FTA, which incorporated the GATT prohibition against national treatment. See *FTA Implementation Hearings*, *supra* note 132, at 129 (statement of Robert Reinstein, USTR). The sliding charges can be viewed as a differential tax on foreign goods which “shall not be subject . . . to internal taxes or other internal charges in excess of those applied . . . to like domestic products.” GATT, *supra* note 7, art. III(2). See J. JACKSON, *supra* note 8, at 279-80.

¹⁶¹ A New York Times editorial cast doubt upon whether “so flimsy a pretext” as national security could justify protecting an industry merely suffering from low demand. Editorial, *Why Protect Uranium*, N.Y. Times, Mar. 14, 1988, at 18, col. 1 (nat'l ed.).

¹⁶² *Senate Votes to Aid Uranium Industry*, N.Y. Times, April 1, 1988, at 8, col. 4 (nat'l ed.).

¹⁶³ *Western Senators Pushing for U Bill Apart from FTA as Miners Eye Court* NUCLEARFUEL, Aug. 22, 1988, at 8 [hereinafter *Western Senators Pushing*]; *U.S. Miners Expected to Drop DOE Suit if New Canadian government Okay's FTA*, NUCLEARFUEL Oct. 31, 1988 at 6 [hereinafter *U.S. Miners Expected to Drop DOE Suit*].

The resulting proposed legislation replaced the stiff tariffs of Senate bill 2097 with a government purchase program, in which a "Uranium Revitalization Fund" would be established to purchase \$750 million of domestic uranium over five years. The bill also provides a billion dollars for uranium mill tailings cleanup.¹⁶⁴ Since both the utilities and the DOE already maintained significant uranium stockpiles, the additional uranium from the purchase program would be used to "overfeed" the enrichment process. This would waste a great deal of feed uranium even though it would result in significant, but not fully offsetting, electrical power cost savings in the enrichment process.¹⁶⁵ Also, AEA sections 161(v) and 170B would be repealed, resulting in "free market conditions" for uranium by 1995.¹⁶⁶

It was hoped that the compromise would assist the uranium industry and "not violate the spirit of GATT or the letter of the [FTA]."¹⁶⁷ While such legislation might not be trade restrictive, the difference between the value of uranium overfed and the electrical cost savings, as well as the money saved by the industry in using government mill tailings cleanup funds instead of its own, would amount to subsidies. These can be problematic with GATT¹⁶⁸ and would create an inconsistency with the U.S. position as it tries to negotiate the reduction of Canadian uranium subsidies under the auspices of the FTA.¹⁶⁹ There were accusations of trying to sneak the legislation through the House, and so the bill was sent back through the hearing process, effectively killing it for the 100th Congress.¹⁷⁰

Government involvement might be considered the Achilles' heel of the goal of open trade in civilian-use uranium, because governments of all uranium producing countries,¹⁷¹ including the United States,¹⁷² inter-

¹⁶⁴ See *Summary of Uranium Package for the United States-Canada Free Trade Agreement and Comparison to S. 2097*, reprinted in 134 CONG. REC. S11,088 (daily ed. Aug. 8, 1988)[hereinafter *Summary of Uranium Package*]. The sponsors attached the language to the Nuclear Regulation Reorganization and Reform Act, S. 2443, 100th Cong., 2d Sess. (1988), leaving the tailings reclamation and government enrichment corporation programs of S. 2097 intact. The uranium purchases would be financed by \$300 million from the mining industry itself, \$450 million from the new government enrichment corporation, and one billion dollars from the utilities, charged at \$72 per kilogram for new uranium regardless of origin. *Id.*

¹⁶⁵ See *Power Savings from Overfeeding*, reprinted in 134 Cong. Rec. S11,081 (daily ed. Aug. 8, 1988).

¹⁶⁶ See *Summary of Uranium Package*, *supra* note 164, at S.11,088.

¹⁶⁷ 134 CONG. REC. S11,077 (daily ed. Aug. 8, 1988) (statement of Sen. Domenici).

¹⁶⁸ GATT, *supra* note 7, at art. III(8); J. JACKSON, *supra* note 8, at 365-68.

¹⁶⁹ See Yeutter-Simpson Letter, *supra* note 132.

¹⁷⁰ Franklin, *U.S. Aid to Uranium Mining Meets Political Resistance*, N.Y. Times, Aug. 22, 1988, at 21, col. 1 (nat'l ed.).

¹⁷¹ The miners have alleged that the federal and provincial governments in Canada, for instance,

vene in uranium production activities. Neither the producers nor the United States government have filed a countervailing duty petition because of a perception that it would be unavailing and because of the existence of the section 161(v) protective measures.¹⁷³ Free market arguments can apply only when vestigial government involvement, which is unrelated to safety and nonproliferation, is reduced.

Legislation assisting the uranium industry has already been introduced in the 101st Congress.¹⁷⁴ It is unlikely, however, that a blatantly protectionist bill will pass this session, because it cannot apply to Canadian uranium, and it is doubtful that Congress would place the entire restrictive burden on essentially a single country, especially as close an ally as Australia. Such legislation might also expose the United States to sanctions provided under the GATT dispute resolution procedure.¹⁷⁵

have ownership and investment interests and participate in such activities as debt write-offs, loan guarantees and long-term government purchase contracts at well above spot prices. *FTA Oversight Hearings*, *supra* note 128 at 249-51 (statement of John Adams, Energy Fuels Corp.). Canadian producers have responded that the governments intended to privatize production facilities, that government ownership was not *per se* a subsidy, that forgiven loans were eventually paid back, and that the long-term purchase contracts did not benefit exporters. See *Canadian U Producers Response to Unfair Trade Practice Claims*, NUCLEARFUEL, June 13, 1988, at 5. For the uranium industry's reply, see *Uranium Producers of America—A Response to Canadian Arguments Against Legislation to Maintain a Domestic Uranium Industry*, reprinted in 134 CONG. REC. S3333-34 (daily ed. Mar. 30, 1988). See also Owen, *Mixed Fortunes Delay Cameco Flotation Plans*, *Fin. Times*, Mar. 3, 1989, at 24, col. 6 (privatization of world's largest uranium company, created by merger of two Canadian government-owned firms and accounting for 16% of world output and 15-20% of U.S. supply, likely to be delayed by weak spot market).

¹⁷² The USTR noted that the U.S. government owned the enrichment operation and participated in as many equivalent areas as the Canadian government. See USTR, *Government Role in the Uranium Industry*, reprinted in *FTA Implementation Hearings*, *supra* note 132, at 122-23.

¹⁷³ 134 CONG. REC. S3326 (daily ed. Mar. 30, 1988) (statement of Sen. Wallop). Producers testified that countervailing duty and antidumping laws in the United States were too narrowly drawn to provide relief, and thus they had relied on § 161(v) instead. *FTA Oversight Hearings*, *supra*, note 128, at 54 (statement of John Adams, Energy Fuels Corp.). The USTR's office said that the government would not initiate a countervailing duty investigation because it would not be "effective or appropriate." Yeutter-Herrington Letter, *supra* note 133. The FTA itself calls for a binational panel to review final antidumping and countervailing duty determinations by the administrative agencies of the respective countries when imports of the other country are at issue. FTA, *supra* note 22, at art. 1904.1. In the United States, an agency of the Department of Commerce makes subsidy and dumping determinations, and the ITC decides whether these have resulted in injury. There may be a question of the constitutionality of allowing non-Article III judges to rule on a case, and whether the panel system is inconsistent with the Article II appointments clause. See Baker & Battram, *The Canada-United States Free Trade Agreement*, 23 INT'L LAW. 37, 77-80 (1989).

¹⁷⁴ See, e.g., *Ford Introduces SWU Bill in Senate, Amendments to Add Industry Relief*, NUCLEARFUEL, Feb. 20, 1989, at 5. The provisions of the 1988 compromise are featured in one such attempt. See 135 CONG. REC. S3159 (daily ed. Mar. 17, 1989).

¹⁷⁵ Though there is no sharply defined dispute resolution process, about thirty provisions appear throughout GATT. See J. JACKSON, *supra* note 8, at 164-66. Two major procedures are described in articles XXII and XXIII. The first sets up a two-step process in which each Contracting Party must first "afford adequate opportunity for consultation" with any other party. GATT, *supra* note

The current session will thus probably yield only mill tailings and government enrichment corporation legislation, with the possibility of some form of subsidy.¹⁷⁶ However, the senators representing mining states have shown their resourcefulness in the past and are likely to continue their attempts in future sessions to get a protective formulation past the House, with the resulting collision with the GATT goal of nondiscriminatory trade.¹⁷⁷ It is with this in mind that we next examine provisions of GATT applicable to past enrichment restrictions, and which might come into play with future restrictive laws.

III. GATT AND RESTRICTIONS ON URANIUM TRADE

In 1988, the United States raised its commitment to abide by GATT in formulating trade policies and to extend GATT's coverage to additional products.¹⁷⁸ Prior to the passage of the FTA, the United States considered trade in uranium products to be controlled by GATT for its own ends, because the United States challenged Canada's uranium upgrading policy under article XI.¹⁷⁹ The United States, upon execution of

7, art. XXII. If this fails to bring a satisfactory result, the dispute can be referred to the Contracting Parties for joint consultation. Under article XXIII, a party can approach other parties concerned if either a GATT benefit has been "nullified or impaired," or the attainment of any objective of GATT is being impeded by any of the following: a "failure of another contracting party to carry out its obligations" under GATT; the application of a measure "whether or not it conflicts with the provisions" of GATT, or "any other situation." GATT, *supra* note 7, art. XXII(1). This article is thus triggered not only for direct GATT violations, but also for any other action that interferes with the goals of GATT. This wide net is limited by the requirement of a showing of actual injury. J. JACKSON, *supra* note 8, at 178-82. If the parties are unable to come to terms, the matter can be referred to the Contracting Parties, who then must investigate, make recommendations or rulings, and authorize, if necessary, remedial suspension of concessions. GATT, *supra* note 7, art. XXIII(2). See deKieffer, *GATT Dispute Settlements: A New Beginning in International and U.S. Trade Law*, 2 NW. J. INT'L LAW & BUS. 317 (1980).

¹⁷⁶ See *U. S. Miners Expected to Drop DOE Suit*, *supra*, note 163.

¹⁷⁷ *Senate Uranium Measure Goes to House; Vote Could be Omen for U.S.-Canada Pact*, NUCLEARFUEL, April 18, 1988, at 2.

¹⁷⁸ "The principle negotiating objectives of the United States regarding the improvement of GATT . . . are- A) to enhance the status of GATT; B) to improve the operation and extend the coverage of the GATT . . . to products, sectors and conditions of trade not adequately covered." Omnibus Trade and Competitiveness Act of 1988, Pub. L. 100-418, § 1101(b)(2)(A)(B), 102 Stat. 1107, 1121 (codified at 19 U.S.C. § 2901(b)(2)(A)(B) (1988)) (emphasis added).

¹⁷⁹ Prior to the FTA, Canada required that uranium be upgraded to the greatest extent possible prior to export, and Canada had the capability to upgrade to UF₆. GATT, *Canada-Restrictions on Exports of Unprocessed Uranium*, (L/6104)(Dec. 12, 1986.) The United States believed that this amounted to an export restriction in violation of article XI of GATT, "nullifying or impairing" its benefits, and requested consultation under the GATT dispute resolution process. *Id.* Canada had utilized the policy to maintain pressure on the United States in light of the *Western Nuclear* litigation, the continued existence of § 161(v), efforts by Congress to pass new restrictions on uranium trade, and as part of its push for free energy trade in the FTA. *U.S. Files Formal GATT Protest Over Canada's Upgrading Policy*, NUCLEARFUEL, Jan. 12, 1987 at 1.

the United States-Canada FTA, began an era in which it acknowledged that trade in uranium products destined for use in civilian nuclear reactors is controlled by GATT for Canada as well.¹⁸⁰ Even without the FTA, this section argues that GATT controls all multilateral trade in civilian-use uranium by its own terms.¹⁸¹

A. Relevant Operational Provisions

1. National Treatment: GATT Article III

Article III prohibits a government¹⁸² from utilizing taxation¹⁸³ or regulation to favor domestic production.¹⁸⁴ It instead requires a country to provide “national treatment,” that is, imported products must be “accorded treatment no less favourable than that accorded to like products of national origin.”¹⁸⁵

The uranium enrichment criteria, until 1984, served to limit the

¹⁸⁰ Since Canada and domestic sources supply the vast majority of the U.S. civilian needs, virtually all commerce in civilian use uranium is under GATT control by operation of the FTA. See *supra* note 110.

¹⁸¹ Arguments can be made that § 161(v) or other restrictive statutes should supercede GATT, since a constitutional statute passed later in time trumps an earlier conflicting international treaty. See Canada Brief, *supra* note 58, at 9; Australia Brief, *supra* note 58, at 5-6. Construction of such statutes, however, should be made to harmonize the two. RESTATEMENT OF FOREIGN RELATIONS LAW, *supra* note 108, at § 114. The later act supersedes the treaty if the intent to supersede was clear, or if the earlier rule “cannot be fairly reconciled.” *Id.* at § 115(1)(a). It is, however, “generally assumed that Congress does not intend to repudiate an international obligation” such as GATT “by making it impossible . . . to carry out its obligations.” *Id.* at § 115(1)(a), comment a. Congress expressly stated that section 161(v) was consistent with GATT, although such an *ipse dixit* does not make it so. See 1964 REPORT, *supra* note 17, at 3121. See *supra* notes 50-53 and accompanying text.

¹⁸² Because GATT is an agreement among sovereigns, it affects only matters under governmental control. J. JACKSON, *supra* note 8, at 273, 289-90.

¹⁸³ GATT, *supra* note 7, at art. III(2). For example, the Superfund Amendments and Reauthorization Act of 1986, Pub. L. 99-499, 100 Stat. 1613 (Oct. 17, 1986), included a tax which created a greater liability on imported oil than domestic. See Uhlfelder, *Superfund Tax May Violate GATT; Oil Import Fee May be Foreclosed*, 35 TAX NOTES, June 15, 1987, at 1045. Mexico claimed the differential tax violated GATT article III, and a GATT panel was formed. CONTRACTING PARTIES TO THE GATT, GATT ACTIVITIES 1986, at 61-62 (1987)[hereinafter GATT ACTIVITIES 1986]. In what has become a model for expeditious adjudication of a dispute, the panel ruled that the tax discriminated against imports in violation of the provision for national treatment on internal taxation, and suggested that the Contracting Parties recommend that the United States conform the tax to GATT. GATT ACTIVITIES 1987, *supra* note 14, at 70. See also *United States—Taxes on Petroleum and Certain Imported Substances Report of the Panel Adopted on 17 June 1987 (L/6175)*, in BISD, *supra* note 108 (34th Supp. 1988), at 136. GATT-sanctioned retaliation against the United States may be in the offing because Congress has not eliminated the tax and thus has not complied with the ruling. *Trade Row Between U.S. and Canada Worsens*, Fin. Times, Apr. 7, 1989, at 6, col. 3.

¹⁸⁴ The most-favored-nation principle, *supra* note 13, prohibits governmental discrimination against imports of different countries but does not speak to favoring domestic products, which might be a “basic human urge.” See J. JACKSON, *supra* note 8, at 273-74.

¹⁸⁵ GATT, *supra* note 7, art. III(4).

ability of domestic utilities to obtain enrichment services for foreign uranium, thereby restricting their ability to purchase and utilize imported uranium. This resulted in differential treatment between foreign and domestic uranium. Article III requires the parties to recognize that "laws, regulations and requirements" affecting¹⁸⁶ "the internal sale . . . purchase . . . or use," as well as "internal quantitative regulations requiring . . . processing . . . of products in specified amounts," can protect domestic production¹⁸⁷ and are thus impermissible.¹⁸⁸ Congress in 1964 expressly afforded protection to the domestic uranium industry despite a superficial nod to GATT.¹⁸⁹ The inquiry thus shifts to whether this GATT violative administrative action¹⁹⁰ or any other trade restrictions legisla-

¹⁸⁶ The term "affecting" extends the national treatment obligation to "any laws or regulations which might adversely modify the conditions of competition between the domestic and imported products on the internal market." J. JACKSON, *supra* note 8, at 288 (quoting *Italian Discrimination Against Imported Agricultural Machinery* (L/833)(Oct. 23, 1958), in *BISD*, *supra* note 100, at 60, 64 (7th Supp. 1959)). The reach of article III is wide because national treatment is considered more onerous than tariff protection. J. JACKSON, *CASEBOOK*, *supra* note 157, at 573. See O. LONG, *supra* note 10, at 9 (wide scope is "defense against protectionism resulting from internal administrative and legislative measures").

¹⁸⁷ GATT, *supra* note 7, art. III(1).

¹⁸⁸ *Id.* at art. III(4), (5).

¹⁸⁹ See 1964 REPORT, *supra* note 17, at 3120-21. The State Department also realized the enrichment restrictions collided with article III of GATT. A spokesman noted that the "discriminatory limitations on the domestic use of enriched foreign ore would be in direct conflict with . . . this Government's long-standing policy of promoting . . . its international commitments under [GATT]." But since the restrictions were only transitional "within the framework of a significant gradual liberalization of AEC nuclear fuel supply practices," the State Department did not object. Johnson-Seaborg Letter, *supra* note 53. This was "on the understanding that the situation will be kept under continuing examination with a view to avoiding the imposition of restrictions or to relaxing any restrictions when and to the degree that this can be done consistent with the national interest." *Id.* Joseph Greenwald, Director of the State Department Office of International Trade, later testified to the JCAE that "discriminatory limitations on the domestic use of enriched foreign ores would be in direct conflict with our international commitments under [art. III(4) of] GATT." 1964 Hearings, *supra* note 4, at 336. He also stated that this might only be a technical violation if transitional, and thus could remain consistent "with the [GATT] spirit as long as we made it clear we are trying to move to complete compliance with the GATT provision." *Id.* at 337.

¹⁹⁰ There seemed to be some confusion expressed by the mining states in their opposition to the petition for writ of certiorari in the *Western Nuclear* litigation that the USTR maintained at one time that the DOE's offering of enrichment was a service and therefore not within the purview of GATT. See *Australia Brief*, *supra* note 58, at 9-11. Since uranium is useless as a light-water nuclear reactor fuel without enrichment, denial of a service essential to the utilization of an imported good is also differing national treatment. This is supported by the fact that § 161(v) does not apply to foreign uranium enriched for re-export. See *Canada Brief*, *supra* note 58, at 10.

Trade in services accounts for nearly one-third of the over two trillion dollar flow of world commerce, and thus it may only be a matter of time before GATT is expanded to encompass services. See Nelson, *GATT Nations Settle Dispute Imperiling Talks*, *Wall St. J.*, Apr. 10, 1989, at A3, col. 1 (midwest ed.) In fact, the national treatment provisions of GATT are cited as requiring incorporating services into GATT. Veale, Spiegelman & Ronkainen, *Trade in Services: The U.S. Position*, 11 *FLETCHER FORUM* 21, 26-27 (1987). The GATT negotiations in Montreal established a frame-

tion is sheltered by GATT's national security exception.

2. Free Entry: Articles II and XI

Articles II and XI construed together also require free entry of foreign uranium into the United States. Article II(1)(a) provides that "each contracting party shall accord to the commerce of the other contracting parties treatment no less favourable than that provided for in the appropriate Part of the appropriate Schedule annexed to this Agreement."¹⁹¹ The referent schedule is the Harmonized Tariff Schedule of the United States, which currently provides for importation of uranium in most of its forms free of tariffs.¹⁹²

Article XI assures that domestic measures do not negate these tariff concessions: "No prohibitions or restrictions other than duties . . . whether made effective through quotas, import or export licenses or other measures, shall be instituted or maintained . . . on the importation of any product."¹⁹³ This flat prohibition is broad enough to apply to all kinds of nontariff barriers not otherwise addressed in GATT, and not merely to quantitative barriers.¹⁹⁴ Thus, an enrichment or other type of restriction might contravene Article XI even if it does not violate Article III.¹⁹⁵

B. National Security Exception

National security has been described as a "classic exception" to the goals of free trade.¹⁹⁶ Nations assert the exception because the welfare loss generated by trade controls protecting industries deemed vital to na-

work for talks to liberalize trade in services. Farnsworth, *Trade Talks Stall on Farm Policy*, N.Y. Times, Dec. 9, 1988, at 33, col. 3 (nat'l ed.). This movement is especially popular among post-industrial countries whose economies are becoming increasingly service based. See also *Signs of Progress on Yardsticks for Liberalising Services*, Fin. Times, Dec. 1, 1988, at 4, col. 1 (impediments to progress in services negotiations are enormity and complexity of scope and difficulty in defining problem).

¹⁹¹ GATT, *supra* note 7, art. II(1)(a). Each Contracting Party submits its own tariff schedules which are incorporated into the basic agreement. The combined schedules now dwarf the GATT agreement. See Jackson, *Recent Problems*, *supra* note 8, at 10.

¹⁹² The Harmonized Tariff Schedule of the United States is published pursuant to the Omnibus Trade Act, 19 U.S.C. § 3007 (1988). See *supra* note 112 for a description of headings for uranium.

¹⁹³ GATT, *supra* note 7, art. XI(1).

¹⁹⁴ K. DAM, *supra* note 11, at 151. "The American draftsmen of the General Agreement tended to view quantitative restrictions as the incarnation of international commercial evil." *Id.* at 148. This is complementary with Article III whose prohibitions control treatment *after* importation while Article XI dictates the manner of importation itself. J. JACKSON, *supra* note 8, at 315.

¹⁹⁵ See also Australia Brief, *supra* note 58, at 8-9. The United States used article XI to challenge a Canadian uranium export policy. See *supra* note 179.

¹⁹⁶ J. JACKSON, CASEBOOK, *supra* note 157, at 941.

tional security is outweighed by the incalculable benefit of preservation of the state.¹⁹⁷ The exception, as embodied in article XXI of GATT, provides a "dangerous loophole" to the goal of free trade,¹⁹⁸ because it has been interpreted to empower individual states to make unilateral decisions as to what are "essential security interests."¹⁹⁹ Thus, the reach of article XXI is limited only by self-control and the effectiveness of the GATT dispute resolution machinery.²⁰⁰ In 1982, the GATT body began to urge itself to make a formal interpretation of the applicability of the exception, despite the inherent difficulties involved and resistance from some members.²⁰¹

Uranium used to arm nuclear weapons and to propel nuclear powered military vessels falls within any definition of a security exception. This does not mean, however, that the exception applies to trade in uranium used for civilian power plants when separate supply channels exist.²⁰²

1. GATT Article XXI

Article XXI provides specific exceptions to the general nondiscriminatory trade scheme of GATT for fissionable materials, and for goods

¹⁹⁷ *Id.*

¹⁹⁸ J. JACKSON, *supra* note 8, at 748.

¹⁹⁹ The United States proposed inclusion of article XXI in GATT, its delegate explicitly noting this implicit power: "some latitude must be granted for security as opposed to commercial purposes." U.N.Doc. E/PC/T/A/SR/33, at 3 (1947). The Dutch delegate had inquired whether the exception could be worded to clarify its intended interpretation. *Id.* An attempt to amend another proposed GATT article by authorizing parties to "take exceptional action to protect vital national interests," was resisted for fear that "[d]ifficult situations were likely to arise," and that the GATT charter would become rife with similar insertions. U.N. Doc. E/PC/T/A/SR/40(2), at 5 (1947). For a discussion of the scope of article XXI, see Comment, *The Politics of Procedure: An Examination of the GATT Dispute Settlement and the Article XXI Defense in the Context of the U.S. Embargo of Nicaragua*, 19 LAW & POL. INT'L BUS. 603, 615-22 (1987)[hereinafter Comment, *The Politics of Procedure*].

²⁰⁰ The chair of the GATT Preparatory Committee stated that "the spirit in which Members of the Organization would interpret these provisions was the only guarantee against abuse." U.N. Doc. E/PC/T/A/SR 33, at 3 (1947). The only apparent limit within GATT was that article XXI was subject to article XXIII(2) procedures, *id.* at 4-5, which allows suspension of concessions under "serious circumstances." See *supra* note 175; see also Bollag, *GATT Acts to Speed Settlement of Disputes*, N.Y. Times, Apr. 13, 1989, at 32, col. 1 (nat'l ed.).

²⁰¹ *Decision Concerning Article XXI of the General Agreement*, (L/5426)(Nov. 30, 1982) in BISD, *supra* note 100, at 23-24 (29th Supp. 1983). They recognized that use of article XXI could disrupt trade, introduce uncertainty, and affect accrual of benefits to the parties. The Contracting Parties established interim procedural guidelines for recourse to article XXI, including notice of measures taken. *Id.* A participant in the Uruguay Round negotiations requested a review of article XXI, asking for consideration of GATT's competence relating to security matters. GATT ACTIVITIES 1987, *supra* note 14, at 35-36.

²⁰² See *infra*, Section IV; see generally, Santos, *The National Security Exception to Free Trade* 30 FED. B. NEWS & J. 293 (1983)[hereinafter Santos].

and materials supplying military establishments. There are other protections from which a general exception can be inferred.²⁰³ The “fissionable materials” exception states:

Nothing in this Agreement shall be construed to prevent any Contracting Party from taking any action which it considers necessary for the protection of its essential security interests relating to fissionable materials or the materials from which they are derived.²⁰⁴

Obviously, uranium dioxide fuel assemblies are “fissionable materials,” and uranium hexafluoride, yellowcake, uranium ores and oxides, and related physical or chemical intermediaries are “materials from which they are derived.”²⁰⁵

Article XXI also enables a Contracting Party to take action to protect its security interests in “traffic in arms, ammunition and implements of war and to such traffic in other goods and materials as is carried on directly or *indirectly* for the purpose of supplying a military establishment.”²⁰⁶ This section clearly would include uranium contained in nuclear weapons as “arms,” or “ammunition,” or as “implements of war,” if these items were trafficked. It also would seem to apply to trade in fuel utilized in reactors powering military vessels, as goods “directly” supplying a “military establishment.”²⁰⁷ In addition, this clause arguably could exempt trade in uranium used in civilian reactors as “traffic in other goods and materials to supply a military establishment” because of the term “indirectly.”²⁰⁸ Prior protection of the domestic uranium producers through trade-restrictive civilian enrichment restrictions was carried out on the theory that such restrictions would “indirectly” assure a viable industry and thus an adequate uranium supply for the military.

2. *Prior Invocations of the GATT Security Exception*

There are few reported cases of countries invoking the exception, probably because the exception itself permits nondisclosure of information,²⁰⁹ and because secrecy is an essential element of national security

²⁰³ Additional sections relate to actions taken to prevent disclosure of information that will compromise security (art. XXI(a)); to actions taken in wartime or emergency in international relations (art. XXI(b)(iii)); and to actions taken under the United Nations Charter to maintain peace (art. XXI(c)).

²⁰⁴ GATT, *supra* note 7, art. XXI(b)(i).

²⁰⁵ See U.N. Doc. E/PC/T/A/SR/25, at 3 (1947).

²⁰⁶ GATT, *supra* note 7, art. XXI(b)(ii) (emphasis added).

²⁰⁷ The Australian delegate assumed “supplying a military establishment” included “all army, navy and air force purposes,” but asked for a clarifying amendment. U.N. Doc. E/PC/T/A/SR/40(2), at 10 (1947).

²⁰⁸ The words “directly or indirectly” were added by amendment, although the U.S. delegate had interpreted the initial language that way. *Id.* at 10-11.

²⁰⁹ “Nothing in this Agreement shall be construed to require any contracting party to furnish any

activities in the first instance.²¹⁰ Of the reported cases, most were politically motivated boycotts aimed at specific countries, and no case has addressed specific products usable as war material or fuel.

The first dispute arose when Czechoslovakia complained that U.S. export licensing practices served to exclude that country.²¹¹ The United States replied that its actions were within the ambit of article XXI, and the Contracting Parties agreed.²¹² Subsequent discussions revealed the belief that "every country must have the last resort on questions relating to its own security," so long as GATT was not undermined.²¹³ One party indicated that goods which "might contribute to war" fell under the exception.²¹⁴

In 1961, Ghana banned all imports from Portugal in an attempt to pressure Portugal to free Angola, invoking articles XXI and XXXV.²¹⁵ A Ghanaian spokesman related his country's position on the stature of national security considerations within GATT: "Under [article XXI] each contracting party was the sole judge of what was necessary in its essential security interests. There could therefore be no objection to Ghana regarding the boycott of goods as justified by security interests."²¹⁶

The rationale for Sweden's mid-1970s import quota for certain footwear paralleled that used by the uranium industry. The Swedish government maintained that the "decrease in domestic production had become a threat to the planning of Sweden's economic defence in situations of

information the disclosure of which it considers contrary to its essential security interests." GATT, *supra* note 7, art. XXI(a).

²¹⁰ Professor Jackson believes that a reporting requirement would do little good for this reason, and that states would exercise a security exception whether or not one was explicitly provided. J. JACKSON, *supra* note 8, at 748.

²¹¹ GATT Doc. GATT/CP. 3/33, *cited in* J. JACKSON, *supra* note 8, at 749.

²¹² GATT Docs. CP.3/38 (1949); CP.3/SR.22 (1949), *cited in* J. JACKSON, *supra* note 8, at 749. The U.S. suspension of GATT obligations with Czechoslovakia in 1951 and Peru's prohibition of Czech imports in 1955 may have also been accomplished under article XXI. J. JACKSON, *supra* note 8, at 749-50.

²¹³ GATT Doc. CP.3/SR.22, at 9 (1949), *cited in* J. JACKSON, *supra* note 8, at 749. Apparently the fledgling GATT had neither the "capacity nor the prestige" to criticize U.S. cold war policies. R. HUDEC, *THE GATT LEGAL SYSTEM AND WORLD TRADE DIPLOMACY* 68, 279 (1975).

²¹⁴ See Comment, *The Politics of Procedure*, *supra* note 199, at 618 n.94, (citing *Non-discriminatory Measures Notified by the Government of Ceylon Under Paragraph Six of Article XVIII*, at 4 (1949), GATT Doc. GATT/CP.3/20, *reprinted in* 1985 GATT ANALYTICAL INDEX).

²¹⁵ J. JACKSON, *supra* note 8, at 750-751.

²¹⁶ *Id.* (quoting GATT Doc. SR.19/12 at 196 (1961)). Similarly, the European Community justified the trade sanctions imposed on Argentina because of the Falkland Islands dispute by reference to rights embodied in article XXI. See Comment, *The Politics of Procedure*, *supra* note 199, at 619 nn. 103-104.

emergency as an integral part of its security policy."²¹⁷ This policy required the "maintenance of a minimum domestic production capacity in vital industries."²¹⁸ Although GATT members complained of the quota before Sweden terminated it, the position of many countries is that maintenance of strong production of even civilian-oriented commodities guarantees production capability for potential military use or use in the event of national emergency.²¹⁹ Moreover, some governments maintain that such production capability is necessary simply in order to maintain a strong economy as the basic underpinning of a strong defense.

The most blatant abuse of article XXI was the U.S. trade embargo of Nicaragua beginning in 1985. The United States initially reduced its import quota for Nicaraguan sugar in 1983. Nicaragua complained, and a GATT panel ruled against the United States, probably because the United States did not invoke the national security or any other exception.²²⁰ When the quota reduction was expanded to a complete embargo, the United States did cite article XXI, and in fact insisted as a precondition for its submission to the GATT panel's jurisdiction that the panel not examine the validity of the U.S. recourse to article XXI.²²¹ Shackled in this way, the panel had no choice but to rule that the United States was within its rights, but questioned the entire reasoning behind unilateral invocation of article XXI.²²²

3. *Applicability to Uranium*

Professor Jackson has suggested that article XXI might be used improperly to shelter otherwise protectionist measures under the security exception umbrella.²²³ Prior claims that protecting civilian uranium suppliers also protects military supply have given way to consideration of whether civilian utilities, and thus consumers, must be forced to prop up the ailing uranium producers for no apparent military purpose.

²¹⁷ *Minutes of Meeting Held in the Palais des Nations, Geneva, on 31 October 1975*, GATT Doc. C/M/109, at 8 (1975), quoted in Comment, *The Politics of Procedure*, *supra* note 199, at 619 nn. 99-101.

²¹⁸ *Id.*

²¹⁹ The Japanese recently dug in their heels over U.S. attempts to open up the Japanese market to rice imports, citing the need to maintain national security and a national identity, and the need to avoid dependence on foreigners for basic food sources. Sanger, *Japan's Sensitivity on Rice Issue*, N.Y. Times, Oct. 28, 1988, at 29, col. 3 (nat'l ed.).

²²⁰ *United States—Imports of Sugar from Nicaragua; Report of the Panel adopted on 13 March 1984 (L/5607)*, in BISD, *supra* note 100, at 67 (31st Supp. 1985). The report also stated that the embargo was inconsistent with GATT's basic aim of stable trade relations. *Id.*

²²¹ CONTRACTING PARTIES TO GATT, GATT ACTIVITIES 1985, 47-48 (1986).

²²² See *U.S. Embargo on Nicaragua Did Not Violate Obligations Under GATT, Dispute Panel Rules*, 3 Int'l Trade Rep. (BNA) 1368-69 (Nov. 12, 1986).

²²³ J. JACKSON, *supra* note 8, at 752.

Currently, protection of domestic suppliers through trade restrictive measures such as section 161(v) cannot be justified by the "fissionable materials" exception.²²⁴ Since civilian uses for uranium were minimal in the mid- and late 1940s when GATT was negotiated, the GATT drafters' intent was likely to except only trade in uranium intended for military use.²²⁵ The Australian negotiator in 1947 anticipated, however, that the inclusion of the "fissionable materials" reference would "have an unfortunate effect in the event that atomic energy became an important or major source of industrial energy."²²⁶

In 1964, Congress loosened the government's grip on ownership and use of nuclear fuel, but it recognized the connection between civilian use of uranium, uranium industry viability, and defense. Perhaps a credible argument could have been made that shielding the industry in the civilian realm protected defense supply, and thus the "fissionable materials" exception would apply. Even as Congress codified this connection within section 161(v), and the AEC made it manifest by asserting its delegated power by restricting enrichment, the State Department and countries impacted by restrictions nonetheless complained that GATT was violated, implying that article XXI did not apply. Further, the restrictions under section 161(v) were founded on an infant industry startup premise, rather than on article XXI exception grounds.²²⁷ The restrictions were intended to be transitory. Thus, any article XXI arguments also would have to have been transitory because once the civilian market became active, it would have been difficult to justify an article XXI defense to a GATT attack on the restrictions. Despite uranium's fissionable character then, the first exclusion does not apply.

Furthermore, trade restrictive measures cannot be justified by article XXI(b)(ii), which excepts limitations on goods and materials "directly or indirectly . . . supplying a military establishment." In the 1940s and 1950s, virtually all U.S. purchases of foreign uranium "directly" supplied

²²⁴ GATT, *supra* note 7, art. XXI(b)(i).

²²⁵ Congress reported in 1964 when deciding to authorize enrichment restrictions that in 1946, just prior to GATT negotiations, "[p]rivate industry was not permitted to own special nuclear materials nor to own or operate nuclear power reactors or other facilities capable of producing significant quantities of these same materials. . . . [A]tomic energy was a new and little understood force. The atom was born of war. . . ." 1964 REPORT, *supra* note 17, at 3109. At this time there was "little demand for private participation in the peaceful uses of atomic energy. . . . The generation of economic power from the atom was still a goal in the distant future." *Id.* at 3110.

²²⁶ The delegate also worried that there were "trade problems associated with fissionable materials" with respect to security. U.N. Doc. E/PC/T/A/SR/30 at 3-4 (1947). The delegate he indicated that he would lodge a provisional reservation against the inclusion of the fissionable materials exception. U.N. Doc. E/PC/T/A/SR/33 at 3 (1947).

²²⁷ 1964 REPORT, *supra* note 17, at 3114-15.

the military, and so arguably came under this exception. In the 1960s and early 1970s, it was thought that maintaining a strong civilian market for domestic uranium via restrictions on enrichment of foreign uranium would also *indirectly* assure supplies for the military if the need for diversion of supply arose. Once this assumption is disproven, however, the “indirect” connection vanishes. As shown in Section IV, *infra*, the largest foreign suppliers currently do not allow their uranium to be used for military purposes, and they therefore fall outside the “direct” supply exception. Protecting domestic producers from foreign competition via restrictions on civilian use of foreign uranium no longer “indirectly” assures military supplies because the United States can use only domestic and stockpiled uranium for military use. Thus, this second exception also is not applicable.

There may also be a “spirit” to the national security exception, which countries invoke rather than resorting to specific sections of article XXI.²²⁸ When the government of a country merely wishes to shelter an activity from GATT, or it actually feels its security threatened, it simply does what it feels it must.²²⁹ The Czechoslovakia, Ghana, and Nicaragua cases fall under this category, but relate more to political agendas than specific commodities. They thus bear little similarity to the uranium case. The Swedish shoe case came somewhat closer to a legitimate use of the general exception, but because of the availability of substitute supply, and the attenuated connection between footwear and national security, a general security exception defense would fail. As will be seen, the nexus between civilian reactor fuel uranium (in a “non-nonproliferation” sense) and national security is also too tenuous to withstand scrutiny as realistically coming under the national defense exception to the GATT contract. The U.S. sugar embargo did not withstand GATT scrutiny under article XXI, and it sandbagged the GATT panel on the issue after imposing the total embargo.

The question then becomes to what extent will the United States be willing to allow the weakening of an uncompetitive defense related industry in order to exploit the comparative advantage of efficient (or at least subsidized) foreign producers.²³⁰ The next section shows that the advan-

²²⁸ Signatories realized early on that the preeminence of political issues over free trade norms was a “*fait accompli*.” See Abbott, *supra* note 11, at 853.

²²⁹ There is a temptation to invoke the national security exception if for no other reason than to protect a failing industry. Santos, *supra* note 202, at 293.

²³⁰ See *id.* at 294. The comparative advantage theory, developed by David Ricardo in the early nineteenth century, posits that every country should produce what it can most efficiently, and trade with other countries for their most efficiently produced goods. R. LIPSEY & P. STEINER, *ECONOMICS* 740 (4th ed. 1975).

tage can be exploited concurrently with maintaining a viable—albeit much smaller—domestic industry, while preserving domestic reserves for actual defense emergencies.

IV. SEPARATION OF MARKETS AND CONCLUSION

The domestic uranium industry received protection from import competition through enrichment restrictions until the early 1980s. The industry invested in noncompetitive mines and overproduced in reaction to its protected status, optimistic nuclear energy demand projections, and contracting policies of the government.²³¹ The recession of the industry reflects merely an adjustment to market conditions rather than a reaction to import competition.²³²

Domestic demand for civilian reactor fuel is soft. Oil prices at below \$20 per barrel have made expensive energy alternatives such as nuclear power less attractive.²³³ Continuing problems with waste disposal and reactor design,²³⁴ a near catastrophe at the Soviet Union's Chernobyl plant,²³⁵ and cost overruns²³⁶ have contributed to the decision to cancel additional reactor orders²³⁷ and to the general stalled growth of the do-

²³¹ See Montange, *supra* note 44, at 20 n.85 ("Had the Government retained the requirements contract approach, the problems of surplus inventories and competition from the secondary market which had so devastating an effect in the early and mid-1980's would never have arisen."). See also Yokell & De Salvo, *supra* note 57, at 23.

²³² See Gooding, *supra* note 135.

²³³ See Woodsworth, *supra* note 25. Oil company investors in solar energy development are withdrawing because photovoltaic cells produce power still three times more costly than the most expensive electricity. Wald, *U.S. Companies Losing Interest in Solar Energy*, N.Y. Times, Mar. 7, 1989, at 1, col. 2 (nat'l ed.). Low-cost fossil fuels have also hurt efforts at improving energy efficiency. Wald, *U.S. Progress in Energy Efficiency Halting*, N.Y. Times, Feb. 27, 1989, at 1, col. 2 (nat'l ed.). Use of the fusion reaction for electricity generation may still be decades off, despite some recent excitement. Broad, *At Conference on Cold Fusion, the Verdict is Negative*, N.Y. Times, May 30, 1989, at 19, col. 1 (nat'l ed.).

²³⁴ See Wald, *Inefficiency Downfall of Safe Reactor*, N.Y. Times, Dec. 8, 1988, at 15, col. 1 (nat'l ed.).

²³⁵ The plant fire and the delay in the Soviet warning and response sparked an international outcry. The Soviets have cancelled construction of a comparable plant, and a similarly constructed weapons plant in the United States may be shut down as a consequence. See Keller, *Soviet Scraps a New Atomic Plant in Face of Protest over Chernobyl*, N.Y. Times, Jan. 28, 1988, at 1, col. 1 (nat'l ed.) ("until today's report, the explosion seemed, in the view of Western analysts, to have set back Western nuclear power programs more severely than the Soviet program"); Wald, *Energy Officials Back Shutdown of Atomic Plant*, N.Y. Times, Jan. 4, 1988, at 1, col. 5 (nat'l ed.).

²³⁶ See Wald, *Nuclear Plant Drain Put at \$100 Billion for U.S.*, N.Y. Times, Jan. 31, 1988, at 21, col. 1 (nat'l ed.) ("It will cost the nation's economy as much as \$100 billion for nuclear plants that were abandoned before completion or finished at excessive cost."); Daniels, *Bankruptcy Filed by Leading Utility in Seabrook Plant*, N.Y. Times, Jan. 29, 1988, at 1, col. 6 (nat'l ed.).

²³⁷ See *supra* note 73. However, new streamlined licensing procedures may reduce one barrier to on-budget construction cost. *New Rules for Licensing Nuclear Plants Likely to Spark Watchdog Groups*, Wall St. J., Apr. 10, 1989, at C19, col. 2 (midwest ed.).

mestic nuclear industry. These factors, coupled with the return of a requirements contract for enrichment services,²³⁸ have kept uranium demand at low levels.²³⁹ Even military demand may be reduced by the thaw in East-West relations and until health, safety and waste problems at weapons plants can be resolved.²⁴⁰

The existence of stockpiles and a secondary market means that uranium consumers need not purchase newly extracted uranium. Utilities have stockpiled four to five years worth of their uranium needs.²⁴¹ More importantly, the DOE has amassed significantly greater amounts of uranium for military uses on behalf of the Department of Defense (DOD).²⁴² Though the exact amount is classified, estimates run between forty years strategic supply,²⁴³ and a worst-case scenario in which defense purchases would be required by the early 1990s.²⁴⁴

Domestic uranium demand, however, probably will not be flat indefinitely. The public has increasingly become concerned over the problems associated with the use of fossil fuels—smog, acid rain, the greenhouse effect, and the rapid depletion of these fuels. By contrast, nuclear power remains the only proven large-scale domestic energy alternative.²⁴⁵ Nuclear power capacity abroad continues to grow,²⁴⁶ and the United States

²³⁸ See *supra* notes 82-83 and accompanying text.

²³⁹ See *Low Cost U Still Available at Right Terms*, NUCLEARFUEL, Feb. 20 1989, at 1 (“The market continues to frustrate analysts who are surprised by how much suppliers are willing to cut prices to get utilities’ business.”).

²⁴⁰ Butterfield, *Dispute on Wastes Poses Threat to Weapons Plant*, N.Y. Times, Oct. 21, 1988, at 1, col. 1 (nat’l ed.); Butterfield, *Nuclear Arms Industry Eroded As Science Lost Leading Role*, N.Y. Times, Dec. 26, 1988, at 1, col. 4 (nat’l ed.); Schneider, *Bomb Plant Flaws Known to Du Pont and U.S. for Years*, N.Y. Times, Jan. 16, 1989, at 1, col. 3 (nat’l ed.). Advances in arms control will reduce demand for raw materials for weapons systems and naval propulsion. Schneider, *New Cracks Found in Arms Reactor*, N.Y. Times, Feb. 9, 1989, at 8, col. 1 (nat’l ed.).

²⁴¹ At the end of 1987, U.S. utilities carried a 137.4 million pound inventory. *DOE Received Record Amount of Foreign U in 1987 to Enrich for U.S. Utilities*, NUCLEARFUEL, Oct. 17, 1988, at 9. This is equivalent to an estimated 20 billion barrel strategic petroleum reserve. 134 CONG. REC. S3337 (daily ed. Mar. 30, 1988)(statement of Sen. Bradley).

²⁴² If the government enrichment corporation is created, the federal stockpile would be entirely set aside for the military. Analysis of S 2443, *reprinted in* 134 CONG. REC. S11,077 (daily ed. Aug. 8, 1988)[hereinafter S. 2443 Analysis].

²⁴³ See 134 CONG. REC. S3327 (daily ed. Mar. 30, 1988)(Statement of Sen. Evans)(if entire DOE stockpile set aside for military, supply would last until 2030). The DOE estimated a thirty-year supply. *FTA Implementation Hearings, supra* note 132, at 102 (statement of William Martin, Deputy Sec’y, DOE).

²⁴⁴ 134 CONG. REC. S3332 (daily ed. Mar. 30, 1988)(testimony of Robert Luke, President, Uranium Producers Association)(“There have been no government uranium purchases since 1970 and defense requirements are classified. However, we have been advised by DOE that in the DOD high case scenario, new U.S. government uranium procurement could be necessary by the early 1990s.”).

²⁴⁵ See Behrmann, *Uranium Prices Could Gradually Head Higher on Possibility of 1990s Shortage, Specialists Say*, Wall St. J., Nov. 14, 1988, at C13, col. 1 (midwest ed.).

²⁴⁶ Approximately forty-seven reactors are under construction outside of the United States and

is still producing and even exporting uranium.²⁴⁷ The domestic uranium mining and milling industry is not a “senile” industry—one that has irretrievably lost its comparative cost advantage to foreign competition—and thus only needing protection on a “phase out” basis.²⁴⁸ The domestic uranium industry will survive, albeit on a smaller scale, after adjustment to market conditions. The USTR has projected that it will be “stabilized out from the oversupply situation” at a 40% to 45% civilian market share by the mid 1990s.²⁴⁹ This significant civilian production could be diverted to the military, if necessary, and replaced by Canadian uranium whose continued unrestricted flow into the United States is guaranteed by the FTA. Thus, preservation of an inefficient industry is not required in the name of national defense.²⁵⁰ The industry can stand on its own.

Nevertheless, the fear remains that if defense stockpiles dwindle, and foreign supplies are interrupted, that because of the weakened condition of the uranium industry, the DOD will be left without uranium in the event of a national security emergency.²⁵¹ This argument is countered most powerfully by the physical characteristics of uranium and the proximity and political stability of foreign suppliers.

The United States has significant stockpiles of uranium which it can use until it revives dormant mines.²⁵² Uranium expert Thomas Neff distinguished the vulnerability of uranium supplies from those of fluid fuel:

Uranium is not like oil or natural gas: disruptions of supply take several years, not days or weeks, to be felt. Inventories held by U.S. utilities, the U.S. government, foreign utilities and allied governments are high—amounting to, perhaps five years of forward supply—and *both the U.S. and international industries have demonstrated a capability to expand output very rapidly (doubling output in the 1970's in only four years).*²⁵³

A perceptive Congress foreshadowed these conclusions in 1964:

[T]he Government's inventories of source and special nuclear materials rep-

Soviet Union, with projections of a one-third rise in worldwide nuclear power generating capacity by the year 2000. Lamphier, *Cameco is Poised for Uranium Recovery*, Wall St. J., Mar. 2, 1989, at B7, col. 1 (midwest ed.)[hereinafter Lamphier]. See also *France Stands by Nuclear Power*, N.Y. Times, May 8, 1989, at 26, col. 1 (nat'l ed.). Uranium producers hopefully are wary of overoptimistic energy projections.

²⁴⁷ See *Canadian, Australian Officials Charge Japan's Uranium Deals With U.S. Unfair*, NUCLEARFUEL, Nov. 14, 1988, at 1.

²⁴⁸ See H. GRAY, *supra* note 55, at 63.

²⁴⁹ *FTA Energy Hearings*, *supra* note 110, at 204 (statement of Robert Reinstein, USTR).

²⁵⁰ *Id.* at 205. See Santos, *supra* note 202, at 294.

²⁵¹ See *FTA Oversight Hearings*, *supra* note 128, at 245 (statement of J. Adams, Chairman of the Board, Energy Fuels Corp.).

²⁵² See Editorial, *Why Protect Uranium?*, N.Y. Times, Mar. 14, 1988, at A18, col. 1 (midwest ed.) (“ore can always be recovered from mothballed domestic mines”).

²⁵³ Neff, *U.S. Uranium in International Perspective* (1985), reprinted in 134 CONG. REC. S3328 (daily ed. Mar. 30, 1988)(emphasis added).

resent a precious national asset. Unlike other materials which are perishable . . . the uranium inventory represents a vast nonperishable asset with intrinsic value in units of usable energy. Wisely managed, it can contribute to the common defense and security and to the welfare of the Nation.²⁵⁴

Canada and Australia have large proven uranium reserves. Use of this high-grade, inexpensive uranium²⁵⁵ not only benefits utility ratepayers,²⁵⁶ but also allows domestic uranium to remain stored in situ, available for future defense or civilian needs.²⁵⁷ Neither country, because of their nonproliferation objectives, allows their foreign customers to use their exported uranium for military purposes.²⁵⁸ Thus, all domestic uranium production can, if necessary, be reserved for defense purposes. Neither country is likely to be susceptible to the type of political upheaval which has disrupted supply lines in the past in the Middle East.²⁵⁹ Canadian supply, comprising the lion's share of U.S. imports, is guaranteed through the FTA and never need leave the shores of North America. There is no longer any merit to the contention that maintaining domestic civilian output through civilian market restrictions is necessary to protect military supply.

Uranium for military purposes is not at issue here. The text of the FTA's energy section and security exception bear this out. The United States has never officially claimed that GATT article XXI excepted section 161(v) enrichment restrictions from GATT's reach. Because of the commercial uses of uranium in the United States, it is doubtful that the government could make such a claim with any future trade restrictions.²⁶⁰ No country has ever claimed that any fuel or mineral comes

²⁵⁴ See 1964 REPORT, *supra* note 17, at 3122.

²⁵⁵ Canada's uranium giant Cameco produces uranium at a cost of \$8 per pound, compared to \$20 per pound for the average domestic producer, and holds some of the richest ore bodies in the world. Lamphier, *supra* note 246. Other foreign producers realize substantial cost savings because they mine uranium in conjunction with the extraction of other minerals.

²⁵⁶ In fact, domestic producers sometimes find it cost effective to fill orders by purchasing foreign uranium for resale. See 1986 Criteria, *supra* note 87, at 27,135. This inconsistency in the uranium producers' position did not escape attention in the *Western Nuclear* litigation. Australia Brief, *supra* note 58, at 13 n.11.

²⁵⁷ This position was first articulated in the natural gas context during World War II. See *Federal Power Comm'n v. Hope Natural Gas Co.*, 326 U.S. 591, 657 (1943)(Jackson, J., concurring)("Both producers and industrial consumers have served their immediate private interest at the expense of long range public interest. The public interest . . . requires stopping unjust impoverishment of future generations"). See also 1966 Hearings, *supra* note 55, at 138-139 (statement of Roger Coe & Harvey Wagner, Edison Electric Inst.)(problem may shift from needing to maintain a viable domestic industry to conserving an irreplaceable resource.).

²⁵⁸ 134 CONG. REC. S11,074 (daily ed. Aug. 8, 1988) (statement of Sen. Ford).

²⁵⁹ There is a possibility that changes in public policy in these countries would result in a cut-off of exports, but this seems unlikely as uranium contributes to a more favorable balance of trade for these countries. See S 2443 Analysis, *supra* note 242.

²⁶⁰ Canada Brief, *supra* note 58, at 10-11 n.13.

under the cover of the national security exception."²⁶¹ Moreover, recourse to an exception to GATT may require compensation to affected trading partners so that "other sectors of the U.S. economy would be asked to make sacrifices for any short-term relief provided for the uranium industry."²⁶² If compensation could not be agreed upon in such cases, GATT-sanctioned trade retaliation could result.²⁶³ Misuse of blanket exceptions such as article XXI threatens the sometimes tenuous GATT arrangement.²⁶⁴ Rather than wasting goodwill within the GATT contract to protect an ailing industry that will eventually stabilize, use of this exception should be limited to situations that directly threaten military operations or other important national security concerns.²⁶⁵

Because uranium trade will never be wrestled completely free from military and political exigencies, government policies in producer and consumer countries will continue to distort the market.²⁶⁶ Yet sheltering the U.S. industry under the security rationale is now a red herring.²⁶⁷ Even as enrichment restrictions were being phased out, one uranium pro-

²⁶¹ GATT signatories invoke the national security exception "very infrequently because of its potential for abuse." Letter from Ambassador Clayton Yeutter (USTR) to Cong. Morris Udall (July 15, 1985), *reprinted in* Australia Brief, *supra* note 58, at 15 n.12[hereinafter Yeutter-Udall Letter].

²⁶² Reinstein Declaration, *supra* note 98.

²⁶³ Yeutter-Udall Letter, *supra* note 261.

²⁶⁴ The United States attitude toward GATT has been sharply criticized over the years:

[T]he American policy of totally ignoring its GATT obligations when it is politically expedient to do so is unsettling to many of its trading partners. By its actions, the United States has explicitly repudiated its undertakings to use trade restraints only within a GATT-approved context, and has caused open doubt to be cast on its commitment to free trade principles . . .

The clear absence of any credible GATT defense in these circumstances underscores the contempt which others perceive the United States holds for the General Agreement. This is not an academic debate about technical interpretations contained in GATT Articles XIX, XX, and XXI; the United States does not offer any GATT explanation of what it has done—probably because there is none.

deKieffer, *Foreign Policy Trade Controls and the GATT*, J. WORLD TRADE 73, 78-79 (1988). See also Dullforce, *Gatt's Future on Line in Trade Talks*, Fin. Times, Mar. 31, 1989, at 4, col. 5 ("at stake are GATT's own future role as the arbiter of international trade and ultimately the prospects for free trade at a time when industrialists and politicians, notably in the U.S. are calling for protectionist action to counter their trade problems").

²⁶⁵ The economic and political benefits of nondiscriminatory trade may be able to survive specialized departures, however. "National security trade controls, for example, are universally recognized in theory and practice; nondiscrimination can easily coexist with the kind of controls permitted by moderate interpretation of article XXI." Abbott, *supra* note 11, at 855.

²⁶⁶ Gooding, *supra* note 135 (politics and nonproliferation concerns have greatest market influence, and thus market price does not reflect real cost). For a more extreme view, see 134 CONG. REC. S3345 (daily ed. Mar. 30, 1988)(statement of Sen Boren):

Uranium is a highly political mineral. This is due to the concern about non-proliferation and other nuclear weapons issues. These concerns overwhelm the importance of uranium as a fuel for electricity. It follows that the world of international uranium trade is, and always will be, dominated by political issues and government policies—not by uranium producers and traders. "Free trade" in uranium is only a theory. In the real world, governments set uranium policies.

²⁶⁷ The current duty-free status of uranium renders the national security argument even less persuasive. See *supra* note 192 and accompanying text.

ducer urged that "the best interests of the United States will be served by the domestic uranium industry operating within a free, competitive market."²⁶⁸ The uranium industry has already fallen victim to its own protection. The futility of future protection should be apparent.²⁶⁹

The United States should carry on its international trade in uranium intended for use in civilian reactors in a market governed by GATT norms,²⁷⁰ subject of course to safety and nonproliferation limitations,²⁷¹ until safer, cheaper, and less consumptive large scale energy sources can be found.

James R. Wilch

²⁶⁸ *Industry Splits and Diplomats Join the Fray as Hearings Open on Uranium Import Limits*, NUCLEARFUEL, Oct. 12, 1981, at 4. Most producers, however, take the opposite view:

Free trade is an admirable proposition and is, in theory, necessary for the orderly exchange of needs among the people of the world. However, it is extremely difficult to make a strong case that free trade exists between nations in the area of energy supplies Uranium since its beginnings as a tradeable commodity, has historically been a highly politicized and government-controlled energy fuel.

Embargo Jibes with GATT, Proponents Say, NUCLEARFUEL, June 7, 1982, at 14.

²⁶⁹ Protection always requires a quid pro quo for the affected trading partners, and usually leads to inefficiency in the protected industry and general welfare loss. For example, in order to achieve voluntary restraint agreements for steel imports, the United States had to promise not to challenge dumping practices of foreign suppliers, which protected inefficient practices on both sides. An estimated 17,000 steel industry jobs were saved, but at an estimated cost of 52,000 jobs in other sectors. See Editorial, *Steel's Costly Crunch*, N.Y. Times, Mar. 27, 1989, at 22, col. 1 (nat'l ed.). Prices increased and shortages were created. Hicks, *Effort Begun to Extend Limits on Steel Imports*, N.Y. Times, Feb. 13, 1989, at 20, col. 5 (nat'l ed.).

²⁷⁰ GATT members have begun negotiations at the Uruguay Round to liberalize trade in natural resources and energy products, including uranium. Nelson, *GATT Nations Settle Dispute Imperiling Talks*, Wall St. J., Apr. 10, 1989, at A3, col. 1 (Midwest ed.). They also agreed to limit the conditions under which Contracting Parties can protect industries from import surges.

²⁷¹ Non-proliferation efforts are aided by freer trade, as it becomes easier to keep track of who is buying and selling uranium.

A lack of legitimate market opportunities would tempt some producers to make further clandestine sales of uranium (like that of Niger to Libya in 1981) to nations or groups with no legitimate uses for material. The existence of "old fashioned" uranium-based routes to weapons, aggravated by the increasing availability of enrichment technologies, makes this a serious danger. Thus, healthy international commercial markets, with significant U.S. participation, may be one of the best safeguards policies available to the United States.

Neff, *supra* note 253, at S3329.

