Harald MÜLLER (ed)

EUROPEAN NON-PROLIFERATION POLICY 1988-1992

PEACE RESEARCH INSTITUTE FRANKFURT

Harald Müller
(ed.)

European Non-Proliferation Policy 1988-1992

EUROPEAN INTERUNIVERSITY PRESS
Brussels

ISBN 90 - 5201 - 305 - 5
D / 1993 / 5678 / 06

Table of Contents

SPAIN

Vicente Garrido Rebolledo

Introduction

The years 1987 through 1991 were of particular significance for Spain in terms of its overall nuclear policy, for, within that period of time, it proceeded to define it. The four following events mark decisive innovations:

o The February 24, 1987, announcement by Prime Minister Felipe González at the occasion of the Debate on the State of the Nation, of his country's decision to accede to the Nuclear Nonproliferation Treaty (NPT), and its ratification on November 5 of the same year.

o The December 1, 1988, signing of a new agreement on defense cooperation between the United States and Spain. This agreement, which went into effect on May 4, 1989, was preceded by a controversial debate. The controversy revolved around a clause in the agreement requiring Spain to forgo the right to ask whether U.S. Navy ships entering its territorial waters and putting in at its ports are nuclear-powered and/or -armed.

o The October 19, 1989, accident at the Vandellós I nuclear power plant at Tarragona (Catalonia), which was called the "gravest nuclear accident ever to happen in Spain"[1] in a report by the Council for Nuclear Safety, and the "gravest after Chernobyl" in an internal news bulletin of the International Atomic Energy Agency (IAEA).[2]

---

[1] Consejo de Seguridad Nuclear (Council for Nuclear Safety): Informe al Congreso de los Diputados y al Senado, Second semester 1989, 31 December 1989, CSN/IS/17/89, pp. 24-25.

[2] "La Agencia de Energía Atómica destaca que el suceso de Vandellós se estima el más grave desde Chernobil" in: EL PAIS, 25 October 1989.

o The April 30, 1991, announcement by Mr. Aranzadi, the Spanish Minister for industry, commerce and tourism, not to build any more nuclear power plants in Spain and to extend the 1983 moratorium on the reactivation of five nuclear power plants (Lemoniz I and II, Valdecaballeros I and II, and Trillo II) with a combined capacity of 5,000 MW. This decision has reopened the debate on the future of nuclear energy in Spain within the framework of the new PEN (the Spanish acronym for National Energy Plan) 1992-2000, and as to how any future energy needs should be met. (This new PEN is currently under discussion in the Industry Committee of the Chamber of Deputies, and, so far, all indications are that it will be approved.)

1. The End of the Cold War and the Gulf War: Their Impact on Spain's Nuclear Policy

Although Spanish Foreign Ministry officials equate the end of the Cold War with the end of the confrontational East-West relationship, Spain believes it necessary to maintain a minimum nuclear deterrent - and the end of the Cold War has now made it possible to achieve just such a "minimum" deterrent. As a non-nuclear-weapons state, however, Spain's views on deterrence carry but little weight, and, anyway, its position on the matter dovetails with that of its NATO allies. Spain also believes that the new East-West relationship was instrumental in improving the negotiating climate at the Fourth NPT Review Conference in 1990. On the other hand, the Moscow putsch of August 19, 1991, caused utmost concern in Spain (among both the political class and the general public), which, from the very first, had backed Mr. Gorbachev's reform course. It is interesting to note that, following the epochal upheavals in the former East bloc and the ensuing fundamental changes in the East-West relationship, 56 percent of the Spanish public no longer perceived (in the autumn of 1991) the then-breaking up Soviet Union as a threat to Europe.[3] While officials of the Ministry of Industry, Commerce and Tourism, and of the Foreign Ministry consider that Spain's nuclear policy has hardly been affected by those changes, they underline that improvement in the economic situation of the former Soviet-bloc countries is essential to nurturing those changes.

Also, Spanish official sources, the political parties and the media have expressed great concern about the future of the former Soviet Union's nuclear arsenal. They worry less about its management and

---

3 "Los españoles estiman positivos los cambios en la URSS" in: EL PAIS, 6 October 1991.

command than about the human factor, i.e., the possible emigration of some of the ex-Soviet Union's nuclear scientists to "threshold" countries pushing toward nuclear-weapons capability, as these could pay them far higher salaries than Russia or the other successor republics ever could.

The Gulf war has heightened the Spanish perception of the dangers of nuclear proliferation in that area. According to sources at the Ministry of Industry, Commerce and Tourism, Spaniards now favor more stringent export-control laws for nuclear materials and equipment, and would also welcome the creation of a special UN agency to oversee all nuclear exports and thereby keep tabs on private companies.

Rising oil prices in the run-up to the Gulf war also rekindled the debate about the atom as a source of energy, for Spain's annual oil bill shot up by Ptas 34,000 million for a U.S. $1 increase per barrel of oil.[4] As a consequence many suggested using alternative energies or nuclear energy as (less expensive) substitutes for oil.[5] On the other hand, there were others who believed that turning to the nuclear alternative would prove both more expensive.[6]

During the Gulf war, Spain provided major logistical support to the U.S. forces[7] - B-52s flew 294 bombing runs from Spanish air bases, 237 American warships put in at Spanish ports and naval bases, and 35 percent of the total air traffic for the U.S. deployment in the Gulf war passed through Spanish airspace (spiking to 60 percent at the height of Desert Storm). Also, war matériel in excess of 800,000 kg was ferried by the Spanish Air Force from the Zaragoza and Torrejón bases to that of Morón.[8]

---

4 Alvarez Miranda, A.: "Necesidades energéticas de un mundo en progreso" in: POLITICA EXTERIOR, Vol. IV, No. 17, Autumn 1990, p. 32.

5 See "Crisis de la energía: algunas precisiones" in: POLITICA EXTERIOR, Vol. IV, No. 17, Autumn 1990, pp. 5-23.

6 See Tamames, R. y De Quinto, J.: "Antecedentes, realidades y consecuencias económicas de la crisis del Golfo" in: POLITICA EXTERIOR, Vol. IV, No. 17, Autumn 1990, pp. 35-46.

7 "George Bush afirma que el apoyo español a la coaliciòn internacional fue sólido como una roca" in: EL PAIS, 6 March 1991.

8 "Conflicto del Golfo Pérsico. Invasión Irakí de Kuwait: Acontecimientos, Textos y Documentos", Ministry of Foreign Affairs, Offices for Diplomatic Information, Madrid 1991, pp. 705-708.

2. The Energy-Policy Debate

The debate on the future of nuclear energy in Spain has gained in intensity:

1. the April 30, 1991, announcement by Claudio Aranzadi, the minister for industry, commerce and tourism, that the Spanish government would extend the nuclear moratorium as spelled out in PEN 83;

2. the decision by the government to renounce building any new nuclear power plants; and

3. the announcement of a new PEN foreclosing any changes in that policy until at least the year 2000. (The nuclear moratorium affects five power plants: Lemoniz I and II, and Valdecaballeros I and II, and Trillo II, with a combined capacity of 5,000 MW).

In reaching its decision the Spanish government had to weigh several important factors. They were:

1. public opinion at home,

2. the electric power companies and the future of the debt contracted toward them,

3. the availability of alternative energy sources, and

4. the political volatility of the nuclear energy issue.

o Spanish public opinion weighed heavily in the final decision. While 47 percent of the Spanish people opposed nuclear energy in 1987,[9] 60 percent did so in 1991.[10] These figures reflect "nuclear fear," i.e., the fear of nuclear accidents. In Spain a special kind of worry holds sway in the aftermath of the nuclear accident at the Vandellós I nuclear power plant in 1989.

o The extension of the nuclear moratorium means additional costs for the five state-controlled electric companies. These costs, coming on top of a debt already owed to the utilities for their initial investment, have added to the government's financial obligations, thereby generating somewhat of a controversy. In its calculations for the new PEN, the General Directorate of Energy has determined that, owing to the extension of the nuclear moratorium, the five companies (Iberduero, Sevillana,

---

9 "La Energía en Europa. Política y tendencias de la energía en la Comunidad Europea", Commission of the European Communities, Directorate-General for Energy, No. 15, August 1990, pp. 13-15.

10 "Más del 60% de los españoles son contrarios a la energía nuclear, según el CIS" in: EL PAIS, 26 June 1991.

Hidrola, Endesa and Fenusa) are owed a grand total of Ptas 625,343 million - Ptas 335,761 million for Lemoniz, Ptas 278,759 million for Valdecaballeros, and Ptas 10,823 million for Trillo II.[11] As for the utilities' initial investment, ironically labeled "invoice" by the media, its cost will be recovered through a 3.54 percent government-caused increase in the price of electricity to the consumer, or Ptas 58,000 million per year.[12] The rationale for the government's decision to extend the nuclear moratorium, however, is that this will have less of an impact on the nation's electricity bill than activating the five nuclear plants would. The price of the atom-generated kilowatt (Ptas 328.198) is higher in Spain than it is on the average in the rest of the European Community. Thus the Spanish electrical sector has accumulated a deficit exceeding by far (Ptas 3,834 million in 1989) that of its European partners.[13] According to the Ministry of Industry, Commerce and Tourism, the new PEN was drafted with an eye to reducing the public utilities' investment effort and scaling back their expenditures.[14]

o Uncertainty about alternative energy sources and the question of how to make up for the 2,000 MW shortfall resulting from the nuclear moratorium has turned out to be another controversial issue.[15] Aware of Spain's need to diversify its energy sources, the minister of industry, commerce and tourism began advocating greater reliance on natural gas, a hitherto underused source of energy in Spain. Thus, the Spanish government has decided to proceed with the construction of a gas pipeline between Algeria and Spain, whose completion is expected by the end of 1995 at a planned total cost of Ptas 130,000 million.[16] Despite this huge investment in infrastructure, the natural-gas option is expected to cost less than nuclear power would.[17] The environmental advantages of natural gas were factored into the equation as well when it was decided to turn away from the nuclear energy option. Also, the kwh generated by new thermic plants using imported coal is less expensive than the one produced by nuclear power plants of the second and third generation.

---

11 De Quinto, J.: "Plan Energético Nacional: Ambiguedad calculada" in: Boletín de Información Comercial Española, February 1992.

12 "Anti-nucleares por Decreto" in: DIARIO 16, 3 May 1991.

13 "El precio del kilovatio nuclear producido en España es el más alto de la Comunidad Europea" in: EL PAIS, 17 December 1990.

14 "El PSOE impone al Gobierno la renuncia definitiva a construir nuevas centrales nucleares en España" in: DIARIO 16, 1 May 1991.

15 De Quinto, J.: "Plan Energético", op.cit.

16 "El PSOE impone al Gobierno", op.cit.

17 "La economía nuclear" in: EL PAIS, 12 May 1991.

Moreover, it appears that, in the long term, Spanish projected energy needs of 7,700 MW can be covered without the five nuclear plants subject to the moratorium. This means that Spain would then cease to be one of the ten countries that, worldwide, depend most on nuclear power to cover their energy needs.[18] According to projections, by the year 2000, Spain's nuclear power plants will generate 23.2 percent of the country's electricity (46,383 kwh).[19]

o Finally, there were political reasons behind this decision. At the 32nd party congress of the PSOE (Spain's Socialist Party), the intramural dividing line between advocates of nuclear energy and its opponents had been clearly drawn.[20] The issue was even more politicized since the announcement was to be made a month before municipal elections in the autonomous regions, namely Extremadura, and the regional president had threatened to step down if the Valdecaballeros nuclear power plant there were to be reactivated. As for the new PEN, it reaffirms, for economic reasons, the permanent closure of the Valdecaballeros nuclear plant, for its reactivation would have meant renouncing 15 percent of other energy investments to be made in Spain.[21]

Several political parties have criticized the new PEN for opposing reasons. The PP, or Popular Party, for example, has accused the government of failing to consult the other parties regarding the contents of the plan and has asked it to terminate the nuclear moratorium; on the other hand, the IU, or United Left, has demanded that, in the new PEN, the government provide for the immediate shutdown of all nuclear power plants.[22]

The new PEN reflects a situation not unlike that in other EC countries. Energy self-sufficiency in Spain, 37 percent in 1990, will have decreased to 29 percent by the year 2000. As a consequence of the nuclear moratorium, atom-generated electricity, which made up 15.7 percent of the total power supply in 1990, will be 11.7 percent by the year 2000.[23] Though making a final judgement about the new PEN might be premature at this stage, some have labeled it ambiguous, at a time when neither the issue of how to deal with the investments made in the nuclear power

---

18 For further information about this issue, see De Quinto, J.: "Es imprescindible levantar la moratoria nuclear?" in: POLITICA EXTERIOR, Vol. V, No. 20, Spring 1991.

19 De Quinto, J.: "Plan Energético Nacional", op.cit.

20 "La energía nuclear enfrenta a los socialistas" in: EL PAIS, 9 November 1990.

21 De Quinto, J.: "Plan Energético Nacional", op.cit.

22 Interviews with representatives of these political parties.

23 De Quinto, J.: "Plan Energético Nacional" op.cit.

plants under moratorium has yet been resolved, nor the expenses for dismantling Vandellós I accounted for. Other points in the domestic debate on nuclear energy include:

o Nuclear safety: The October 19, 1989, accident at the Vandellós I plant was the gravest nuclear accident ever to occur on Spanish territory. This plant did not comply with the safety improvements that have been proposed by the Council for Nuclear Safety, or CNS, since 1986.[24] But since nobody was hurt and no radioactive release into the environment occurred in this accident, the Spanish authorities were under no obligation to report it officially to the IAEA. The latter, however, was notified of the accident in a telephone call, and this was seized upon for politicizing it. There was strong French opposition to shutting down the plant permanently, for Vandellós I belonged to Hifrensa, a company whose major stockholder happens to be Electricité de France. France, as the plant's supplier, was concerned about its reputation. More important yet, Vandellós I produced plutonium, which the French reprocessed for use in their nukes.[25] Both the high financial cost of repairing the reactor and the public outcry (widely reflected in the media and the political parties) against its reactivation, however, impelled the Catalonian parliament to request the shutdown of Vandellós I.

There was yet another accident, this time at the Vandellós II plant on July 8, 1990, in which some radioactivity was released without, however, escaping the containment structure.[26] This again sparked more public protest, and the local authorities demanded major safety improvements.

A third accident, the malfunctioning of the Zaragoza Hospital's linear accelerator resulted in 11 fatalities until June 1991.[27] (The malfunction was due to the accelerator's being allowed to run for ten straight days with the control device on the emission of electrons switched off; thus, 27 patients were exposed to up to six times the recommended dose of radiation (7 MW).[28]

---

24 "Vandellós I no aplicó todas las reformas que propuso el CSN" in: EL PAIS, 22 October 1989.

25 "Programme for Promoting Nuclear Non-Proliferation", Newsbrief, No. 9, Spring 1990, p. 5.

26 "El CSN confirma la fuga radiactiva interna en Vandellós II" in: LA VANGUARDIA, 10 July 1990.

27 The linear accelerator is the 1978 Sagittaire model from CGR-General Electric.

28 "Un técnico revisó el acelerador del Clínico de Zaragoza tres días antes del accidente" in: EL PAIS, 26 February 1991.

o On October 16, 1987, the Spanish cabinet approved the First General Plan for Radioactive Waste as submitted by the National Company for the Treatment of Wastes (known as ENRESA, its Spanish acronym). This is the only plan under which the handling of radioactive waste is permitted in Spain.[29] It is unsatisfactory, however, in that its guidelines provide but for the treatment of low-level radioactive waste. A decision on a plan for processing highly radioactive has been postponed until 1999.[30]

3. Spain's Nuclear Industry

Spain's nuclear industry has reached maturity in terms of engineering and design, construction and operation of nuclear plants, including mastery of the complete fuel cycle.[31] According to sources at the INI (National Institute of Industry), however, its further development may be hampered, for importing atom-generated electricity from France turns out to be less expensive than producing it in Spain itself.[32] Meanwhile the country's share of nuclear-generated electricity has grown from 5,810 MW in 1987 to 7,354 MW in 1990,[33] the most important increase (2,059 MW) occurring from 1987 to 1988, when the Trillo plant was connected to the power grid and the Cofrentes plant increased its production.[34]

3.1 The Fuel Cycle

Three public companies are in charge of the fuel cycle: ENUSA (National Uranium Company) mines uranium and is involved in its enrichment, ENRESA (National Company for the Treatment of Wastes) treats nuclear waste, and CIEMAT-JET engages in research and development activities.[35]

---

29 So established by the "Real Decreto 1522/84", dated 22 July 1984.

30 Sabá, Katlyn: "Spain's Nuclear and Non-Proliferation Policy" in Harald Müller (ed.): How Western European Nuclear Policy is Made", London, Macmillan, 1991, p. 101.

31 "Spanish Nuclear Industry", Instituto Nacional de Fomento de la Exportación, Secretaría de Estado de Comercio, Forum Atómico Español, Madrid, June 1986.

32 Interviews with officials from the INI (National Industry Institute).

33 "Energía 91", ed. by Forum Atómico Español, Madrid 1991, p. 100.

34 "Informe al Congreso de los Diputados sobre las actuaciones energéticas en 1988", Ministry of Industry and Energy, Secretaría General de la Energía y Recursos Minerales, 1989, p. 91.

35 Sabá, Katlyn: "Spain and the Non-Proliferation Treaty" in Harald Müller (ed.): A Survey of European Nuclear Policy, 1985-87, London, Macmillan, 1987, p. 123.

In 1987, Spain had an estimated 40,764 metric tons of natural uranium, and reserves of about 9,659 tons.[36] Annual production averages about 265 tons.[37] ENUSA is a partner with an 11.11 percent share in the French company EURODIF, which runs the enrichment plant George Besse at Tricastin, and with a 10 percent share in the Nigerian uranium-enrichment company COMINAK. It also has cooperation agreements for uranium enrichment with the U.S. Department of Energy and the Russian firm TECHSNAB-EXPORT.

In 1987, ENUSA sought permission from the Spanish authorities to build a uranium-concentrate factory at El Chico (Salamanca), the so-called Querqus project. From 1991 on, this plant is scheduled to produce 950 metric tons of U_3O_8 annually. The Querqus project will cost Ptas 8,500, millions, 50 percent of which will be financed through a subsidy from the European Fund for Regional Development (PEDER). After PEN 83 was enacted, stocks of U_3O_8 began to dwindle, for the plan limited them to a maximum of 2,000 metric tons. But Royal Decree 813 of 15 July 1988 modified this limit - in effect leaving it up to the Ministry of Industry to set it - as well as the minimum storage period (two months as stipulated by a July 1989 ministerial order).[38] In 1990, ENUSA, in order to extract uranium ore more efficiently, started a new project of mine exploitation in Salamanca. This project, dubbed "Biomin."[39]

As for the nuclear fuel-fabrication plant, its maximum authorized annual production is 500 tons3 of uranium for use both in boiling water reactors, or BWRs, and in pressurized water reactors, or PWRs. From 1985 to the end of 1990, about 784 tons of U_3O_8 had been produced, enough to operate over that time period all the Spanish nuclear reactors actually in service then.[40] Among the nuclear fuel programs in which ENUSA has participated, one was with Westinghouse and involved BWRs, while the other, involving PWRs, was with General Electric. In 1989, ENUSA, together with General Electric, was awarded its first important foreign contract: it is to supply nuclear fuel to the Leibstadt power plant in Switzerland. Since 1990, exploratory talks have been going on with CISA, a French branch of COGEMA. Under the aegis of

---

36 "Informe sobre la Industria española, 1989", Secretaría General Técnica del Ministerio de Industria y Energía, Secretaría General Técnica, pp. 163-165 and "Informe al Congreso de los Diputados ...", op.cit. note 30, p. 92, and "Informe al Congreso de los Diputados sobre las actuaciones energéticas en 1988, p. 93.

37 "ENUSA Memories, 1987/1988/1989 and 1990".

38 "Informe sobre la Industria", op.cit.

39 "ENUSA Memory of 1990", p. 13.

40 "ENUSA Memory of 1990", pp. 16-17.

the Spanish state, another program, called "Trewa" and aimed at developing a new fuel element for use in German PWRs. Since 1989, the COCOM export guidelines have reportedly been applied to all of ENUSA's exports.

3.2 Back end of the fuel cycle

A ministerial order of October 31, 1989, allowed ENRESA to expand its storage facility for radioactive waste at El Cabril, Sierra Alberrana, the only such site in Spain for low- and medium-level radioactive wastes. To mollify the many district councils opposed to the storage of such wastes near their villages, a December 1, 1989, ministerial order authorized ENRESA to pay them a compensation. (This is also done in the case of intermediate storage at nuclear power plants located in the vicinity of inhabited areas.) As elsewhere, however, the issue of final waste disposal has not been resolved. Interim on-site storage can, by definition, only be temporary, for the storage capacity at nuclear power stations is limited.

As for the final storage of highly radioactive wastes, Spain submitted to the EC a plan (now on ice) for building a pilot underground facility (the so-called IPES project) near the village of Aldeadávila de la Rivera (in the Salamanca area). Originally, three implementation phases were planned for this Ptas 8,000 million project: 1987-1989, 1990-1994 and 1995-2000.[41] Though it would have be financed to 50 percent by the EC and involved the transfer of state-of-the-art technology to Spain, the project soon ran into a number of stumbling blocks: first, popular opposition to it made itself felt in a widely publicized campaign of signatures. Second, the planned location of the site, just one kilometer from the Portuguese border, created diplomatic problems, as Portugal feared that possible radioactive leaks would also affect its territory.[42] Though the postponement of the IPES project prompted an ENRESA spokesperson to say that Spain was "very far from selecting a site for a permanent repository for its highly radioactive waste,"[43] this company, in cooperation with INITEC, is working on a new project for just such a repository.[44]

---

41 "En busca de una tumba para la basura nuclear" in: CAMBIO 16, No. 813, 29 June 1987.

42 "En busca de una tumba", op.cit.

43 "Seis Universidades buscan asilos naturales para los residuos nucleares" in: EL SOL, 20 August 1991.

44 Castro, P.: "Desarrollo tecnológico del INI en 1990" in: ECONOMIA INDUSTRIAL, November-December 1990, pp. 55-56.

Although the outlines of a "Third General Plan for Radioactive Waste" can be found in appendix to the new PEN, so far, ENRESA has not begun with the dismantlement of the Vandellós I power plant. as both the potential costs of such an undertaking and the future use of the site have been determined yet. On the other hand, ENRESA will be allocated 1.2 percent of the receipts from the electricity bill to cover the costs of dismantling those nuclear power plants nearing the end of their lifetime.

The public engineering company INITEL and the private engineering company Empresarios Agrupados are among those Spanish firms capable of competing in the world market. For Spanish firms, a most important step in this direction will be the construction of a Spanish 1,000 MW (AP-1000) nuclear reactor. In this project, Westinghouse will join INITEC and ENASA as nuclear equipment suppliers, ENUSA as nuclear fuel manufacturer and UNESA as the representative of the electric companies.[45] The final cost of the project amounts to U.S. $ 1,700 per kw, of which the Spanish investment will be Ptas 5,000 million, 50 percent of this sum being financed by the Spanish Office for the Coordination of Energy Research. ENASA also will join Westinghouse in developing the so-called Passive-600 Reactor. As for the important Siroin project, it involves both design and manufacture of a robot for maintenance services in nuclear plants.[46] Also, INITEC is currently involved as a partner in advanced nuclear R & D programs. Its most ambitious project is to help build the first Spanish cyclotron. Owing to its estimated cost of Ptas 22,000 million, there is some doubt as to whether this project will ever be completed, at least in the foreseeable future.[47]

A new three-year plan for energy research (PIE 89) is currently winding down. It has a Ptas 62,540 million budget, of which 39 percent were contributed by the state.[48] The section titled "Nuclear Subsector" limits itself to the first and second phase of the nuclear fuel cycle, spelling out the steps necessary to achieve the objectives of the National Radioactive Waste Plan (for example, how to go about dismantling a nuclear power plant).[49]

---

45 "El diseño del reactor AP-1000 da Autonomía a la industria nacional" in: CINCO DIAS, 12 May 1989, p. 27.

46 "Desarrollo tecnológico del INI en 1990" op.cit., pp. 55-56.

47 "El acelerador de partículas que España estudia construir costaría 22.000 millones de pesetas" in: EL PAIS, 28 December 1990.

48 "Informe sobre la Industria española" op.cit., p. 183.

49 "Informe al Congreso de los Diputados" op.cit., p. 137.

The Spanish nuclear industry has taken giant steps over the last three years. Its further development, however, will be negatively affected by the extension of the nuclear moratorium. And the vapor generators of Almaraz I and II, as well as those of Ascó I and II, will have to be replaced, at considerable cost, by 1996. This, too, will put additional strain on the nuclear industry.

4. Spain's Nuclear Arms Control Policy

Officials of the Foreign Ministry's General Directorate for Security Matters and Disarmament opine that Spain, a non-nuclear-weapons state, cannot tell the nuclear-armed powers how to control and manage their nuclear arsenals. Spain's contribution to nuclear arms control, they say, consists in making a recognition of the nuclear arsenals' reduction and to pressing for drastic cuts in nuclear weapons (to the lowest possible level) but not for their elimination, since Spain remains a staunch supporter of the strategy of nuclear deterrence.[50]

Spain has consistently backed all NATO disarmament initiatives. For example, Madrid applauded as a move consistent with the realities of the post-Cold War era the September 1991 decision by the United States to withdraw all its tactical nuclear weapons (except those on aircraft) from Western Europe. The Spanish Foreign Ministry's well-known view that a larger number of nuclear weapons does not necessarily mean a higher level of security has found a favorable echo in the country's political parties and public opinion.[51]

For Spain, one of the most important events of these last years in the arms control and disarmament field was the December 1, 1988, signing of the "Agreement on Defense Cooperation between the United States of America and the Kingdom of Spain." This agreement, however, also ignited a controversy in Spain as the United States got its way after it insisted on adding a special clause to the agreement permitting it to introduce nuclear arms or nuclear components "in transit through Spain's territorial waters" without the parties being allowed to ask questions as to the nature of armaments on board.[52] This issue could violate the terms

---

50 Interviews with officials from the General Directorate for Security Mattes and Disarmament.

51 See "Gorbachov alaba la iniciativa unilateral de EE.UU." in: EL PAIS, 29 September 1991.

52 "Agreement on Defense Cooperation between USA and the Kingdom of Spain" on 1 December 1988 (BOE No. 108, 6 May 1989).

of the NATO referendum.[53] The "no asking" clause, however, applies both ways, as Spanish warships may call at U.S. ports unchallenged and uninspected, too (appendix 3 of the agreement). Moreover, "American Embassy Note number 1006 on Nuclear Incidents" and the "Spanish Reply to Note number 432/12," establish the amount of the indemnity to be paid by the United States to Spain in case of a nuclear accident caused by U.S. nuclear arms or equipment while at Spanish ports or in Spanish territorial waters.[54] Article 25.1. of the agreement allows both unlimited overflight of Spain and passage through its airspace by U.S. military aircraft. This includes the possible use of Spanish airspace (through flights) by nuclear-armed U.S. military planes. (In an exchange of notes with the U.S. government, Spain feebly protested such an inclusion.)

The agreement also provides for a progressive reduction in U.S. military forces stationed on Spanish soil. This involves the withdrawal from Spain of the U.S. 401st Tactical Fighter Wing (operating out of the large Torrejón Air Force Base) over a period of three years after the coming into force of the agreement. The drawdown has been criticized both by the right-wing parties (which find it excessive) and by the left-wing parties (which regard it as insufficient). It affects the Zaragoza air base, too.[55]

The nuclear-weapons issue also affects Spain's relations with its NATO partners. The implications for Spain of a military crisis in which nuclear weapons would be moved around are currently defined as follows: nuclear weapons would be permitted to transit through Spain but would not be deployed there. The dispute with London over Gibraltar also complicates Spain's position in the Atlantic alliance, for Britain, a NATO nuclear weapons state maintains a base there; it is under NATO command (GIBMED), which Spain does not recognize. Furthermore, Spain's ambiguous position of not participating in the alliance's integrated military structure while being a member of the Military Committee (the body overseeing the military structure) has drawn criticism at home and abroad.

---

[53] Perez Gonzales, M.: "Análisis del Convenio entre el Reino de España y los Estados Unidos de América sobre Cooperación para la defensa" in: Tiempo de Paz, No. 13, Spring 1989, p. 26.

[54] These two notes are incorporated into the agreement.

[55] The USA conceded a total of Ptas 300,00 million to Spain from 1977 to 1987 for this concept.

Spain's membership in NATO, however, has not really suffered as a result of these relatively minor irritants. It is seen as satisfactory and contributing both to the country's security and that of the Mediterranean.[56]

Spain's accession to the Western European Union (WEU) in 1988 has been somewhat more controversial. First, an automatism built in the WEU treaty obliges its parties to come to one another's defense in case of outside aggression against any one of them. This runs counter to Spain's military tradition, which has always confined itself to the defense of the sole national territory. Second, the Paris agreement obliges WEU member states, in principle, to tolerate the presence of nuclear weapons on their respective territory or in their territorial waters. Coming hard on the heels of the U.S.-Spanish defense cooperation agreement (which, as seen above, contains a similar clause), this provision of the WEU treaty proved rather hard to swallow for the anti-nuclear opposition in Spain.[57]

As a loyal NATO member, Spain eagerly supported arms control negotiations and ensuing agreements (the INF and START treaties), as these accords conformed with the country's oft-stated desire for substantive cuts in nuclear arms. Because these treaties did not directly affect Spain, however, the public there paid somewhat less attention to the talks leading to them than did people in other European countries and in the United States.[58]

5. Tightening Spain's Export Control Laws

In the last four years, Spain, to conform with the strict standards imposed by international agreements, has approved new legislation tightening controls on its nuclear exports. The new legislation was overdue, as the first laws and guidelines regulating Spain's foreign trade in nuclear products and defense matériel date form the mid-1990s.

---

[56] "PSOE y PP acuerdan eludír el decálogo de paz y seguridad de 1984" in: EL PAIS, 26 June 1991.

[57] Grasa, Rafael: "El decálogo al completo: Balance de la política exterior y de seguridad española" in: Anuario del CIP, 1988-89, Madrid 1989, p. 140.

[58] "Spain's Nuclear and Non-Proliferation Policy", op.cit., p. 100.

5.1 Spanish Legislation on the Export of Defense Matériel and Dual-Use Products and Technologies

In 1985, on becoming a COCOM member, Spain passed its first export control law. It codified the re-exportation by third parties of dual-use technology to countries on the COCOM list, making the "International Certificate of Importation" mandatory. This law remained in force until May 30, 1990, at which time Royal Decree 480/1988 of March 25, 1988, finally took effect. This decree also called into life an "interministerial junta to regulate the commerce in defense matériel and dual-use products and technologies," or JIMDDU, as it is known under its Spanish acronym. This committee has the general secretary of commerce as its chairman and the Foreign Ministry's undersecretary as its vice chairman. Its other members are the director general for armaments at the Defense Ministry, the director general for foreign trade, the director general for Customs, and the secretary general for technology, all three from the MInistry of Industry Commerce and Tourism.[59]

The royal decree did not take effect until after lists of "sensitive products" (dual-use armaments, equipments, products and technologies) had been approved by the Spanish cabinet and officially published.[60] These lists, called Relación de Material de Defensa y Relación de Productos y Tecnologías de Doble Uso (List of Defense Matériel and List of Dual-Use Products and Technologies) were approved on June 23, 1989, and May 29, 1989, respectively. And they were published on February 7, 1990, and February 8, 1990, respectively.[61] Royal Decree 480/1988 thus entered into force on May 30, 1990. It was the first step since 1985 toward controlling exports of "sensitive products."

The authorization of the Ministry of Industry, Commerce and Tourism is now required before materials and equipments on the COCOM list can be exported or re-exported.[62] As for those products and technologies whose exportation is subject to the prior control of the "junta," they figure in appendix two and appendix three of the lists, which also contain, for the benefit of interested manufacturers, important information on export control documents with administrative flexibility.[63]

---

59 "Spain's Nuclear and Non-Proliferation Policy", op.cit., p. 109.

60 Article 1 from "Real Decreto 480/1988".

61 The Ministerial Order dated 23 January 1990.

62 Interviews with ministry officials.

63 Avila, A.M. and Portillo, J.M.: "Nueva normativa del comercio exterior de material de defensa y tecnologías de doble uso" in: Boletín de Informaciòn Comercial Española, Nr. 2.240, from 2 to 8 July 1990, pp. 2603-2608. It is a very interesting article for this issue.

Because of the innovations it introduces, the January 23, 1990, ministerial order mandating publication of the lists cannot but play a very important role. Since then, the General Directorate for Foreign Commerce and the General Directorate for Customs and Special Taxes share responsibility for export controls.[64] And this has resulted in three new types of export licenses' being introduced:

a) export licenses for single transactions,

b) open distribution and export licenses, and

c) an updated and improved version of a previous export license agreement.[65]

Another new feature is that the type of export license needed now depends on the country of final destination ("end user") of the merchandise, whose name must also appear in the export documents. For example, an open license can be used only if the end user is another COCOM member country. Another ministerial order, that of January 31, 1990, rounds out this new regime, in that it establishes a so-called Special Export Registry for Defense Matériel and Dual-Use Products and Technologies. If a firm is struck from this registry, all export licenses already issued to it are revoked at once.

After joining the 1987 Missile Technology Control Regime (MTCR) in 1989, Spain, by a July 31, 1990, ministerial order, published (as appendix B to the list on defense matériel) an appendix to the MTCR guidelines on equipments and technologies. These are considered "sensitive products," and, as such, they cannot be granted an open export license but must be cleared on an individual basis by JIMDDU before they can be exported. Though officials of the Defense Ministry, the Ministry of Industry, Commerce and Tourism, and of the National Institute for Aerospace Technique (INTA) participate in the activities of the MTCR Working Group, they do so in a very flexible manner, which, however, remains in line with the practices of the other EC members of this group.

Also, in May 1992, Spain joined the Zangger Committee, a group of experts from NPT signatory states, which have drawn up, and regularly update, a list of items triggering safeguards in case of cross-border transfers.[66]

---

64 "Nueva normativa", op.cit. pp. 2605-2606.

65 See Order dated 21 February 1986 (BOE No. 48 dated 25 February 1986).

66 Interviews with officials of the Ministry of Energy, Commerce and Tourism and the Foreign Ministry.

Moreover, a new law designed to prevent and punish illegal transfers of sensitive items is currently being drafted.[67] Finally, also in 1992, Spain joined the other EC members in adopting full-scope safeguards as a condition for nuclear exports.

5.2 Spain's Nuclear Trade Activities

During the past years, Spain has been quite active in the field of nuclear trade. In the framework of a 1989 nuclear cooperation agreement with Argentina, not only has Spain provided significant financial aid to Buenos Aires for its nuclear programs (U.S. $500 million in January 1990, together with Germany, for the financing of the Atucha 2 nuclear power plant),[68] but also nuclear technology, heavy-water reactor equipment and reactor pressure vessels (1990, through ENSA). Also, Spain has collaborated with Iran since 1986. Criticism arose when, in February 1990, an agreement between Tehran and Madrid was signed to complete, with the participation of INI, ENSA and ENUSA, two nuclear power plants started (and later abandoned) by the Germans near the Iranian town of Bushire. In September 1990, Bonn urged Madrid to end its construction work there.[69] In 1987, Spain already had exported to Iran (through EMA) equipment for light-water reactors and technology for BWRs and PWRs, and, in 1990, for heavy-water reactors.[70]

In 1989, through ENRESA, Spain exported to the United States special technology for waste-management plants. To be sure, however, by far the most interesting cooperation project between the United States and Spain is that involving the formation of a consortium of companies from both countries to develop a new 1,000 MW PWR. (In June 1989, Spanish firms began participating in the development of a reactor based on Westinghouse's APWR technology. And in November 1990, UNESA began to cooperate with the U.S. Electric Power Research Institute in designing a so-called passive reactor.)[71]

In the last decade, Spain has exported nuclear know-how and technology to "threshold" countries as well. In 1980, Spain initiated a nuclear

---

67 Interviews with officials of the Ministry of Energy, Commerce and Tourism in May 1992.

68 EYE ON SUPPLY, No. 2, Fall 1990, p. 25.

69 EYE ON SUPPLY; op.cit.

70 EYE ON SUPPLY, No. 3, Winter 1990/91, pp. 41-49.

71 EYE ON SUPPLY, No. 4, Spring 1991, p. 62.

assistance program with Pakistan, which, over the last four years has consisted mainly in helping Islamabad with the design of its reactors but has also involved the transfer of technology through two Spanish companies Sener and Technatom. Following the signing of a nuclear cooperation agreement with New Delhi in July 1988, Spain has exported, through ENSA, turbines and steam-generator facilities, as well as nuclear technology, to India.[72] Technatom also exported technology for BWRs and PWRs to Brazil in 1990. Also, Spain has continued its large scale transfer of light-water reactor technology to Beijing.

Spanish nuclear-technology companies have also maintained their commercial ties with Mexico, Belgium, Holland, Great Britain, France, Switzerland, Italy, Cuba, Poland, and Hungary.

Three of Spain's transactions in nuclear fuels and technologies drew domestic and international fire:

o In the spring of 1988, there was a spate of rumors about an alleged sale of weapons-grade plutonium (reportedly stemming from the Vandellós I nuclear power plant) to a foreign company (EDF, COGEMA, ENEL or KWU). The Democratic and Social Center (CDS), a Spanish opposition party, fanned the rumors even further when it brought up the alleged sale for discussion in the Cortes. The government of Prime Minister Felipe González simply dismissed the allegation as groundless.[73]

o In 1989, Mr. González's government refused to grant the Spanish nuclear industry a license for the construction of two 982 MW nuclear power plants in Israel, a project worth an estimated U.S. $4,000 million. Political pressures and nonproliferation concerns led to Spain's withdrawal from the project.[74]

o Spain came under heavy international criticism when, in 1988, it bought uranium from Namibia and South Africa, two countries that were then subject to UN-imposed economic sanctions.

6. Spain and the IAEA

The Ministry of Industry, Commerce and Tourism, the Foreign Ministry and the Permanent Spanish Mission in Vienna - all have characterized

---

[72] EYE ON SUPPLY, No. 3, op.cit.

[73] "Los residuos de Vandellós regresan a Espanña en forma de plutonio" in: INTERVIU, 8 June 1988, pp. 30-36.

[74] "Atomos españoles para Israel" in: EL PAIS, 28 October 1990, pp. 6-7 (Sunday Report).

as excellent Spain's relationship with the UN-sponsored International Atomic Energy Agency (IAEA) over the last three years. This is reflected in the fact that Mr. Arias Delgado, the Spanish delegate to the IAEA, is held in high esteem in Spain, too, and that the director of all administrative services of the agency is a Spaniard.

In compliance with the safeguards agreement signed with the IAEA, Spain opens all its nuclear installations and materials to the agency's inspectors. At the Fourth NPT Review Conference held in 1990, the head of the Spanish delegation praised the role of the agency, strongly backed its system of safeguards and called for a strengthening of its powers. He called the IAEA a "major factor for nonproliferation" and also said that "it must play a leading role in promoting the peaceful use of atomic energy."[75]

Spain's membership in Euratom greatly facilitates that country's relationship with the IAEA, as this enables it to delegate some of its IAEA tasks to the EC body. The Spanish delegation to the IAEA comprises three senior officials: the ambassador, another diplomat, and a member of the Ministry of Industry, Commerce and Tourism, who doubles as an adviser in technical matters. At the IAEA annual conference, the Spanish representative to the agency's Board of Governors is assisted by Spain's general secretary of energy.[76] Spain is not a permanent member of the Board of Governors but was represented in 1987, 1988 and 1989. Over the past four years, Spain has participated in several IAEA projects: Research Reactor Conversion (CO/4/006), completed in June 1989; Probabilistic Safety Analysis (INT/9/063) completed in February 1989; Radiation Protection Services (INT/9/064), which measured internal contamination in Spanish power plants and was completed in July 1989.[77] In November 1987, inspectors of the agency's Operational Safety Review Teams (OSART) visited units 1 and 2 of the Almaraz nuclear power plant, and from January 22, 1990, to February 9, 1990, the Cofrentes installation.[78] In 1988, Spain adopted the IAEA-sponsored Joint Protocol on Improvement of International Compensation System for Nuclear Damage. Also, in November 1990, Spain signed a contract

---

75 Speech by H.E. Fernando Perpiñna-Robert, Political Director, Spanish Ministry of Foreign Affairs, at the opening session of the Fourth NPT Review Conference, Geneva, 22 August 1990.

76 "Spain's nuclear and non-proliferation policy", op.cit., p. 111.

77 For further information on these programmes see: "The Agency technical co-operation activities in 1989", Report by the Director General, GC(XXXIV)/INF/280, IAEA, Vienna 1990.

78 "IAEA Newsbriefs", Vol. 5, No. 2 (42), March 1990, IAEA, p. 3.

with the IAEA to provide the Paks Nuclear Power Plant Company of Hungary with a system that will allow this company to conduct in-service inspections.[79] Through the organization of seminars and training courses financed by Spanish government scholarships, Spain's Council for Nuclear Safety (CSN) remains in permanent contact with the IAEA.

In 1990, Spain increased its financial contribution to the IAEA. It now amounted to U.S. $180,000 for the general technical assistance fund and to U.S. $341,000 for specific projects.[80] In 1994 the amount for the technical assistance fund will be doubled to U.S. $360,000[81] - this latest increase in order to bring the Spanish share more in line with the average share contributed by the other EC countries. As for the number of Spanish IAEA inspectors, it will increase to five.[82] A Spaniard was on the team that conducted the IAEA's seventh inspection mission in Iraq.[83]

7. Spain's Role in Nuclear Diplomacy

7.1 The Fourth NPT Review Conference

After signing the Nuclear Nonproliferation Treaty (NPT) on November 5, 1987, Spain began to regard as very important its participation in the 1990 Fourth NPT Review Conference - to the point of lobbying strenuously to be awarded a vice presidency at this conference.[84] Spain praised the NPT as an "essential instrument for the control of nuclear proliferation," as well as for the "fostering of international cooperation and technology transfer for peaceful uses."[85] During the course of the conference, Madrid also pointed out that the NPT was by no means a "perfect treaty," thus making essential a strict compliance with the safeguards provided for in its Article III. It also believes that articles IV and VI of the treaty should be adhered to scrupulously, if it is to have any future. In this sense, Spain would back a maximum extension of the NPT at the next

79 EYE ON SUPPLY, No. 4, Spring 1991, p. 61.

80 Data provided by the Spanish ambassador to the IAEA.

81 Interviews with officials of the Ministry of Foreign Affairs.

82 Data provided ... to the IAEA, op.cit.

83 Interviews with officials of the Ministry of Foreign Affairs.

84 Interviews with officials of the General Directorate for Disarmament.

85 Speech by H.E. Fernando Perpiñá-Robert, op.cit.

review conference in 1995 - if not for an indefinite period of time, then at least for another 25 years. Madrid does not share the view that the 1995 conference should modify the treaty, just confine itself to its extension.

7.2 The PTBT Amendment Conference

Spain supports a gradual reduction in nuclear tests, a step-by-step process that would eventually lead to their total elimination. Madrid underscored this standpoint at the January 1991 Partial Test Ban Treaty (PTBT) Amendment Conference. Nuclear disarmament is to be achieved first, a permanent ban on nuclear testing later, not the other way around, said Spain. (This also happened to be Madrid's position at the Fourth NPT Review Conference, in which Spain denied its support to a proposal by Mexico to convert the PTBT into a comprehensive test ban treaty.) In Madrid's view, a total ban on nuclear testing at this point in time would seriously undermine the strategy of nuclear deterrence (in line with the Bush administration's argument that nuclear testing is necessary to ensure confidence in the reliability of the nuclear stockpile and thereby maintain the credibility of nuclear deterrence), which Spain supports. That country's participation in the PTBT conference was tinged with a good measure of pessimism as to its outcome, for it was known in advance that reaching an agreement would prove very difficult. This is why the Spanish delegation to that conference was smaller and lower level than the one that took part in the NPT Review Conference.

7.3 The Nuclear Suppliers Group

Itself an important nuclear supplier, Spain supports both the goals and initiatives of the Nuclear Suppliers Group (NSG), whose ranks it joined in 1987. Madrid assessed as very positive the results of this group's informal meeting in March 1991 and backed the U.S. initiative to establish a control list for dual-use nuclear items. It did so somewhat reluctantly, however, as this initiative, had it been implemented, could have harmed not only Spain's nuclear industry but its industry in general. Spain clearly favored the alternative list proposed by the Netherlands, Germany, Japan and other EC countries,[86] which more closely resembled the COCOM list. This was a very delicate matter for

[86] Interviews with officials of the Ministry of Foreign Affairs (with special thanks for the information given in this point and about the EPC).

Spain, and it was discussed in great detail at an interministerial meeting bringing together senior officials of the Foreign Ministry and of the Ministry of Industry, Commerce and Tourism. In January 1992, however, at a meeting of the NSG working group at Interlaken, Switzerland, Americans, Japanese and Europeans narrowed their differences on the nagging issue of the control list for dual-use nuclear items, and achieved a final consensus on this list at their Warsaw meeting in April 1992. Madrid, which over the years has attended all the meetings of the working group (and lobbied hard for a compromise on the control list), enthusiastically welcomed the agreement.[87]

The Spanish delegation to the NSG comprises: the area director for international economic relations (REI), who is a senior Foreign Ministry official and the delegation's chairman; one representative from the Defense Ministry; and two representatives from the Ministry of Industry, Commerce and Tourism (one for Industry and one for Commerce).

8. Spain and the European Community/EPC

Spain has made every effort to bring its nuclear policy into line with that of its EC partners, being a party to all EC agreements and supporting all the nonproliferation initiatives stemming from the Community or its permanent mechanism called European Political Cooperation, or EPC (this mechanism enables the 12 EC member states to coordinate national foreign policies).

Spain, both through its verbal note of September 28, 1988, and its permanent EC representative, informed the EC Council of Ministers of the Spanish government's decision to join the EC's Common Policy Declaration. Over the last three years, Spain has participated in a number of nuclear cooperation projects among the EC twelve: the so-called Querqus project (November 1989) which will lead to a doubling of the Spanish production of U-308 and has been granted a subsidy covering 50 percent of its total cost by the European Fund for Regional Development. This, in turn, led, in 1990, to the signing by ENRESA (a Spanish firm specializing in the treatment of radioactive wastes) of a cooperation agreement with the European Community. This agreement provides, within the framework of the EC's 1980-92 research program on the storage of radioactive waste, for the expansion (to a total projected capacity of 60,000 cubic meters) of the El Cabril storage facility for low- and medium-level radioactive waste.[88] More recently, under the aegis of

[87] Speech by H.E. Fernando Perpiñá-Robert, op.cit.

[88] "La Energía en Europa", No. 15, op.cit., pp. 34-35.

the "World Association of Nuclear Operators," Spain has joined in with Belgium, Britain, Denmark, France, Germany, and Italy on a program to help the European Community administer funds earmarked for safety-related upgrades of about 30 VVER-440 nuclear reactors supplied by the former Soviet Union to countries in Eastern Europe.[89]

Spain, which was admitted to the European Community in 1986, became an EPC member the very same year. And three years later, in the second half of 1989, it held both the EC rotating presidency and the EPC chairmanship. The Spanish delegation to the EPC Working Group on Nuclear Nonproliferation consists of the deputy general director of REI, who is also the delegation's chairman; a member of the International Technical Cooperation Directorate, who serves as its vice president; the deputy general director for nuclear energy; and one member of the Council for Nuclear Safety (CSN).[90] Through the frequent meetings held by officials of the Commerce ministries of the EC member states, Spain also takes an active part in the work of the EPC Subgroup for Export Control. Spain now regards EPC as well-nigh indispensable when it comes to harmonizing the EC member states' various standpoints on nuclear nonproliferation issues. In this sense, with the publication of its "Lists for Dual-Use Products and Technologies," Madrid feels it has brought its nuclear export legislation on a par with that of its EC partners.

During its chairmanship of EPC in the second semester of 1989, Spain intensified EC efforts for a successful outcome of the Fourth NPT Review Conference; coordinated EC policies in two nonproliferation forums, the IAEA and the UN General Assembly; and intensified contacts with South Africa in order to convince that country to sign the NPT.

At present, two nonproliferation-related issues are the focus of Madrid's attention: that of a complete harmonization of the EPC members' legislations as regards the export of dual-use nuclear items, and that of the stamping out of Iraq's nuclear program.[91]

Spain's active participation in EPC has strengthened that country's position on the international stage and dispelled any doubts as to its strict anti-proliferation policy.

---

89 "Programme for Promoting Nuclear Non-Proliferation", Newsbrief, No. 14, Summer 1991, p. 3.

90 "Spain's Nuclear and Non-Proliferation Policy", op.cit., p. 111.

91 see note 86.

9. Conclusion: More Changes in Store?

As we have just seen, Spain's overall nuclear policy has followed the guidelines established in 1982, when the Socialist Party came to power: On the hand, it has remained a non-nuclear-weapons state (and, to all intents and purposes, committed itself to this status by signing the NPT). On the other hand, through the extension of the "nuclear moratorium" and its opting for alternative energy sources (such as natural gas from Algeria), Spain has committed itself to a fundamental revision of its energy policy. No doubt, this decision will be subject to more criticisms in the future, particularly since it affects the nuclear industry and the electric utilities. It appears unlikely, however, that the new PEN will be rejected by the parliament.

Since signing the NPT in November 1989, Spain has become integrated into various international nuclear nonproliferation forums (NPT Review Conference, PTBT, NSG, IAEA, EPC) and has proved to be an active participant in them. It also participates in a number of nuclear cooperation programs within the European Community.

As for its legislative activities on nuclear export issues and nuclear trade, Spain has made an outstanding effort to update its legislation and bring it on a par with that of its EC partners. And this efforts has paid off: Spain's nuclear export laws have now become as stringent as its partners'. Spain's decision to join the Zangger Committee is another step toward the normalization of its export policy.

Finally, at the domestic level, opposition to nuclear energy grew even stronger following the Vandellós nuclear accident.

Thus, the years 1987-91 witnessed the normalization of Spain's nuclear policy: From being an outsider, Spain emerged as a normal, if important, non-nuclear-weapons state and a faithful member of the nonproliferation regime.