PRIMERA REUNION DE REVISION DE LA CONVENCION CONJUNTA

RESPUESTA A LAS PREGUNTAS RECIBIDAS SOBRE EL INFORME NACIONAL DE ESPAÑA

- 10 DE NOVIEMBRE DE 2003 -

NOTA ACLARATORIA: ESTE DOCUMENTO SOLO EXISTE EN INGLES, AL SER ESTE EL LENGUAJE DE TRABAJO DE LA CONVENCION

PRIMERA REUNION DE REVISION DE LA CONVENCION CONJUNTA

PREGUNTAS AL INFORME NACIONAL

Nº	PREGUNTA/COMENTARIO	RESPUESTA
1	Are there spent SIR used in the army (e.g. for technological purposes or calibration of dosimetry equipment) and, if any, are they subject to this convention?	In Spain there are only two ways, acceptable by regulations, to manage with spent sources: ▪ To send them back to the purchaser (the preferred option) ▪ To transfer them to a company authorised for radioactive waste management (actually only ENRESA). In Spain there are many radioactive sources owned by military licensees, all of them for peaceful uses as medicine (radiotherapy, nuclear medicine, laboratories) and industry (mainly gammagraphy). Also there are some Dosimetry Services owned by military licensees using small radioactive sources for calibration purposes. All these sources are subject to this convention and to the same licensing procedures required in regulations for sources owned by non military licensees and are purchased by authorised vendors complying with all the quality requirements needed to assure safe performance (activity certificate at date of manufacture, leak tests certificate …). No spent sources are used in the army.
2	What are the characteristic peculiarities in the process of licensing El Carbide Disposal Facility in connection to the presented in compliance with Article 19 general procedure for licensing a facility for RAW management in Spain?	Since it was the first time that a license was requested for a facility aimed at the final storage of low- and medium-level radioactive wastes, some peculiar criteria were applied, as follows: 1. In addition to the documents required for the nuclear installations, in this type of facilities, an additional document was requested: a Report on "*Waste acceptance criteria*". 2. The licensing process was split into three phases of the installation's life: 1st) *operation*; 2nd) *institutional surveillance*; and 3rd) *free use*, and the demandable documents were adapted on the basis of the characteristics of each phase. During the process, all the documents related to the safety of the facility were calculated and evaluated for a time span of *300 years*, a far longer term than the ones applied for the estimation of the useful life of the other nuclear facilities.

PRIMERA REUNION DE REVISION DE LA CONVENCION CONJUNTA

PREGUNTAS AL INFORME NACIONAL

Nº	PREGUNTA/COMENTARIO	RESPUESTA
3	In spite of its legislative establishment, whether the state enterprise responsible for radioactive waste management (ENRESA) is subject to licensing and inspection?	ENRESA is considered the licensee for all the facilities where it is licensed, therefore is subject to the same regulatory control and supervision as a private operator of a nuclear facility. This means that ENRESA has to fulfil all applicable requirements of Spanish regulations for nuclear facilities, including those related to the operator organisation, and CSN has the corresponding programme to audit its compliance and to inspect the facility and the organization.
4	What are the basic legally established requirements considering the structure and the content of the PSS (Preliminary Safety Study) for a near surface disposal facility for low- and medium- active short-lived RAW?	As mentioned in the national report, the facilities for the storage of low- and medium-level radioactive wastes are classified as nuclear facilities in accordance with the Spanish legislation. The Regulation on nuclear and radioactive facilities establishes that the applicant requesting a licence for the construction of a nuclear facility must file a preliminary safety report and that the contents of the latter must be as follows: • Description of the site and of its surrounding area, including updated data on the parameters that have an incidence upon nuclear safety and radiological protection, including those related to demography, ecology, and soil and water usage, and any data that may contribute to a better knowledge of the site, as well as the plans for surveillance and verification of the basic parameters representative of the site. • Description of the facility, including the criteria followed for the design of the components or systems on which the safety of the facility is based. • Analysis of any foreseeable accidents and their consequences. • Analytical radiological study including a theoretical assessment of the facility's potential radiological impact on the population and the environment. • Update of the organisation foreseen by the applicant for supervising the execution of the project and guaranteeing quality during the construction work. • Organization foreseen for the future operation of the facility and preliminary programme for the training of the operation personnel. • Pre-operational environmental and radiological surveillance programme, using as a basis the conclusions reached during the

Nº	PREGUNTA/COMENTARIO	RESPUESTA
		analytical radiological study, allowing for establishing the reference level or the radiation background of the surveyed area. • Quality assurance programme of the construction. • Technological, economical and financial provisions for decommissioning and closure. • Administrative concessions and amortizations to be granted by other ministries or public agencies, or the documents proving that they have been requested fulfilling all the necessary requirements. Item 11.4.2 of the national report contains details on the safety principles and criteria applied to radioactive waste management facilities in Spain.
5	What are the criteria for acceptance/disposition of the RAW into a near surface disposal facility: a) considering the form of the waste; b)considering the form of the package.	The waste acceptance criteria include requirements to the waste form and to the waste package in order to assure the fulfilment of the first barrier (the conditioned waste) with the safety objectives. The scope of the criteria cover the classification of the waste packages (in terms of specific activity), unacceptable substances, limitations on some components, methodology for the characterisation, acceptance and control processes as well as mechanical, confinement and durability limits to be complied by the different waste package configurations.
6	How are practically measured and separated high level RAW (HLW) from the long-lived waste (LILW-LL)? Who carries out this activity and where does this take place?	The producers, in accordance with the contract signed with ENRESA, have to inform on the isotopes easy to measure through non-destructive techniques. Based on this information, ENRESA applies scaling factors to calculate other isotopes significant in accordance with the safety study of El Cabril disposal facility. If the waste package complies with the limits currently in force for the wastes amenable to be disposed of at the El Cabril facility, these wastes will be accepted. In case the radioactive waste package does not comply with these limits, then a decision is taken case by case. Currently, the waste not suitable for disposal at El Cabril facility are: the spent fuel, vitrified waste and LILW from Vandellós I SF reprocessing, ILW generated in NPP's

Nº	PREGUNTA/COMENTARIO	RESPUESTA
		decommissioning, long lived-LLW and other spent sealed sources. The general policy for these wastes is temporary storage until the decision on their final disposal. It is foreseen the construction of a centralized storage facility for this kind of waste. Up to date SF is safety stored at the NPP's installations, wastes coming from reprocessing are stored in France and, in the case of the management of spent sources, radium sources were sent to USA, americium sources from lightning rods are recycled in UK, and other sources are managed case by case.
7	How is it determined that the requirements and regulations currently in place are effective in maintaining doses as low as reasonably achievable, social and economic factors taken into consideration, that the burden on future generations is minimized and that releases to the environment have no adverse short- or long-term effects ?	In so far as the protection of the public is concerned, the systems for the processing of radioactive effluents from nuclear facilities must be designed in a way that they can comply with certain generic dose values allowing to consider that the facility is implicitly optimised. Furthermore, the operating licenses of those facilities establish, as a part of their Operating Technical Specifications (OTS's), a system for the limitation, surveillance and control of radioactive effluents, including: the discharge limits, the sampling and analysis programme required to verify compliance with the limits, the mandatory performance of monthly dose calculations and of dose estimations for the last 12 consecutive months, the minimal radioactive liquid and gaseous effluents monitoring instrumentation, as well as the operability requirements, the surveillance tests and the set points determination and the operability and use requirements for the effluent treatment systems, involving a projection of the doses in order to schedule the processing of the effluents before their discharge outside the facility.

Nº	PREGUNTA/COMENTARIO	RESPUESTA
		The treatment systems' operability requirement allows to ensure that such systems will be available for their use whenever the effluents require being treated prior to their release into the environment, while the requirement for the use of those systems provides certainty on the fact that the releases of radioactive materials in effluents will be kept as low as possible. On the other hand, the effluent discharge are values derived from an optimisation process and, consequently, they are far more restrictive than the basic dose limits established in the Regulation on Health Protection against Ionising Radiations (RPSRI). Compliance with these discharge limits is guaranteed by means of a continuous surveillance of the effluents, through the application of the required sampling and analysis programme and, finally, by means of monthly estimations of the doses to the members of the public. Additionally, the CSN has established reference levels for radioactive effluents that, when exceeded, denote a deviation from the normal and expected behaviour of such effluents, requiring the performance of investigation work and, if needed, the application of corrective actions. The obtained results made evident the effectiveness of this regulatory system for the

Nº	PREGUNTA/COMENTARIO	RESPUESTA
		control of radioactive effluents, since the estimated doses for the members of the public represent a small fraction of the discharge limits. Finally, environmental radiological surveillance programmes included in the OTS's are also established; the programmes that must be implemented by the owners of nuclear facilities, allow to identify activity increases in the environment resulting from the discharge of radioactive effluents and to verify the effectiveness of the measures applied for mitigating their effects. The results of these programmes allow to guarantee that no adverse effects upon the environment are produced by the release of effluents, either in the short or long term, and that, therefore, the impact on future generations has been minimised.
8	How do the results achieved, as a consequence of applying Spain's requirements and regulations, compare with international standards or recommendations, and with neighbouring countries' requirements (e.g. Portugal, France), particularly if a natural resource such as water is shared? Are the permissible release limits under both normal and abnormal conditions developed jointly?	Within the EU, Directive 96/29/EURATOM, based on the ICRP 60 recommendations, has been transposed to the regulations of the various Member States, so that the same reference limits for the members of the public are established in all of them. In the case of Spain, the limits established in the above Directive are included in the Spanish Regulation on Health Protection against Ionising Radiations (RPSRI) and they are as follows: A 1-mSv effective dose limit per calendar year. However, under special circumstances, a higher effective dose value can be authorised within a single calendar year, as far as the average during five consecutive calendar years does not exceed the aforementioned value.

Nº	PREGUNTA/COMENTARIO	RESPUESTA
		Without prejudice of the above, 15 mSv and 50 mSv equivalent dose limits per calendar year are established for the crystalline lens and the skin, respectively. These limits apply to the total dose: external exposure and internal dose resulting from the intake of radionuclides during the corresponding period. Nevertheless, for the release of radioactive effluents from the Spanish nuclear facilities the authorised discharge limits are values derived from an optimisation process and, therefore, they are far more restrictive than the basic dose limits established by the RPSRI. Currently, 0.1 mSv/y, considered for periods of twelve consecutive months, is the effective dose limit applied in the Spanish nuclear power plants, both during operation and in their decommissioning stages,. This value refers to all the liquid and gaseous effluents released by each one of the units in a given site. The doses to the members of the public, due to the releases from the Spanish nuclear facilities, represent a small fraction of the discharge limits and, consequently, they are far lower than the dose limits established in the RPSRI and in the EU's Directive 96/29/EURATOM; therefore, they are also much lower than those included in the international recommendations (ICRP 60). For the Spanish nucler facilities the authorised radioactive discharge limits are not established jointly with our neighbour countries. However, in the case of Portugal —the only country with which water bodies are shared— both countries have signed a Protocol for Cooperation in Nuclear Safety. Within the framework of this Protocol, periodical meetings are held with regard to environmental radiological surveillance in both countries, while results and data are exchanged in connection with such surveillance.
9	In the case of radioactive waste facilities being close to borders with other countries, are there joint emergency plans and emergency exercises, and are the permissible release limits under both normal and abnormal conditions developed jointly?	The only Spanish radioactive waste facility sited near of a national border is the Quercus Milling Plant, nowadays in decommissioning process. Quercus Plant is sited at 20 Km., approximately, from the Spanish-Portuguese border. Decommissioning and post closure activities of the plant has been designed according Spanish radiological protection regulations, which are in full agreement with European Directive

Nº	PREGUNTA/COMENTARIO	RESPUESTA
		96/29/Euratom. Quercus Plant decommissioning and post closure activities has been licensed accomplishing European Union regulations and consequently, the project has been reported to the European Commission following Art 37 of the Euratom Treaty. The project had been reviewed and accepted by the Art. 37 Expert Group, in which Portugal is formally represented as an EU Member State. The European Commission assumed the Expert Group report and stated out a positive opinion on the project. Additionally, the Nuclear Safety Council and the Portuguese authorities have an agreement on the data and information exchange on respective environmental surveillance programmes. Within this agreement, each country has installed an automatic surveillance station in the territory of the other one.
10	Please explain the public consultation process prior to making decisions related to waste disposal sites, and how the results of this process are factored into those decisions.	The public consultation process of waste disposal sites is ruled by the legislation on nuclear and radioactive installations and on environmental impact. In accordance with this legislation, a public consultation procedure must be carried out after an application for the preliminary authorisation (i.e. first step of the licensing procedure) of a waste disposal installation has been filled. The public consultation period is opened for one month. Within this period of time any person or legal entity interested may argue in relation to the proposal. The comments put forward by the responders must be addressed before issuing the environmental impact assessment and the preliminary authorisation of the project.
11	Please provide more details are desirable on the technical, financial and environmental considerations related to plant decommissioning (e.g. Vandellos 1), and on the disposal of mine tailings (La Haba Mining Works - page 218).	Decontamination and dismantling activities for Vandellós-I have been extended to the conclusion of Stage 2 of Decommissioning, in June 2003. This stage includes confinement of the reactor shroud, the performance of demolition and backfilling operations and release of a large part of the site. The facility is currently being prepared for the latency period, which will be followed by total dismantling of the remaining parts of the plant (Stage 3). The rationale for postponing the dismantling in the case of Vandellós-I was mainly related to the radioactivity decay of 60-Co, the most relevant isotope under a radioactive point of view. During a latency period of 25 years the radiological activity of

Nº	PREGUNTA/COMENTARIO	RESPUESTA
		the internal structures of the pile will decay to 5% of the initial level, and dismantling of the vessel may be addressed with minimum radiological risk. At present, El Cabril repository can not accept the graphite wastes resulting from the dismantling of the reactor vessel. This, together with the dose reduction effects led to the adoption of a deferred safestore strategy for the only Spanish gas-graphite reactor of Vandellós-I. One of the essential points of Vandellós-I project is the exhaustive control of all the materials arising at the site in order to segregate those considered clean from those others that have radiological implications. The estimate amount of materials removed during stage 2 until June 2003 was of 310,000 tons, including 1,900 t of low and intermediate level radioactive waste which are sent to the Waste Disposal Facility at El Cabril (Córdoba). The recycling policy at Vandellós-I has obtained 298,000 tons of recycled materials, it means a recycling ratio of 96%. This amount of recycled materials can be subdivided in the following: Recycled concrete “in situ”: 277,000 t Released Materials recycle out-sites: 20,800 t Scraps: 16,500 t Others materials: 4,300 t Materials contaminated recycled in the nuclear field: 200 t The original Design State of the plant have been recorded during construction and systems were in place to record subsequent modifications and plant operational history. However, the best source of information with regard to operational history was the site staff. This operational experience has been used at the level 2 Vandellós-I decommissioning project by direct participation of the site workforce in the decommissioning activities under the organisational structure adopted by Enresa at the site. For level 3, after the latency period, a selective retention policy of documents has being established to ensure that appropriate site records (e.g. waste inventories, engineering drawings, written or verbal testimony of plant staff, decommissioning plans etc) are stored in an accessible and retrievable form for 30 years.

Nº	PREGUNTA/COMENTARIO	RESPUESTA
		The cost associated to the decommissioning of Vandellós I NPP as of June 2003 was some 89 x 106 €. In relation to the disposal of mine tailings in La Haba, a part of the Waste Rock disposal has been stabilised in situ, the other part has been transported and used for backfilling of the open mine. The heaps with low use grade have been taken to the open pit mine and the others have been carried to the tailing clam. All the scraps components coming from the equipment disassembling and the soil clean up will be taken to the tailings clam. The cost was 10 x 106 $.
12	Please explain the relationship between CSN and EURATOM and the EC directives, and the relationship between various government departments, e.g. Ciemat, MINECO and the CSN.	In accordance with law 6/1997, representation of Spain in front of the European Union institutions is exercised by the Permanent Representation (PR) of the external services of the State General Administration (SGA). EURATOM Treaty businesses are dealt with in fora and working groups inside the EU institutions. Spain is represented in them by personnel either from the PR or from the concerned ministerial services of the SGA. Attendance of CSN personnel is also habitual in order to provide advice to the Government and to express its own opinion on those matters that fall under its competence, in accordance with the law for the establishment of the CSN. In addition, CSN may appoint representatives for permanent or open-ended working groups set up either by the Council or by the EU Commission to deal with matters related to its duties (i.e. Nuclear Regulators WG, RAMG, CONCERT, Working Party on Nuclear Safety,…). EC directives approved by the Council of the EU are transposed into our national legislation. All the institutions affected by its provisions, including the CSN, must implement its correspondent duties in agreement with the competences provided for in our legislation. As for the relationship between the various government departments, etc. The Nuclear Safety Council CSN is a regulatory body which it was set up by Law 15/1980), is independent from the State Central Administration and has its own legal standing and equity. It independently and objectively carries out the functions attributed to it by law

Nº	PREGUNTA/COMENTARIO	RESPUESTA
		and submits its Annual Report on its activity to the two Houses of the Spanish Parliament. The Center for Energy Environmental and Technological Research (CIEMAT), is an organisation dealing with researching that is dependent on the Ministry of Science and Technology.
13	What restrictions/conditions, including financial guarantees, are in place relative to the export and re-entry of sealed sources, especially to and from countries which do not have programs in nuclear power and/or research, or to and from countries which do not have a nuclear regulatory body and/or rules and regulations governing the use and shipping of radioactive material?	There are not radioactive source manufacturers in Spain. The current legislation does not provide for returning disused sources to any national manufacturer.
14	To what extent are financial guarantees required for long-term storage of spent fuel and radioactive waste, and for how long are they required to cover costs such as regulatory monitoring and possible remedial actions (not necessarily accidents)?	Financial guarantees are intended to cover long term management of both spent fuel and radioactive waste. ENRESA is responsible for updating annually the contributions due to the General Radioactive Waste Plan fund by waste generators. In principle, the amounts due to the fund are calculated to cover all the activities related to long term management of fuel and radioactive waste. Since the contributions are revised annually, if a mismatch between amounts due and estimated costs is observed the fees would be put up. The cost appraisal, performed annually by ENRESA and to be covered by the financial system, takes into account those actions that nowadays are admissible. The LILW management cost includes the cost related to 300 years of institutional control and in the case of SF/HLW final disposal a period of 50 years for monitoring is contemplated, although the final decision on this issue is under consideration.
15	On page 52 it is stated that in 1997 the responsibilities of “safety” and “radiation protection” were separated and given to two organizations. Please explain the reason(s).	The year 1999 was particularly important for the CSN from the point of view of the applicable standards, due to approval of Law 14/1999 governing the Public Prices and Fees for services provided by the CSN, and the other new Regulations governing Nuclear an Radioactive Installations, which update the previous one, issued in 1972. In drawing up the Law, the Parliament introduced a series of amendments that widened the areas of competence vested in the CSN by in its creation Law (Law

Nº	PREGUNTA/COMENTARIO	RESPUESTA
		15/1980). The regulatory capacity of the Council was strengthened and was given new functions for the control and surveillance of the radiological quality of the environment throughout the national territory, as well as for coordination of support and response measures for nuclear safety and radiological protection in emergency situations. As a result of the strengthening of the Council's different areas of action, resulting from the aforementioned changes in the law, the Parliamentary Commission for Industry in these days, encouraged the organisation to introduce reforms in its management structure, with a view to adapt it to the new requirements and to a new reality. It was developed and updated a new organisational structure, which on the other hand, separated issues related to the safety of nuclear installations from the overall one of radiological protection. This new structure allow to be better prepared to meet the challenges of the future and fulfil its task of guaranteeing safety and radiological protection in Spain.
16	Please explain if the risk to future generations was considered in modelling exercises for assessing the impacts from the direct disposal in geological formations of nuclear fuel waste. (p.103) Have there been any further developments rectifying the shortcomings mentioned in Sections 4.6, 4.7 and 4.8, relative to the burdens on future generations?	The performance indicator used in the Performance Assessment carried out in Spain for geological disposal of spent fuel is just "dose". Concerning the shortcomings mentioned in that Section G, up to now no further developments has been achieved yet. Indications on the lines of analysis currently underway are mentioned in Section K of this report.
17	Is the outcome of research on Separation and Transmutation techniques the only reason for delaying the decision on the type of method to be used for the long-term management of spent fuel? (p.130)	The main reasons contemplated by the government to postpone any decision until 2010 when formulating the fifth General Radioactive Waste Plan in 1999 where as follows: - Difficulties in making any further progress in the siting step wise screening process, mainly due to social opposition and lack in the Spanish legislation of administrative procedures regulating the process for designating candidate sites. - An apparent lack of consensus in the international panorama at that time concerning deep geological disposal as the only viable options, which also influenced in the delays suffered by other countries programmes. - The non existence of a real problem in the short term, because the volume of spent fuel and long - lived waste is rather small and sufficient temporary storage capacity is available.

Nº	PREGUNTA/COMENTARIO	RESPUESTA
		The potentiality of new technologies, mainly based on Partitioning and Transmutation, was never considered as an alternative solution to the deep geological disposal option, but rather an important factor to be taken into account in the future in terms of assessing the viability to reduce the source term.
18	How is feedback of operating experience (Article 16) acted upon, and corrective measures evaluated?	As viewed from the point of view of the regulatory authorities' intervention, the analysis of the operating experience is considered as relevant and a continuous evaluation is required from the facility owners, as well as the assessment and application of the necessary improvements and corrective actions. The El Cabril's operating license establishes a system involving Periodical Safety Reviews (PSRs) to be implemented every ten years. The PSRs do not substitute the analysis, control and surveillance activities carried out on a regular basis at the El Cabril Centre; they are aimed at the performance of an overall appraisal of the safety and radiological protection in the facility, as well as at analysing the experience gained and the tentative improvements to be made, taking into account the current situation and the new technological or regulatory circumstances that may have arisen. Additionally, in 2001, the CSN provided the corresponding Supplementary Technical Instructions concerning a set of specific criteria that must be followed by ENRESA, as the owner of the El Cabril facility, for the preparation of the PSRs. The scope and contents to be contemplated in the preparation of the PSRs shall include: An analysis of the facility's operating experience, in order to assess whether the operation takes place in accordance with adequate safety measures, whether the necessary means are available for detecting possible deviations and whether the adequate corrective actions are taken. An analysis of the experience in the facility concerning the assessment of the radiological impact produced by its operation, including an analysis of the evolution of

Nº	PREGUNTA/COMENTARIO	RESPUESTA
		the doses incurred by occupational exposed individuals and by the members of the public. An analysis of the experience in the facility with regard to its environmental radiological surveillance. An analysis of the experience gained by the owner of the facility in connection with the application of a methodology for the quality assessment of the radioactive waste packages that can be accepted into the facility. An analysis of the experience gained in the study of the parameters that may have an incidence upon the safety of the facility in the long term, aimed at a better knowledge of the existing engineering barriers and of the site itself. An analysis of the experience gained by the owner of the facility in the assessment of its safety in the long term. An analysis of the changes made to regulations and standards, in order to verify that the owner has fully complied with the application of the local regulations, with those issued at countries with facilities using similar technologies and with the international recommendations in this field. The programmes for the continuous assessment and improvement of safety and radiological protection already implemented in the facility or planned for execution on the basis of the experience gained, the results of the R&D programmes developed, the exigencies and requests posed by the regulatory authorities, the international recommendations and the operating experience available from facilities with a similar technology. The El Cabril's operating license establishes that the first PSR must be filed by ENRESA with the competent authorities before December 31, 2003 and that the analyses shall encompass the period elapsed between the facility's startup in 1992 and the issue of the current license.

Nº	PREGUNTA/COMENTARIO	RESPUESTA
		The PSR documentation filed by ENRESA is evaluated and analysed by the CSN and the latter is entrusted to require as many clarifications, justifications and details as deemed necessary.
19	Although not part of the main report, are the wastes from uranium mining and milling considered to be within the scope of the Convention? What would be the status should uranium mining resume in future?	As pointed out in Section C of the report, uranium mining and milling tailings are included within the scope of application of the Convention. The only reason to include them in a separated Annex is their specific characteristics in terms of treatment, conditioning and disposal methods.
20	Environmental protection for uranium mining and milling wastes appears to be based on radiological considerations only. How are the environmental aspects of heavy metal, or other chemical contaminants present in tailings or waste rock regulated and managed?	The environmental aspects of heavy metals and other chemical contaminants present in tailings or waste rock are included in the Environmental Impact Assessment (EIA). The EIA requires the drawing up by the licensee of the activity of an environmental impact study referring, among other things, to the measures foreseen to reduce the impact deriving from causes other than the radiological.
21	To what extent is long-term institutional control planned, and how will it be organized and regulated?	According to the current El Cabril's operating license, ENRESA shall apply for a decommissioning and dismantling authorisation once the current disposal capacity is completed or the operation has been stopped. The specific requirements concerning long-term institutional control of the facility will be defined based on the documentation and safety assessment prepared by ENRESA to be included within the application for the decommissioning license. Therefore, there are not specific provisions at this stage. ENRESA, in accordance with Royal Decree 1522/84 referred to its creation, must take care of the permanent maintenance of the custody over the inventory of wastes deposited in the facilities for radioactive waste storage. Such custody is also applicable after the closure of the corresponding facility. The only disposal facilities closed up to date in Spain are those related to the uranium mining and milling facilities. In this moment, they are under compliance period prior to the definition of the surveillance stage and the future institutional controls to be decided
22	Is the fee paid only by nuclear sector or by the whole electricity generating sector, is the principle "polluter pays" applied ?	The financing system for radioactive wastes generated by the nucleoelectric sector is based on a fee applied to the total electricity billing throughout the operating lifetime of the nuclear power plants. The money collected by this fee is used to finance the

Nº	PREGUNTA/COMENTARIO	RESPUESTA
		activities under the responsibility of ENRESA. It is to be mentioned that the predisposal costs (segregation, treatment, conditioning and on site storage) are borne by the nuclear power plants. The polluter pays principle is applied, partially to the producers and partially to the electricity consumers. However, we would like to point out here that the "polluter pays" is not necessarily related to safety questions. Moreover, this principle is not explicitly mentioned in the Convention.
23	Could Spain provide information on the existence and application of clearance levels and exemption procedures?	With regard to the existence and application of declassification levels in Spain, item 12.2.3 of the national report describes the basic principles on which the established declassification system is based and indicates how certain declassification levels are assessed. As mentioned, since 1995, the so-called common projects have been developed for the declassification of different types of waste materials generated by the Spanish nuclear power plants. A relevant issue in their contents is the assessment of the declassification levels through a study of the radiological impact associated to the management of these waste materials by the conventional methods. Currently, the common projects corresponding to the declassification of used oils, active carbon, spent ion-exchange resins and metal scrap have already been approved by the CSN. Currently, the owners of the Spanish nuclear facilities are either licensed for the declassification of these materials or in the process of obtaining such licenses. With regard to the second part of the question, concerning exemption processes, we must mention that they are regulated by the current regulation on nuclear and radioactive facilities, which partially transposes the European Union's Directive 96/29. The latter is the standard framework applied to decision making regarding the exemption from regulatory control of practices with ionising radiation sources that were previously justified.
2425	Could Spain detail the planned strategy for Vandellos I dismantling project: Rationale for postponed dismantling Types and estimated quantities of wastes, Management strategies and corresponding development plans and key milestones, mainly for graphite waste.	**Rationales/Main Factors for postponed dismantling in V1. Other Spanish Reactors** Decontamination and dismantling activities for Vandellós-I have been extended to the

Nº	PREGUNTA/COMENTARIO	RESPUESTA
	Availability of qualified teams, Availability of technical documentation?	conclusion of Stage 2 of Decommissioning, in June 2003. This stage includes confinement of the reactor shroud, the performance of demolition and backfilling operations and release of a large part of the site. The facility is currently being prepared for the latency period, which will be followed by total dismantling of the remaining parts of the plant (Stage 3). The rationale for postponing the dismantling in the case of Vandellós-I was mainly related to the radioactivity decay of 60-Co, the most relevant isotope under a radioactive point of view. During a latency period of 25 years the radiological activity of the internal structures of the pile will decay to 5% of the initial level, and dismantling of the vessel may be addressed with minimum radiological risk. At present, El Cabril repository can not accept the graphite wastes resulting from the dismantling of the reactor vessel. This together with the dose reduction effects led to the adoption of a deferred safestore strategy for the only Spanish gas-graphite reactor of Vandellós-I. **Types and estimated quantities of wastes** One of the essential points of Vandellós-I project is the exhaustive control of all the materials arising at the site in order to segregate those considered clean from those others that have radiological implications. The estimate amount of materials removed during stage 2 until June 2003 was of 310,000 tons, including 1,900 t of low and intermediate level radioactive waste which are sent to the Waste Disposal Facility at El Cabril (Córdoba). The recycling policy at Vandellós-I has obtained 298,000 tons of recycled materials, it means a recycling ratio of 96%. This amount of recycled materials can be subdivided in the following: - Recycled concrete “in situ”: 277,000 t - Released Materials recycle out-sites: 20,800 t - Scraps: 16,500 t - Others materials: 4,300 t - Materials contaminated recycled in the nuclear field: 200 t

Nº	PREGUNTA/COMENTARIO	RESPUESTA
		Material management strategy Successful material management from decommissioning depends on careful and organised planning early in the decommissioning process. After the radiological characterisation and material inventory assessment, the selection of the key radionuclides and spectra were developed in Vandellós-I in agreement with regulatory authorities. All the process of examination and authorisation by the regulatory authorities of the clearance methodology took more than two years. Materials were moved around the site in containers along controlled routes, in all cases accompanied by their corresponding "Authorised Handling Unit" docket. These dockets were completed in the different areas through which the containers circulate, and specify all the historical, radiometric and operating data that need to be known in subsequent phases to ensure optimum management. The process of material management was subdivided into the following areas: Production, Clearance, Cleared/Conventional Materials Treatment and Radioactive Waste Treatment areas. The objective of the Production Area was the generation of homogeneous batches of materials susceptible to being measured with the available technology, as well as the preliminary classification of materials depending on the authorised contamination limit values. The Clearance Area confirmed and accredits materials initially catalogued as declassifiable and, if this was not applicable, assigned them the corresponding category. The Declassified(Cleared)/Conventional Materials Treatment and Radioactive Materials Treatment areas were in charge of the conditioning of the materials and their dispatch to authorised centres or to the El Cabril Low and Intermediate Level Waste Disposal Facility, respectively. Identification of adequate storage areas and disposal routes was essential to provide waste streams with readily available routes for conditioning, treatment, storage and disposal or reuse. Material could have different evacuation routes depending on

Nº	PREGUNTA/COMENTARIO	RESPUESTA
		residual contamination, geometrical shape, history and treatment/handling. This complex process was controlled by means of the so-called Waste Management Information System, a computer based corporate system that recorded all internal movements of the materials, from disassembly to dispatch. The process was guaranteed by five controls that ensured that all the materials removed from the plant do not exceed the levels of activity imposed by the CSN, the Spanish regulatory body, for declassification as non-radioactive wastes. The objective of the first two controls applied to a material, item of equipment or system was planning of the disassembly work and of the protection resources for the workers involved. These controls consisted of historic knowledge of the operation of the equipment or system and analysis of the three radiometric studies already performed on site. The radiometric studies, each more accurate than its predecessor, made up a real detailed radiological map of the site. The third control was aimed at checking on the spot, by means of direct measurements "in situ", which materials were radiologically clean and which were contaminated. The fourth control was implemented in order to undertake the declassification process, which will allow non-contaminated materials to be managed as conventional waste, performing integrated measurement of the containers using a sophisticated device known as the Box Counter, which analysed the radiological charge of the material contained in by means of a gamma spectrometry measuring system. All the non-radioactive materials leaving the site were required to pass through a large gantry, now on the transport truck. This was located at the exit from the site and definitively checked that there were no radioactive components in the material prepared for dispatch. Once these five controls have been performed with satisfactory results, conventional materials be given a permit to leave the site and be transported to their destination, either a recycling plant or an authorised tip. However, in keeping with the legal

Nº	PREGUNTA/COMENTARIO	RESPUESTA
		standards in force, all conventional wastes were required to have an Acceptance Docket subscribed between the producer, in this case ENRESA, and the company or organisation responsible for subsequent management. This acceptance docket must be submitted to the Waste Council of the Regional Government of Catalonia, where the plant was commissioned, for validation, and must be associated with a Waste Tracking Sheet, the aim of which is to ensure that transport is carried out under suitable conditions. **Management for graphite wastes** As it is known, Gas-cooled reactors generate large quantities of graphite wastes, mainly in the form of spent fuel sleeves and include a stainless steel seat wire in one of its ends. During the operation of the Vandellós I plant, graphite sleeves were stored in three concrete silos on site, which included about 1000 tonnes of graphite and seat wires. In 1995, prior to the start of the decommissioning activities, the graphite sleeves were removed from the silos and conditioned into high integrity containers which were placed in a temporary storage facility on site. This recovery and cleaning process, implemented by the owner of plant, consisted of the following sequence of operations: - Recovery of the waste from inside the silos using a mobile enclosure and a telemanipulator. - Transfer of the waste to the processing unit. - Processing of the graphite waste where the graphite sleeves were crushed, the seat wires were separated and graphite and wires were placed in different containers. - Transfer of the waste containers to a temporary store on site. - Final clean up of the silos. Sampling and radiological monitoring of the inner surfaces of the silos indicated that the main contaminating isotopes were 3H, 14C, 55Fe, 59Ni, 63Ni, 60Co, 90Sr, 137Cs, 154Eu, 234U, 238U, 239Pu, 241Pu y 241Am. Radiation levels inside the silos were mainly due to 60Co, 137Cs and 154Eu. In addition core samples were taken from the walls and floors in order to quantify the in-depth contamination of the material. After

Nº	PREGUNTA/COMENTARIO	RESPUESTA
		crushing and milling, analyses of the core samples indicated that the contamination has penetrated deeper in the floors and the lower parts of the walls up to 4 to 5 cm. As a result of these operations, two of the silos were cleaned to radiation levels up to 0,5mSv/h and the remaining one to levels close to 5 mSv/h. ENRESA started the decommissioning of the graphite silos in 2000. Decommissioning involves the dismantling and removal of equipment from each cell, the decontamination for the cell walls, ceilings and floors and the dismantling of the ventilation system. These activities were followed by a complete radiological monitoring in order to obtain the release of the remaining structures and proceed with its demolition. A new storage facility dedicated to the graphite is now being built on Vandellós-I site. This facility is located inside the reactor building and is designed to accommodate about 300 graphite waste and seat wires containers.The layout of containers and the method and sequence for placing them within the facility have been designed to minimize the doses to the workers and the public.The facility is equipped with the auxiliary systems required by the regulations and will be under surveillance and maintenance during the dormancy period. **Availability of qualified teams/technical documents** The original Design State of the plant have been recorded during construction and systems were in place to record subsequent modifications and plant operational history. However, the best source of information with regard to operational history was the site staff. This operational experience has been used at the level 2 Vandellós-I decommissioning project by direct participation of the site workforce in the decommissioning activities under the organisational structure adopted by Enresa at the site. For level 3, after the latency period, a selective retention policy of documents has being established to ensure that appropriate site records (e.g. waste inventories, engineering drawings, written or verbal testimony of plant staff, decommissioning plans etc) are stored in an accessible and retrievable form for 30 years.

Nº	PREGUNTA/COMENTARIO	RESPUESTA
26	Could Spain clarify the wording “most trancendental specific regulatory standards”?	The expression was meant to indicate that Royal Decree 1522/1984, dated the 4th of July, is a transcendental standard because it is the first regulation ruling relevant issues concerning the management of radioactive wastes in Spain; therefore, a novelty and a pioneer in this field.
27	ENRESA is in charge of preparing the GRWP. This plan is issued and periodically approved by the government. Could Spain provide some details about the content of this document and clarify its review process by the CSN prior to government approval?	ENRESA is responsible for updating annually the GRWP and for submitting a proposal to the Ministry of Economy for its review and, eventually, for approval by the Council of Ministers. GRWP approval by the Government is carried out only if relevant changes in radioactive waste management policies are implemented. In essence, the GRWP includes a revision of the current policy for radioactive waste management, including the following elements: - Legal framework - Generation of radioactive waste and spent fuel - Low and intermediate level waste management - Options for a management policy for spent fuel and high level wastes, including temporary solutions and definitive management - Decommissioning of installations (status, strategies and reference scenario) - Economic and financial aspects (hypothesis, cost estimates, financing of costs by nuclear electric sectors and by other radioactive waste producers) The CSN does not participate in the revision procedure of the GRWP, since this document represents the Government policy on the subject and does not deal with safety or regulatory matters that are within the competence of the CSN. Nevertheless, MINECO sends the draft GRWP to the CSN for comments before its approval. It is important to mention that activities in the GRWP that fall within the competence of the CSN must be subjected to its scrutiny before granting the corresponding authorisation as would happen with any other nuclear-related activity.
28	Are all the safety requirements applied to the nuclear reactors systematically applied to the	All the safety requirements and criteria applied to nuclear reactors are also applied to

Nº	PREGUNTA/COMENTARIO	RESPUESTA
	spent fuel management plants with regards to the notion of graduated approach of safety in the fuel cycle activities? For instance, · Classifications for the elements important for safety · Redundancy · Five or ten years safety reviews · Periodical inspections…	the facilities devoted to the management of spent fuels, although certain adaptation is performed when it is required by the technical peculiarities in each facility.
29	This section provides a detailed description of the content of Construction permits. Is the workers operational radiation protection part of the required content? (Description of potentially exposed working stations, irradiation and contamination risk assessment for workers).	No documents dealing specifically with radiological protection of the workers are required as mandatory demanded, as it occurs with the Radiological Protection Manual, which is required in order to issue the "operation license" (see page 45), because no working positions are yet established, as the facility is under construction and not in operation. However, a theoretical assessment concerning radiological protection issues already exists through other documents that are, indeed, among those required for granting the construction licence, such as "Analytical Radiological Study" or the "Pre-Operational Environmental Radiological Surveillance Programme" described in page 45.
30	Could Spain provide statistics major topics of the recently performed inspections?	During the year 2002, the CSN carried out seven (7) inspections in the waste disposal facility El Cabril and twenty four (24) inspections on installations in dismantling and decommissioning phase, as the *Plan for dismantling and decommissioning of the Vandellos I NPP and the dismantling activities at the Elefant uranium concentrates manufacturing plant,* being the major topics the radioactive effluent control program and surveillance and maintenance Plan and operating regulations regarding the dismantling activities. On the other hand, the CSN's control of safety in the seven Spanish nuclear power plants (NPP) carried out in 2002 to two hundred five (205) inspections of which about 10 % are related in waste management.
31	Could Spain clarify the difference between the organization charts provided in pages page 9 and 225 and illustrate the CSN independence form MINECO for preparation and implementation of the regulations?	Organisational charts in pages 9 and 225 are complementary. Chart in page 9 tries to be a simplified diagram showing interrelations between the Parliament, ministerial departments of the Government, institutions depending on them and, finally, the CSN, as a public entity independent of the State Central Administration and directly

Nº	PREGUNTA/COMENTARIO	RESPUESTA
		supervised by the Parliament in accordance with its creation law. The page 225 the figure "Organisational flowchart of the Ministry of Economy" only shows and develops the Ministry of Economy (MINECO) framework. There is to point out that Direction General for Energy Policy and Mines is a part of MINECO and is assigned competences relating to nuclear energy and radioactive waste management policies. Schematically, the Spanish legal framework in relation to enactment of laws and regulations can be summarised as follows: - Laws are approved by the Parliament either on its own initiative or following other possible external initiatives (e.g. the Government, the public, a public institution…). - Regulations are enacted by the Government (i.e. approved by the Council of Ministers). - Ministerial departments of the Government can enact Ministerial Orders, that are general dispositions of a lower level. - Other public entities may enact binding instructions on the subject of its competences, as provided in its establishment laws. The CSN can propose legislative initiatives (laws and regulations) to the Government through the corresponding liaison ministry (the current CSN's liaison ministry is the Ministry of Economy), which drives forward the procedure. In practice this work is typically done jointly, setting up working group made of staff from MINECO and CSN and, when required, from other ministerial departments or public institutions involved. The CSN carries out perceptive assessments to be submitted to the Ministry of Economy before awarding any authorisation. In addition, according to the law for the creation of the CSN, the CSN can enact, in its own capacity, Instructions, Circulars and Guides on technical matters related to the nuclear and radioactive installations and the activities related to the nuclear safety and the radiological protection. .

Nº	PREGUNTA/COMENTARIO	RESPUESTA
		Furthermore, the CSN can impose, at any moment, complementary technical instructions to the licensed nuclear and radioactive installations when needed.
32	Could Spain precise if any regulatory document detail requirements on the licensees' internal organization regarding safety and QA? In the existing facilities, is safety staff independent from the hierarchy in charge of operation? What are the links with the QA entities?	The Licensee's internal organization, including licensing and QA, is described in the Operating Organization Manual (or Operating Regulation). This document is required by the Spanish Regulations (RINR, 12/99), where its article 20, request the description of the organization, its resources, functions and responsibilities. This document and its revisions must be approved by the Direction General for Energy Policy and Mines, after the CSN has submitted a perceptive assessment report. Licensing staff are usually in the headquarters of the operating organization, but there is no specific requirement in the regulations regarding independence from operation personnel. In fact the operating organization is the prime responsible for safety, so safety is the responsibility of all facility personnel, and in particular the licensed operators play a key role in the safety of the facility. QA organization is independent from the production line and reporting directly to the manager level. QA staff have access to all activities of the operating organization.
33	Could Spain clarify the regulatory role of the CSN regarding ENRESA activities? (audits, reviews, licensing documents, etc.)	ENRESA is considered the licensee for all the facilities where it is licensed, therefore is subject to the same regulatory control and supervision as a private operator of a nuclear facility. This means that ENRESA has to fulfil all applicable requirements of Spanish regulations for nuclear facilities, including those related to the operator organisation, and CSN has the corresponding programme to audit its compliance and to inspect the facility and the organization.
34	This chapter presents the general rules for financing ENRESA activities and long-term cost. Could Spain clarify the main assumptions of the future cost evaluations (what are the included cost? till site closure? surveillance period?)	ENRESA activities are basically L/ILW and SF/HLW management and NPP's decomm The future cost evaluation includes all the stages of the management i.e. site sele characterization, R&D and design, construction, operation, closure and decommissioni facilities as well as institutional control (surveillance period).

Nº	PREGUNTA/COMENTARIO	RESPUESTA
35	This chapter fully addresses the Convention requirements. It could be completed by examples of accidents taken into account for emergency plans preparation	Emergency plan are structured in different emergency categories. The emergency category is declared according accident severity grade. Severity of the accident depend on duration, location and specific characteristic of the accident. Type of accidents considered are: – Plant damage due to external events – Handling of waste package – Fire in different places in the plant – Transportation accident within the plant – Detection of abnormal radiation levels – Failure of effluent control system – Personal accident in controlled area - Threat, intrusion or aggression to the plant
36	Could Spain provide information on the current implentation of the mentioned regulation, such as, examples, detailed content of the documents, methodology for reviewing, lessons learned from on going or past projects, incidents, etc? Could Spain provide the different points of view from CSN, operating entity and MINECO on such issues?	The decommissioning projects currently underway were authorised prior to the enforcement of the new regulation and, therefore, the related official documents show slight variations. The official documentation of the decommissioning projects is quite similar to that required during the operating stage of the facility, although its contents must be adapted to the new stage. 1. The *Safety Study* of the facility is aimed at describing the initial status of the same and the most important activities that will be carried out during the execution of the project; it contains: • A description of the initial status and of the radiological characterisation of the facility and its siting, exactly at the time when the decommissioning activities start. • The general decommissioning project, establishing its scope and a description of the evolution of the facility during the execution of the scheduled activities. • The safety analysis, including the identification of both accidental and routine foreseeable risks involved in the activities to be performed, as well as the preventive measures to be taken.

Nº	PREGUNTA/COMENTARIO	RESPUESTA
		• The environmental radiological impact and the applicable environmental radiological surveillance plan. 2. The Operating *Regulation* must include a description of the organization and the personnel's functions and responsibilities. 3. The Operating *Technical specifications* in force for the equipment or systems in operation during the decommissioning activities. 4. The *Quality assurance manual*, establishing the scope and the contents of the quality programme designed for the decommissioning process. 5. The *Radiation protection manual*, with the radiological protection standards and criteria in force during the execution of the decommissioning activities. 6. The *Site emergency plan*, which must contemplate the possibilities of criticality accidents whenever the decommissioning of nuclear power plants is carried out while the spent fuel is still inside them. Additionally, other accidents with radiological consequences must be contemplated, such as fires, explosions, etc. 7. The *Radioactive waste management plan*, which must contain the basic criteria for the management of all the waste materials generated during the process, radioactive wastes and declassified materials. 8. The *Site restoration plan*, including a plan for the final radiological analysis of the site to be released after the closure statement is issued. 9. The *Economical study*, with the financial provisions of the decommissioning project. As from a regulatory point of view, the main lesson learned is the need to adapt the regulatory framework and the methodology used to review and control the decommissioning and closure processes to their own dynamics, which differs significantly from the more static and fixed framework applicable to the operating life of

Nº	PREGUNTA/COMENTARIO	RESPUESTA
		these facilities. From the implementer´s view, the main lessons learned from past project are: - There is a need to define an approach for adaptation of the nuclear power plant operating specifications to the decommissioning phase. - The establishment of agreements between utility and implementer are important to facilitate the preparation of the site for decommissioning during the later stages of nuclear power plant operation. - Early planning of the decommissioning process, including the transition phase from operation to decommissioning is essential to optimise operations and material management. - Policies of transparency and collaboration with the institutions and the media are necessary for the public acceptance of D&D works.
37	This section should present the applied methods for experience feedback use including declaration of incidents and a posteriori analysis.	With regard to incidents that can occur in the facilities themselves, both reports on reportable events and special reports are issued. Some of them are sent to the World Association for Nuclear Operators (WANO) for diffusion among the members of this organisation. Within the scope of the internal operating experience, all the reportable events —as established in the Technical Operating Specifications (ETFs)— are analysed within the facility itself and the same occurs with any incidents or anomalies that, because of their specific traits and in the opinion of the facility's staff, are considered as worth an evaluation. Concerning the operating experience of third parties, evaluations are made of:

Nº	PREGUNTA/COMENTARIO	RESPUESTA
		- Incident reports from other Spanish nuclear power plants - Analysis required by the regulatory agency (Consejo de Seguridad Nuclear): - Documents from the Institute of Nuclear Power Operations (INPO), such as the Significant Event Reports (SERs) and the Significant Operating Experience Reports (SOERs) - Documents from the WANO, such as SERs and SOERs. - Documents from the NSSS Provider and/or from other providers, such as technical bulletins and notices referred to 10CFR21. - Documents from the USNRC, such as the Information Notices (INs). The evaluation of the operating experience is the result of analyses of an incident or a document aimed at verifying whether they applicable at the station performing the evaluation and at, eventually, at identifying the necessary corrective actions to be taken in order to prevent its future occurrence or improve the station's response in case of occurrence.
38	Could Spain provide information on the on going actions for preparing the reception of HLW waste currently stored in France and UK? Licensing process, planned location of the facilities, Planned construction date, medium and long-term management strategies?	Spain has reprocessed spent fuel from Vandellós I NPP, in France, Sta. Mª de Garoña Cabrera NPP's in the United Kingdom. Following reprocessing, only HLW, in the form wastes, are to be returned from France. From the U.K., there are no wastes to be ret recovered energetic materials which, in principle, could be transformed into fuel, a managed as wastes. As indicated in Section G ϒ6.1. (page 111) the strategy contemplates of having as from y a centralized temporary storage facility capable of housing not only the spent fuel from a but also HLW and other radioactive wastes not suitable for disposal at El Cabril. With r disposal, Section Gϒ10, indicates that "the GRWP's have contemplated deep geologica as the final solution for spent fuel from operating light water reactors". This same so disposal is also contemplated for HLW disposal. So, the licensing process of the t storage and of disposal facilities of HLW are not different from those of SF, as the fa HLW are small part of those necessary for SF. Today there is not yet a defined location for temporary storage facility. In 2003 a new ge site specific project, based on a modular vault technology, has been undertaken by ENR

Nº	PREGUNTA/COMENTARIO	RESPUESTA
		the objective to be submitted to the regulatory authorities and make progress in the process, in such a way that if a site could be proposed in 2004 - 2005, the installation constructed and made operational by 2010.
39	Could Spain detail the criteria that are set forth for the conditioning and storage of waste which is not disposed of at El Cabril (for example, high-level waste)?	Conditioning and storage criteria for wastes not amenable to be disposed of at El Cabril LILW disposal facility are defined on a case by case basis, depending on the management possibilities for temporary storage. For instance, the graphite from the spent fuel sleeves of Vandellós I NPP is stored on site in special containers until a final management route is found. The future long-lived waste envisaged to arise as a result of NPPs decommissioning will be conditioned according to criteria for either the planned centralised interim storage facility or the on site storage facility. Spent sealed sources that are not accepted to be disposed of at El Cabril disposal facility are safely stored either at the El Cabril interim storage facilities or at Ciemat installations. Conditioning of HLW from reprocessing activities is done by the supplier of reprocessing services under specifications approved by its government. Those specifications will be used in the safety assessment report of the temporary storage facility.
40	Could Spain clarify the applied or envisaged management strategies and inventories for waste derived from the application of radioisotopes in industry, agriculture, research or arising as a result of past activities? What are their volumes, compositions, encountered problems, and elimination pathways? The same question could be raised for the waste resulting from CIEMAT activities	The management method applied in Spain for radioactive wastes produced at the so-called “Radioactive Facilities” (including CIEMAT) has two clearly differentiated phases: 1. Internal management by the waste producer. 2. Subsequent management by ENRESA (when appropriate). The intervention of the Regulatory Authorities is of transcendental importance in both phases. Among other things, these Authorities have established a standard (Order ECO/1449/2003, of 21st May) governing the management methods to be applied to solid waste materials with radioactive contents generated at such facilities, including a quantitative definition of the radioactive content that these materials should have in order to be managed as “radioactive wastes” and, therefore, be delivered to ENRESA. The essential aspect of the first phase of internal management by the waste producer is adequate control of the use of various radionuclides, as well as of the waste materials produced, such that it be possible to determine – in a justified manner – how

Nº	PREGUNTA/COMENTARIO	RESPUESTA
		many of these waste materials are to be delivered to ENRESA and which may be managed directly by the producer, in accordance with the latter's ordinary management routes, even following a period of temporary storage at his premises. The phase of subsequent management by ENRESA is carried out on the basis of a Type Contract between the producers and ENRESA, controlled by the Regulatory Authorities. Among other things, this Type Contract defines the technical and administrative criteria for reception. It is important to take into account that in addition ENRESA processes these radioactive wastes at its El Cabril facility, such that it is here that compliance with the criteria for definitive disposal is ensured. Both the Regulatory Authorities and ENRESA have undertaken various activities in recent years to help the producers during the initial phase of internal management. Among others inherent to technological evolution, these actions have led to the observed trend towards reduction of the total volume of radioactive wastes from these facilities to be managed by ENRESA. In the case of this type of facilities in Spain, the total volumes of waste materials with radioactive contents generated are not particularly important. One way or another, it is not a variable of special interest, since the use of radionuclides with short or very short half-lives is very frequent, and these do not give rise to the production of radioactive wastes to be managed by ENRESA, the management provided by the producer being sufficient. The average annual volume of wastes collected is some 100 m^3. In the case of radioactive wastes arising as a result of activities performed in the past, the Regulatory Authorities establish the procedure to be applied in each case, this normally entailing action by the licensee or owner of the wastes (where appropriate) and by ENRESA, as regards both the initial activities of radioactive waste characterisation and preparation and, obviously their final management. The Authorities may even establish in which cases the costs of such actions may be set off against the economic fund managed by ENRESA. In Spain, the final management of this type of radioactive wastes is fully operative and complete. Current efforts are being oriented towards optimisation of the system, this

Nº	PREGUNTA/COMENTARIO	RESPUESTA
		requiring major collaboration between the Producers, the Regulatory Authorities and ENRESA.
41	Could Spain provide information on the existing procedures for commissioning permits and final operating permits and about the safety re-assessment procedure?	Concerning the facility for the storage of low- and medium-level radioactive wastes (C. A. El Cabril), a license was issued in October 2001 for its operation until the space available for the storage of wastes in the existing cells is filled. After the date of enforcement of the above licence, ENRESA, as the owner of El Cabril, has requested the Ministry of Economy the authorization for performing the following modifications in the facility, on the basis of Article 25 of the Regulation on Nuclear and Radioactive Facilities: • Since June 2003, ENRESA has been authorized to modify the facility in order to use the existing cells for the interim storage of wastes produced as a result of incidents involving the fusion of radioactive sources in Spanish steelworks and foundries. • The CSN is currently evaluating a modification of the facility for the processing and storage of the wastes caused by an incident involving the fusion of a caesium-37 source at a Spanish steelworks, occurred in July 1998. • The CSN is currently evaluating a modification of the facility for the construction and operation of a disposal for very-low-level radioactive wastes. Concerning the procedure for the re-assessment of safety at the C. A. El Cabril, the current operating license establishes a system of periodical evaluation (periodical safety reviews) that must take place with a minimum frequency of 10 years. The detailed objectives, scope and field of application of such reviews are shown in item 12.1.1 of the national report. ENRESA must file a periodical safety review of the El Cabril facility with the competent authorities in December 2003, corresponding with the first 10 years of operation of the Centre. Additionally, in October 2003, ENRESA must file an updated review of the long-term safety analysis (post-closure safety case) of the C. A. El Cabril.

PRIMERA REUNION DE REVISION DE LA CONVENCION CONJUNTA

PREGUNTAS AL INFORME NACIONAL

Nº	PREGUNTA/COMENTARIO	RESPUESTA
42	Does radioactive waste of the nuclear fuel cycle include the waste from NPP operation?	Radioactive waste from the operation of NPPs is meant to be included within radioactive waste of the nuclear fuel cycle. It will be made explicit in a next revision of the report.
43	Though the application of the JC is limited to wastes from the nuclear field, could you please give an indication as to the nature and order of magnitude of NORM residues in Spain?	In order to develop title VII of the Regulation on Health Protection against Ionising Radiations (RPSRI), with regard to natural radiation, the CSN has established an action plan that includes the identification of the companies and activities in which NORM is utilised in Spain and the performance of pilot studies as a basis for the development of a specific regulation for this sort of activities. The programme was started in 2003 and the management of wastes generated by industries using NORM shall be carried out within this context, while consideration will be given to the results of the above-mentioned studies concerning the nature and the magnitude of the wastes.
44	Is subcriticality in the PWR pools maintained by considering BUC and dissolved boron at the same time?	The burnup credit (BUC) was attained by means of a modification in the design aimed at increasing the capacity of the pools by substituting the racks by high-density ones. For this purpose, the pools were split into two storage regions: Region II, designed for providing credit to the degree of burnup and for storing fuels with a degree of burnup equal to or higher than a given value established as a function of the initial enrichment, in accordance with the reactivity equivalent curve (REC) Region I, which can be used for the storage of fresh and irradiated fuels that do not fulfil the conditions established above for their storage in Region II. In the criticality analyses for each pool, associated to the above modification, the dissolved boron concentration is assumed and assessed for each one of the aforementioned regions, under normal operating conditions and under accidental conditions, taking into account the most limiting characteristics and events in each case (except for the criticality analyses at the José Cabrera NPP, where dissolved boron is only considered under accidental conditions). Thus, the limit operating values, established in a conservative manner, appear as design parameters in the corresponding Safety Analyses. Consequently, the control of dissolved boron concentration and the required degree of burnup for the elements

Nº	PREGUNTA/COMENTARIO	RESPUESTA
		stored in Region II are included in the Technical Specifications for Operation, as indicated in Article 9 (items 9.1. and 9.2.) of the national report.
45	Following the report under the Joint Convention the pools of the reactors seemed to be part of waste management. Are they waste management facilities in a legal and practical sense?	The pools in nuclear power plants are part of the latter and of their licensing. The only legal reference to storage pools in nuclear reactors in the Regulation on Nuclear and Radioactive Facilities (RINR) is the one related to their decommissioning. Such provision requires that, prior to the granting of the decommissioning license, the owner of the operating license must have discharged the fuel from the reactor or, if this is not the case, that a plan for the management of spent fuel is available, approved by the current Ministry of Economy (MINECO) and subject to a report by the Nuclear Safety Council (CSN). However, the strategy contemplated in the General Radioactive Waste Plan (PGRR) currently in force with regard to the interim storage of spent fuel involves three stages. The first stage refers to an expansion in the capacity of the pools through the replacement of frames, followed by the use of dry technologies within the station's site itself until a centralized solution is available, as specified in section B.5 of the national report. For this purpose, ENRESA has undersigned a contract with the nuclear power plants, in which the obligations by both parties and the procedures to be used in exchanging information are established.
46	How is information disseminated to the public in detail in connection with the Environmental Impact Assessment? For example, may affected citizens raise objections?	In accordance with our national legislation in relation to environmental impact assessment, the environmental impact study is subjected to a public consultation procedure after an application for the preliminary authorisation of any nuclear installation has been filled. The public consultation period is opened for one month. Within this period of time any interested person or legal entity may argue in relation to the proposal. The comments put forward by the responders must be addressed in the Environmental Impact Assessment, which establishes acceptance or refusal of the project, as well as applicable conditions when needed, from an environmental viewpoint.
47	By which measures or operating control regulations is ensured that the fuel assemblies are positioned in the correct place? How are changes avoided? How is k_{eff} = 0,95 ensured in case of an incident with assembly dropdown?	The correct storage of irradiated fuel elements in the pools, in so far as the sub criticality of the latter is concerned, is guaranteed through the compliance with the corresponding Operating Technical Specifications (OTSs), by which the minimal burnup of a fuel element to be stored is a function of its initial enrichment. Any handling of irradiated fuel in the pools is subject to procedures by which the element's identification is controlled, as well as its degree of burnup, location and

Nº	PREGUNTA/COMENTARIO	RESPUESTA
		destination place, in order to comply, among other, with the OTSs requirements. The Criticality Analyses, which served as a basis for the OTSs, cover both the normal operation and accidental situations that may occur in pools for the storage of irradiated fuel. Among the accidental ones, the following are contemplated: the dropping of a fuel element on the racks and the erroneous positioning of a fresh element in the area devoted to irradiated fuel. Both accidents require a minimal boron concentration in the water of the pool, so as to guarantee that $K_{eff} < 0.05$, which is lower than that required for other considered accidents and, in any case, lower than that required by the OTSs.
48	Are the reports on operating experience and on incidents presented to a governmental authority?	As required in the Regulation on Nuclear and Radioactive Facilities (RINR), the monthly operation reports, the accident reports and the annual reports on the operating experience are filed with the CSN and with the Direction General for Energy Policy and Mines of the Ministry of Economy.
49	You point out that at present, the Spanish nuclear legislation lacks specific provisions relating to control of radiological risk in the long term, and the standards relating to the safety principles and criteria to be met by the waste management facilities over time periods different from those dedicated to normal operation are not fully developed. Is there a schedule to do so or is the direct application of safety principles the final solution?	In its Section K (Planned activities to improve safety), the Spanish report outlines the country's position with regard to the incorporation of the safety principles concerning radioactive waste management to the national regulatory framework, which are applied in Spain as regulatory practices. In late 2001, the CSN started the preparation of a plan for the development of a Spanish regulatory framework in this field. During the first stages of the above-mentioned plan, the specific deficiencies were identified and analysed on the basis of the development and results of the IAEA's RADWASS programme. In the current stage of the Plan's development, regulatory proposals are being prepared and formulated concerning the safety principles and criteria to be taken into account in the long term, as well as regarding the identification of the most appropriate supporting legal instruments.
50	You point out that Responsibility for declaring the presence of toxic chemical or biological substances is to the producers, who are required to identify them, minimise their production and, in the event of a significant presence, undertake their specific treatment to remove them or inhibit their properties. Are the chemical or biological substances to be declared in a way that they can be part of the safety assessment of a repository. And to whom are they to be declared? Are chemical or biological substances part of the safety-	Item 11.5 of the national report provides details on the two courses of action (regulatory and technological) under which the presence of other-than-radiological risks is taken into account in radioactive waste management. The application of the Spanish regulations, which go beyond the guidelines of the European Union, allows the competent authorities (Ministry of the Environment and Ministry of Economy) to assess the incidence of a certain activity upon the

Nº	PREGUNTA/COMENTARIO	RESPUESTA
	related investigations?	environment before authorizing its implementation. On the other hand, in the technologies applied for the management of radioactive wastes, consideration has been given to their content of substances that can pose biological, chemical or other types of risks, and protection measures for the workers, the public and the environment are applied against such risks. For the above purpose, as a preventive measure, limitations are established on the contents of these chemical or biological substances in the wastes disposed of at the C. A. El Cabril, while their incidence upon the safety of the facility is analysed.
51	Are the practice referred to here (closed LILW management facility) the only kind of past practice in Spain to which the Convention refers?	As shown in section 12.4 of the national report, there are not in Spain radioactive waste management facilities which have required intervention actions aiming at reducing the existing radiological risk, after having closed. Past practices related to radioactive waste management in Spain have dealt only with storage facilities of whatever category and there has been no need to take any action in none of them in the sense required by the Convetion.
52	Your statement is that according to the RNRI in force, low and intermediate level waste management facilities may be classified as nuclear or radioactive installations. Are there any legislative regulations concerning facilities for the management of HLW?	The management of spent fuel (SF) and of radioactive wastes (L/ILW and HLW) in Spain is regulated by the same legislative framework as the rest of the activities implying risks arising from ionising radiations. Basically, this framework includes the Act on Nuclear Energy, the Regulation on Nuclear and Radioactive Facilities (RNRI), the Act by which the Nuclear Safety Council was created, the Royal Legislative Decree on Environmental Impact Assessment and the Regulation for Health Protection against Ionising Radiations, as shown in detail under Article 19, Section E, of the national report. This regulatory framework is completed by the Decree authorising the creation of Empresa Nacional de Residuos Radiactivos (ENRESA), establishing which are the functions of the company and assigning it the preparation of a General Plan on Radioactive Wastes, to be periodically updated, which is to be timely approved by the Government, as indicated under item 19.5 of the national report. According to the RNRI, the facilities for the storage of spent fuel and radioactive wastes are classified as nuclear facilities and are submitted to the licensing system described in item 19.2 of the national report, which includes the following licenses: previous or siting license, construction license, operation license and

Nº	PREGUNTA/COMENTARIO	RESPUESTA
		decommissioning license. On the other hand, in accordance with the environmental legislation, the projects related to facilities for the interim storage of spent fuel or radioactive wastes (for a period of over 10 years and at a site other than that of their generation) and to facilities for the final storage of spent fuel are submitted to a process of environmental impact assessment, as specified in item 4.5 under Section G of the national report.
53	What safety requirements are actually applied for radioactive waste management facilities? Is provision made for inspections or for documentation of the wastes?	The radioactive waste management facilities are submitted to the application of the general regulations for Spanish nuclear facilities, as mentioned in Section E (19.1, 2 and 3) of the national report. Particularly, the Regulation on nuclear and radioactive facilities, issued in December 1999, demands that a Preliminary Safety Report be filed with the authorities when requesting the licence for installation. The aforementioned regulatory text does also point out that the request for the facility's operation licence shall include a Final Safety Analysis that must be evaluated by the competent authority. Item 11.4.2 of the national report provides detailed information on the safety principles and criteria applied in Spain in connection with radioactive waste management facilities. The startup of the C. A. El Cabril did not imply a safety assessment only during the exploitation stage but also during the surveillance and control phase, which extends for 300 years after the closure of the storage facility. The periodical safety reviews, its objectives and the methodology for its execution are shown in item 12.1.1 of the national report. With regard to the existing provisions for inspection and documentation on low- and medium-level radioactive wastes, please refer to the whole contents of item 11.3 of the national report, where details are provided on the methodology to be used in preparing the descriptive documents for each one of the types of waste packages, as well as on the verification procedures to be followed by the producers and by ENRESA and on the inspection to be carried out by the CSN with regard to the processes used in the generation and acceptance of waste packages, so as to verify compliance with the established acceptance procedures and with traceability in the various management stages.

PRIMERA REUNION DE REVISION DE LA CONVENCION CONJUNTA

PREGUNTAS AL INFORME NACIONAL

Nº	PREGUNTA/COMENTARIO	RESPUESTA
54	Is an EIA prepared if the radioactivity emanating from radioactive waste storage and processing facilities exceeds limits laid down in legislation?	Should the radioactivity levels originated in an interim waste storage or in a facility where wastes are processed exceed the limits established in the Spanish legislation, actions would be undertaken in agreement with the provisions in the Spanish regulations and in the mandatory documents for the operation of the facility; essentially, whatever is established in the technical operating specifications, in the operating regulations and in the radiological protection manual, whether the situation is or is not classified as an emergency category as established in the Emergency Plan approved by the competent authorities.
55	Which organization or governmental agency monitors compliance with the safety conditions fore-seen in the submitted licensing documents during and after construction (who is the regulatory body)?	A presentation to the Ministry of Economy requesting the license for the construction of a radioactive waste management facility must include, among other mandatory documents, a preliminary safety assessment describing the site, the facility itself with its components and safety systems, any foreseeable accidents and their consequences, and the pre-operational analytical radiological analysis. The Ministry of Economy shall send a copy of the documentation to the CSN for the latter to issue a preceptive and binding report in so far as nuclear safety and radiological protection are concerned. Within the framework of its competence, the CSN performs a safety assessment of the future facility and inspects the activities carried out by the applicant, so as to provide the Ministry of Economy with the above-mentioned preceptive and binding report. Taking into account the preceptive CSN's report, the Ministry of Economy approves or rejects the request for construction of the facility. During the construction and erection of nuclear facilities, before proceeding to the loading of the fuels or to the admission of nuclear substances, the licensee is obliged to execute a program of pre-nuclear tests in order to certify the adequate behaviour of the equipment or parts involved in the facility, with regard to nuclear safety and radiological protection and to the applicable industrial and technical regulations. The program for pre-nuclear tests shall be proposed by the licensee and require the approval of the Direction General for Energy Policy and Mines based on a prior report by the Nuclear Safety Council. Regardless the execution of the tests and verifications under the responsibility of the licensee, the aforementioned General Direction shall establish, on the basis of a prior report by the Nuclear Safety Council, which are the tests and verifications to be carried out in the presence of the inspectors reporting to

Nº	PREGUNTA/COMENTARIO	RESPUESTA
		these agencies. The results of the pre-nuclear tests shall be filed with the Direction General for Energy Policy and Mines and the Nuclear Safety Council for their analysis, prior to the issue of the license for operation.
56	Are there additional requirements for interim storage (even long term) or are the disposal requirements sufficient (also for corrosion problems)?	There are not additional requirements for interim storage. The corrosion problems have to be considered only if the container durability is affected by the process.
57	Are there treatment devices at the El Cabril facility or where is the waste of minor producers treated?	El Cabril disposal facility has the capacity to treat the institutional wastes from minor producers (hospitals, research centres, industry). This treatment activity is performed in the conditioning building, which includes the systems and equipment necessary for conditioning this type of wastes. The main systems include a glove box for waste classification, crushing, segregation and bagging, as well as a 50 Kg/h incinerator for treating biological and organic wastes. The facility also allows for storage of radioactive combustible liquids, solids and immobilization of solid wastes.
58	Is information given on the content of radionuclides, too?	Yes, it is required to determine, package by package, the activity of those significant nuclides in accordance with the Safety Study.
59	You point out that the financing system is based fundamentally on collections via the application of a percentage fee on total electricity billing. What happens if the deposing of radioactive waste is more expensive than expected and the collections have been too small? What is the basis for the calculation of the percentage fee?	For the NPPs, the financing system is based on the collection of a percentage fee on the total electricity billing throughout the operating lifetime of the nuclear power plants. The incomes needed in this period are calculated every year by ENRESA and submitted to the Government in the General Radioactive Waste Plan proposal. The calculation takes into account, among other things, a series of intrinsic uncertainties with respect both to the initial hypotheses and the cost estimates performed. The specific value of the fee applied each year is reflected in the Royal Decree establishing the electricity tariff. This interactive approach allows a correction mechanism during the whole period in which the percentage fee is applied. The basic hypothesis used for the calculation of the necessary incomes are: - Reference scenario: nuclear power plants currently in operation and, for the purpose of calculation and planning, the lifetime of these plants is assumed to be 40 years.

Nº	PREGUNTA/COMENTARIO	RESPUESTA
		- Estimated costs according to the strategies and activities contemplated in the GRWP. - A discount rate of 2.5%.
60	QA with respect to waste products does not seem to be covered in this report in detail. How is QA for waste products (spent fuel and radwaste) performed for long-term interim storage and for final disposal?	The Spanish Regulation on Nuclear and Radioactive Facilities (RINR, in its Spanish acronym), issued in December 1999, regulates the licensing of all nuclear facilities, including those for the interim and final storage of spent fuel and radioactive wastes. As established in the RINR, the owners of the nuclear facility licenses are obliged to apply Quality Assurance Programmes at all the stages in the life cycles of the nuclear facilities (including the interim and final storage of spent fuel and radioactive wastes). In order to obtain the license, the owners must submit a document before the Administration, containing a description of the Quality Assurance Programme to be applied in the facility. This document needs to be approved by the Nuclear Safety Council (CSN). The Quality Assurance Programmes applied at the Spanish nuclear facilities (including those for interim and final storage of spent fuel and radioactive wastes) are based on the Spanish standard UNE 73-401 “Garantía de Calidad en las instalaciones nucleares” (Quality Assurance in nuclear facilities). This standard is fully consistent with the 10CFR50 Ap. B and with the IAEA’s code and safety guides (50-C-QA). The Quality Assurance Programmes are applied to all the safety-related activities, structures, systems and components in the facilities. They include both the activities performed at the nuclear facilities themselves during their various stages —siting studies, project, construction, startup, operation, temporary shutdown and decommissioning— and those related to the former, such as engineering, manufacturing and inspection (including the manufacture of packages for the transport of radioactive wastes). In order to facilitate the implementation of the Quality Assurance Programmes and their inspection, the CSN has prepared the following Safety Guides (based on

Nº	PREGUNTA/COMENTARIO	RESPUESTA
		10CFR50 Ap. B, 50-C-QA and UNE 73-401): ▪ GSG-10.01 Basic Quality Assurance Guide for nuclear facilities ▪ GSG-10.02 System on documents submitted to Quality Assurance programmes in nuclear facilities ▪ GSG-10.03 Quality Assurance Audits ▪ GSG-10.04 Quality Assurance for the commissioning of nuclear facilities ▪ GSG-10.05 Quality Assurance in essays, tests and inspections at nuclear facilities ▪ GSG-10.06 Quality Assurance in the design of nuclear facilities ▪ GSG-10.07 Quality Assurance at nuclear facilities in operation ▪ GSG-10.08 Quality Assurance for the provision of goods and services to nuclear facilities ▪ GSG-10.09 Quality Assurance on safety-related computer applications in nuclear facilities ▪ GSG-10-10 Qualification and certification of personnel performing non-destructive tests ▪ GSG-10.11 Quality Assurance in first-category radioactive facilities ▪ GSG10.13 Quality Assurance in the decommissioning and closure of nuclear facilities (currently being edited) ▪ GSG 6.1 Quality Assurance in the transport of radioactive substances For QC for waste products (waste acceptance), please see Section 16.5 of the report. Moreover, ENRESA has developed a Quality Assurance Manual, approved by the CSN, containing the procedures applied for the acceptance of the primary waste packages, requirements for manufacturing the concrete containers and for the fabrication of the immobilisation grout, to be injected inside the concrete containers. The CSN carries out inspections to both the NPPs, regarding the compliance with their QA procedures during the fabrication of the primary waste packages, and the El Cabril facility, for the compliance of the above QA Manual requirements.
61	Are routine checks made of the expertise of individuals responsible or assigned for radiation protection? Is preparatory job planning foreseen, for example by drawing up radiation protection instructions?	In Spain an initial certification is required to all individuals with radiation protection responsibilities. Training programs are established in regulations and guides for Radiation Protection Experts, Radiation Protection Advisor, supervisor and operators.

Nº	PREGUNTA/COMENTARIO	RESPUESTA
		An individual diploma, license or accreditation is delivered by the regulatory body (CSN) after pertinent examination to assess the expertise of the candidates. Although there is a provision for the periodic renewal of licenses for supervisors and operators this process does not includes new checks for the expertise of individuals. There are not provisions in Spanish regulations to perform such routine checks.. Routine checks are not considered necessary provided that individuals after initial training, remain in work positions where on the job training is guaranteed. CSN only requires a new examination in those cases where individuals, once obtained initial certification, want to be back to job positions with radiation protection responsibilities after a significant period of time out of radiation protection tasks. Is preparatory job planning foreseen for example by drawing up radiation protection instructions?. Spanish decree on radiation protection, which translates to national regulation the UE directive EURATOM/96/29, includes requisites related to training and information that should be provided to workers prior they start working with exposure to ionising radiation. Information should include: Radiological risks Rules and procedures to be followed in each specific work position. Specific items for women, related to pregnancy and foetus radiation protection. Training in radiation protection should be provided to all workers in accordance with their responsibilities and with the risks existing in workplaces where they are

Nº	PREGUNTA/COMENTARIO	RESPUESTA
		assigned. During the assessments performed prior granting by CSN diplomas and licenses, only for the highest level of qualification, i.e. for the case of Radiation Protection Experts, it is required to have the ability to perform preparatory job planning tasks and to drawn up radiation protection instructions.
62	Are measures foreseen as early as during the planning stage to limit the release of radiation in the event of an accident?	In order to limit the release of radioactive effluents into the environment in case of an accident, the Spanish regulations require the owners of nuclear facilities to perform an analysis of any foreseeable accidents and of their consequences; the accidents to be considered must include both the ones resulting from failures in the operation of elements or apparatus and those due to operating errors or external agents; thus, provisions can be made on the actions to be undertaken. Additionally, the Spanish regulations require nuclear facilities to prepare emergency plans, where the measures to be taken in order to face different emergency situations must be established. This is a way to avoid or, if inevitable, to limit the release of radioactive substances into the environment.
63	What is the magnitude of exposure of the public in the vicinity of the Spanish nuclear installations? How releases around the nuclear installations measured, and how is the exposure calculated?	The effective dose to the most-exposed individual is the magnitude used to quantify public exposure, occurred in the vicinity of the Spanish nuclear facilities as a result of effluent releases. The operating licenses of all the Spanish nuclear facilities establish, as a part of their Operating Technical Specifications (OTS's), a system for the limitation, surveillance and control of radioactive effluents, including: ▪ the discharge limits, ▪ the sampling and analysis programme required to verify compliance with the limits, ▪ the mandatory performance of monthly dose calculations and of dose estimations for the last 12 consecutive months, ▪ the minimal radioactive liquid and gaseous effluents monitoring instrumentation, as well as the operability requirements, the surveillance tests and the set points determination, and ▪ the operability and use requirements for the effluent treatment systems, involving

Nº	PREGUNTA/COMENTARIO	RESPUESTA
		a projection of the doses in order to schedule the processing of the effluents prior to their discharge outside the facility. Also, environmental radiological surveillance programmes included in the OTS's, are stablished, these programmes that must be executed by the owners of the nuclear facilities, allow to identify eventual activity increases in the environment deriving from radioactive discharges and to check the efficiency of the measures taken to mitigate their effects. On the basis of the established sampling and analysis programme, the radioactive effluents are analysed in order to quantify the activity released into the environment and, based on the results obtained, monthly estimations are made of the dose to the critical individual of the public during twelve consecutive months as a result of such release. A critical group is defined for each facility, as described in ICRP-60. It is assumed that the critical groups are located in the area where the maximum concentration in air and aerosol deposition are found. Furthermore, on the basis of the results of the environmental sample analyses, another annual estimation is made of the dose to the critical individual. The methodology used is the same for all the Spanish nuclear facilities and the following assumptions are applied: ▪ the calculations are made for the maximum individuals, considered as those whose habits represent a reasonable deviation from the population mean, ▪ all the consumed food is produced in the area where the critical group is located, and ▪ the critical group for gaseous effluents does also consume water, irrigated crops and animal products contaminated with the water affected by the discharged liquid effluents. Concerning the parameters involved in the calculations, as far as local features are concerned, the population habits and the land and water uses are considered as values referred to each individual site; however, some generic values are also

Nº	PREGUNTA/COMENTARIO	RESPUESTA
		utilized, such as the animals' grazing time, the time elapsed between the production of the food and its consumption, etc.
64	In addition to the very comprehensive description on sealed sources, what is the detection equipment for sources at scrapyards, foundries etc. and at the borders?	Both steelworks and the main metal recovery sites are equipped with detection gateways at the entrance of the facilities; in the case of steelworks, surveillance is supplemented by means of instrumentation in the production processing lines and in the manufactured products.
65	What are the criteria for clearance? Are there estimates on the percentage of radioactive material which will be clearable and will not become radioactive waste? A cross reference to Section H.12.2.3 (p. 148) would be helpful.	As indicated in section B.3 of the national report, the definition of "radioactive waste" established in the Nuclear Energy Act, modified by Act 54/97, implies that not all the waste materials with radioactivity contents and generated as a result of the operation of nuclear and radioactive facilities need to be managed as radioactive wastes. The above definition differentiates radioactive wastes from non-radioactive wastes on the basis of the contents of radioactivity in the materials, which must be established by the Ministry of Economy (formerly, Ministry of Industry and Energy) on the basis of a prior report by the CSN. The declassification system established in Spain, as described in detail in section H.12.2.3, was shaped within the framework of Directive 96/29/EURATOM, where the concept of declassification of waste materials is introduced and the radiological criteria ruling the mandatory licensing process for such materials to be managed through the conventional disposal, recycling or reuse means are pointed out. The licensing for declassification is, then, typified as an administrative action by which certain waste materials or products containing radioactivity, generated in nuclear and radioactive facilities, can be managed by the conventional means and are not submitted to further regulatory controls in so far as radiological safety and protection are concerned. As a response to the question on the existence of assessment related to the percentage of waste materials that can be declassified and will not have to be managed as radioactive wastes, it must be noted that, currently, the aforementioned assessments are not of a global character but are specifically executed within the framework of feasibility studies corresponding to the various radioactive waste management projects undertaken by the producers. On this respect, it is worth mentioning that the experience gained so far with regard to

Nº	PREGUNTA/COMENTARIO	RESPUESTA
		the implementation of execution programmes referred to declassification has made it evident that the characterisation of the materials, in order to guarantee with high degrees of confidence that their activity contents are lower than the declassification levels, is one of the most relevant issues in the process and can, occasionally, be a determining factor in the viability of a project.
66	Where is the limit between the VLLW and the L/ILW? Where is the limit (activity concentration of long-lived isotopes) between the long-lived and short-lived radioactive wastes generated in NPP's?	The operating license of the C. A. El Cabril establishes which are the maximum mass activity concentrations in the wastes that can be stored in this facility. In the case of alpha emitters and of other long-lived nuclides, the established mass activity concentrations shall not be exceeded after a 300-year period following the closure of the facility. The above-mentioned operation license does also define low- and medium-activity wastes as those containing mostly short- or medium-lived radionuclides (lower than that of Caesium 137) and with very low concentrations of long-lived radionuclides. The activity concentrations that will define the separation between low- and medium-level wastes and those with very low activity are not established as yet, although both the design and the facilities for the final disposal of the latter are already underway. The safety analysis of the facility for the storage of very low activity wastes will allow to assess the maximum mass activity concentrations that must be present in these wastes for them to be managed in such facility. With regard to the second question, it must be noted that the contents of long-lived emitters in the wastes generated by nuclear power plants is a determinant factor in deciding on their tentative storage at El Cabril. Only the conditioned wastes complying with the storage limitations established for this Centre can be accepted in the same.
67	"As a result, the decision has now been taken to interrupt activities relating to selection of sites for a future deep geological disposal facility in Spain, to maintain the technological capabilities developed to date and to adapt R&D activities to the new approaches." Who have made this decision and at what level? Is there any intention for preparing a new National Energy Plan (PAN)? Where is it stated that when and how the final decision will be made about the strategy for the spent fuel management?	This decision was made by the Government (Council of Ministers) at the time when the 1999 General Radioactive Waste Plan was approved. New decisions about long term strategy for spent fuel management will be made again by the Government after 2010. Concerning the National Energy Plan, at present the Spanish energy sector is fully liberalised and the Government does not develop any specific planning on it. Certainly the Ministry of Economy handles an indicative planning for its own businesses.
68	Is there any particular site(s), which seems to be suitable for constructing the temporary	There are many sites suitable from the technical viewpoint to host a centralized

Nº	PREGUNTA/COMENTARIO	RESPUESTA
	storage facility for the interim storage of those wastes, which cannot be disposed of in El Cabril repository?	interim storage facility, but up to now no candidate site has been proposed.
69	How and when the strategy will be prepared; will it be possible to modify it and finally who and how will make the decision about it?	According to the present scheme of responsibilities, the responsibility for policy on radioactive waste management and approval of strategies corresponds to the Government, through the Ministry of Economy. Consequently, the strategy is prepared by the Ministry of Economy, taking into account the information provided by ENRESA. Possible consultation with other stakeholders is not defined at this stage. Certainly, the chosen strategy could be modified later on, as needed, following the same procedure.
70	Currently there are several waste forms such as SF, reprocessed HLW, fissionable materials, certain SSRS, “exotic waste forms” (graphite) for which the disposal route is not defined. Has consideration been given to the co-disposal of all these waste forms in a single repository?	Consideration is given to use only one repository for spent nuclear fuel and all radioactive waste not amenable to be disposed of at the El Cabril LILW disposal facility. However, other management routes are also being searched, for instance for the graphite.
71	One of the basic objectives in the El Cabril project was incorporation of the concept of waste retrievability. Has the criteria been defined under which circumstances the retrievability might be necessary or obligatory?	As it was mentioned in item B.7 of the national report, the El Cabril facility was designed and built having in mind two essential objectives: ensuring immediate and deferred protection of individuals and the environment, using for the latter a multiple-barrier system, and allowing for the free use of the site after a maximum period of 300 years. The objective of waste recoverability is not related to the safety of the facility and the circumstances and criteria that would be applicable for decision-making concerning its convenience are yet to be defined.
72	What measures have been taken to avoid situations similar to 1998 and 2001(radioactive sources were molten)?	**Interventions in the national framework** In November 1999 a cooperation Protocol for collaboration on radiological surveillance of metallic materials was signed by several ministerial department of the State General Administration, the Nuclear Safety Council, ENRESA and the main associations of the Spanish industry for iron and steel and for recycling of metallic materials. The most important unions of workers have also adhered to the Protocol in order to support it. The Protocol establishes a number of commitments and the procedure to be implemented by each party in order to ensure adequate radiological surveillance and management of radioactive waste and sources that are detected or produced following an incident.

Nº	PREGUNTA/COMENTARIO	RESPUESTA
		Interventions in the EU framework Taking into account that this problem is also subject of concern for other Member States, in September 1998 Spain addressed the European Commission to make a request for promoting the study of adequate actions to control metallic scraps with unnoticed radioactive materials. On the other hand, seizing the opportunity of the Spanish presidency during the first six-month period of 2002, Spain put and drove forward a Council Resolution on the establishment of national systems for surveillance and control of the presence of radioactive materials in the recycling of metallic materials in Member States. This Resolution was approved by the Council 7 may 2002.
73	One of the objectives imposed and included in the construction permit for the El Cabril facility is that of zero releases. How long can zero release be guaranteed?	The "zero release" is an operational objective, in the sense that any liquid with activity received or generated at the Disposal Facility has to be immovilized or treated in a safe manner to avoid the release.
74	Responsibility for the issuing of permits and licences and responsibility for nuclear safety and radiation protection is given separately to MINECO and CSN, respectively. What is the reason why this kind of separation is determined?	Licenses for any industrial activities that require authorization are granted by the corresponding authority of the executive power. In accordance with its creation Law 15/1980 (partially modified by Law 14/1999), the CSN is a public entity independent of the State Central Administration (SCA). The CSN is the sole competent institution responsible for nuclear safety and radiological protection, has its own legal standing and equity, and independently and objectively carries out the functions attributed to it by law (see figure 1 on page 9 of the national report). However, licenses of nuclear and radioactive installations under MINECO jurisdiction are granted not only based on nuclear safety and radiological protection provisions but also considering other matters of its competence The CSN was established in order to separate regulatory functions on nuclear safety and radiological protection from other functions.
75	Responsibility of dismantling of nuclear and radioactive facilities usually belong to operators of the facilities in many countries. What is the reason and merits ENRESA has the responsibility for dismantling of nuclear and radioactive facilities?	Spanish legislation provides that operating licenses of nuclear installations must be transferred to ENRESA in order to implement the dismantling activities. Funding and implementation of dismantling activities of the nuclear installations are included in the General Radioactive Waste Plan. This scheme ensures availability of resources for dismantling nuclear installations and provides a stable and safe system in full

Nº	PREGUNTA/COMENTARIO	RESPUESTA
		compliance with the Joint Convention requirements.
76	What are the legislative provisions and detailed guidelines for regulatory inspection or assessment activities performed by CSN on the quality assurance programs applied to the low and intermediate level waste disposal, the interim storage of spent fuel, and the design and manufacturing of transport canister for radioactive waste?	The Spanish Regulation on Nuclear and Radioactive Facilities (RINR, in its Spanish acronym), issued in December 1999, regulates the licensing of all nuclear facilities, including those for the interim and final storage of spent fuel and radioactive wastes. As established in the RINR, the owners of the nuclear facility licenses are obliged to apply Quality Assurance Programmes at all the stages in the life cycles of the nuclear facilities (including the interim and final storage of spent fuel and radioactive wastes). In order to obtain the license, the owners must submit a document before the Administration, containing a description of the Quality Assurance Programme to be applied in the facility. This document needs to be approved by the Nuclear Safety Council (CSN). The Quality Assurance Programmes applied at the Spanish nuclear facilities (including those for interim and final storage of spent fuel and radioactive wastes) are based on the Spanish standard UNE 73-401 "*Garantía de Calidad en las instalaciones nucleares*" (Quality Assurance in nuclear facilities). This standard is fully consistent with the 10CFR50 Ap. B and with the IAEA's code and safety guides (50-C-QA). The Quality Assurance Programmes are applied to all the safety-related activities, structures, systems and components in the facilities. They include both the activities performed at the nuclear facilities themselves during their various stages —siting studies, project, construction, startup, operation, temporary shutdown and decommissioning— and those related to the former, such as engineering, manufacturing and inspection (including the manufacture of packages for the transport of radioactive wastes). In order to facilitate the implementation of the Quality Assurance Programmes and their inspection, the CSN has prepared the following Safety Guides (based on 10CFR50 Ap. B, 50-C-QA and UNE 73-401): ▪ GSG-10.01 Basic Quality Assurance Guide for nuclear facilities

Nº	PREGUNTA/COMENTARIO	RESPUESTA
		▪ GSG-10.02 System on documents submitted to Quality Assurance programmes in nuclear facilities ▪ GSG-10.03 Quality Assurance Audits ▪ GSG-10.04 Quality Assurance for the commissioning of nuclear facilities ▪ GSG-10.05 Quality Assurance in essays, tests and inspections at nuclear facilities ▪ GSG-10.06 Quality Assurance in the design of nuclear facilities ▪ GSG-10.07 Quality Assurance at nuclear facilities in operation ▪ GSG-10.08 Quality Assurance for the provision of goods and services to nuclear facilities ▪ GSG-10.09 Quality Assurance on safety-related computer applications in nuclear facilities ▪ GSG-10-10 Qualification and certification of personnel performing non-destructive tests ▪ GSG-10.11 Quality Assurance in first-category radioactive facilities ▪ GSG10.13 Quality Assurance in the decommissioning and closure of nuclear facilities (currently being edited) ▪ GSG 6.1 Quality Assurance in the transport of radioactive substances
77	What are the examples of unplanned and/or uncontrolled release during decommissioning and the radiation protection measures for that situation?	Essentially, uncontrolled releases of radioactive materials during the decommissioning and closure activities in nuclear facilities are due to the loss of confinement of the radioactive material. These losses of confinement or containment failures may be due to the decommissioning activities themselves, to incidents or to accidents, such as fires or explosions. In these cases, the protection measures can be related to the design of the structures and to the operating procedures. Basically, they are similar to those used during normal operation: radiological analysis prior to the discharge of liquid effluents, measurement of gaseous discharges; redundant discharge tanks; successive depressions of the cubicles to be disassembled; etc.
78	What are the critical radiological accidents during decommissioning of the nuclear facilities and the emergency preparedness for those situations?	As far as the spent fuel elements remain within the facility under decommissioning, there is a possibility for the occurrence of criticality events producing uncontrolled releases of radioactive material out of the nuclear facilities. Such possibility must be contemplated both during the handling of the spent fuel elements, while they are

Nº	PREGUNTA/COMENTARIO	RESPUESTA
		discharged from the core, and during their dry or wet storage and their further delivery from the facility. After the fuel elements have been fully removed, the tentative uncontrolled releases of radioactive materials are generally due to accidental events, such as fires, explosions or non-scheduled losses of confinement. These releases are far less important and require an internal emergency plan aimed at managing the event itself; however, as a general rule, no planning is required concerning protection measures to be applied outside the facility
79	In the report is mentioned that the policy for long lived wastes is not yet established. Please explain how is assured long term safety for storage of such wastes, for example radium sources, or other leaking long lived sources (are they conditioned?)	The waste not suitable for disposal at El Cabril facility are: the spent fuel, vitrified waste and LILW from Vandellós I SF reprocessing, ILW generated in NPP's decommissioning, long lived-LLW (sources like radium, americium, etc) and other spent sealed sources. The general policy for these wastes is temporary storage until the decision on their final disposal. It is foreseen the construction of a centralized storage facility for this kind of waste. Up to date SF is safety stored at the NPP's installations, wastes coming from reprocessing are stored in France and, in the case of the management of spent sources, radium sources were sent to USA, americium sources from lightning rods are recycled in UK, and other sources are managed case by case.
80	Among legal standards is cited Royal Decree on the ordering of activities within the nuclear fuel cycle, which is establishing the ENRESA financing method, which is basically configured along 2 routes: a percentage on electricity consumed and a fixed price for management of radioactive waste from radioactive facilities. Could you precise: - the value of the percentage on electricity - if the percentage is on all electricity or only on nuclear generated - the value of the fixed price for management of radioactive waste - how these values are deduced and which are the activities covered by them.	The percentages on electricity sales (all kind of electricity) currently in force (year 2003) are: 0.727% for the consumers paying tariffs regulated by the Government that covers all the electricity price (generation, transport, distribution and commercialization) and 2.062% for qualified consumers, i.e. those contracting directly with the distributors the price of the electricity provided, but have to pay a regulated tariff for the use of the transport and distribution network (the percentage is applied only on this regulated tariff). The fixed price established for the management of the rest of the radioactive waste producers other than nuclear power plants is based on economic consideration for the specific services rendered to these producers. The prices are drawn in

Nº	PREGUNTA/COMENTARIO	RESPUESTA
		accordance with the criteria established in a Standard Contract between ENRESA and the waste generators approved by the Ministry of Economy. The prices for the management of small producers RW are calculated taking into account the cost of the different management stages (transport, treatment, conditioning, storage and final disposal), according to the GRWP economic appraisal. The values corresponding to waste and spent fuel management from nuclear power plants are deduced taking into account a reference scenario which mainly considers: service life-time of nuclear power plants, economic-financial hypotheses and cost of the different activities involved in the management. The activities accounted for in the financial study are: - Structural costs - Research and development - Transport - Storage of low intermediate level waste - Temporary storage of spent fuel and high level waste - Final management of spent fuel and high level waste - Decommissioning of nuclear installations - Management of special wastes - Emergency operating system - Allocations to town councils - Taxes
81	In the report is mentioned that the documentation for getting a construction permit includes an analytical radiological study theoretically estimating the potential radiological impact of the facility on the population and environment, while for the preliminary (site) authorization, among the documents requested, such study is not required. Please explain how is taken into account for the decision for site authorization the potential radiological impact of the facility	In order to grant the previous license, the potential radiological impact upon both the population and the environment is taken into account through the analysis of the "Study for the characterization of the site and of the area of influence of the facility" (described in page 42), which, in accordance with the legislation, must provide any data on the site that may have an incidence upon nuclear safety or radiological protection, including demographic and ecological data.
82	Could you present the QA requirements for maintaining the spent fuel and radioactive	The databases referred to spent fuel and radioactive wastes are records submitted

Nº	PREGUNTA/COMENTARIO	RESPUESTA
	waste data bases	to the quality assurance requirements established in the applicable regulations (10CFR50 Ap.B, IAEA 50-C-QA, UNE 73-401, etc). In so far as specific Spanish guides are concerned, we apply the CSN GSG-10.02 "*Sistema de documentación sometida a programas de Garantía de Calidad en instalaciones nucleares*" (System on documents submitted to Quality Assurance programmes in nuclear facilities) and the GSG-10.09 "*Garantía de Calidad de las aplicaciones informáticas relacionadas con la seguridad de las instalaciones nucleares*" (Quality Assurance on safety-related computer applications.in nuclear facilities).
83	In the frame of long-term safety assessment for near surface disposal facility the great attention is paid to geotechnical stability issues as static loading, influence of erosion and seismic activities. What factors and related safety coefficients determining geotechnical stability level of repository are applied in the process of safety assessment in your country? Are any regulatory requirements concerning up dating of above mentioned coefficients and their monitoring during repository operation there? What are indicators in order to ensure the sufficiency of respective safety coefficients values?	For the construction permit, the operator must file relevant information concerning the site characterisation, including data related to geotechnical studies which support the structural and dynamic design, and are required according to the national standard on structures (EH88) as well as other standards from foreign countries, used at the structure and seismic design (e.g. ACI-349, US NRC RG-1.60, etc.) The extent of the geotechnical studies includes geotechnical surveys of the excavations performed. Generally a safety coefficient of a minimum of 3 has been adopted. The disposal vaults are founded on solid rock providing a good margin above the bearing capacity so determined. Furthermore, condition No. 11 of the operating license of the C. A. El Cabril indicates that it is mandatory for the owner of the facility to perform continuous assessments of the effectiveness of the surveillance, control and inspection practices carried out at the facility, as compared with the previously established objectives, so as to ensure that the structures, systems and components having incidence upon safety during the operation of the facility and in the long term are liable to comply with their foreseen function and that their behaviour suits what is specified in the design bases, following the supplementary instructions established by the CSN. The aforementioned supplementary instructions establish that the owner is obliged to issue a document describing the surveillance, control and inspection plans and programmes carried out in the facility, including: • Identification of the structures, systems and components submitted to surveillance, control and inspection, and requirements applicable to the same.

Nº	PREGUNTA/COMENTARIO	RESPUESTA
		• Acceptance criteria involved in the various parameters submitted to surveillance, control and inspection. • Periodicity established for the performance of surveillance, control and inspection, indicating the criteria applied for its establishment. • Organization and responsibilities established for the performance of surveillance, control and inspection and for the further analysis and evaluation of the results obtained. Reference of the procedures applied for carrying out surveillance, control and inspection. The geological and geomorphological evidences, showing the lack of recent tectonic activity and past big earthquakes, allow to classify the fault area as non active. Based on the seismic, seismic-tectonic and seismic risk studies, the maximum safety design earthquake is a seismic event of intensity MSK VIII, with a maximum horizontal acceleration of 0.24 g and a maximum vertical acceleration of 0.16 g. The disposal facility has been designed to support without damages an earthquake of these characteristics. At the El Cabril facility, the seismic activity is recorded, and for those which activity exceed 75% of the maximum design earthquake an evaluation of its effect is undertaken.
84	Could you describe the time period for which the regulatory body issued a licence for the repository operation? Is this time period fixed or is it bound to any regulatory conditions as periodical safety assessment?	The operating license itself has been enforced for the period ending when the available room in the existing cells is completed. Later on, the closure will take place and the stage of institutional control starts; as a maximum, the latter will last 300 years. The safety studies have demonstrated that, after 300 years have elapsed, the facility can be released from the regulatory radiological controls. Concerning the procedure for the re-assessment of safety at the C. A. El Cabril, the current operating license establishes a system of periodical evaluation (periodical safety reviews) that must take place with a minimum frequency of 10 years. The detailed objectives, scope and field of application of such reviews are shown in item 12.1.1 of the national report.
85	The special long-term concrete containers are used for disposal of radwaste in some cases. What are the procedures to demonstrate guaranteed lifetime of containers to	The concrete containers have a technical study where is demonstrated the fulfilment of specific requirements about structural integrity and functional aspects as well as the

Nº	PREGUNTA/COMENTARIO	RESPUESTA
	regulatory body and what is the basis for evaluation of this characteristic?	requirement included into the regulation regarding transport of dangerous goods by road. This technical study has to be approved by the Nuclear Safety Council. The specific requirements include tests associated to: structural strength, thermal cycles resistant, irradiation resistant and ability to activity confinement. Moreover the containers used are subject to a program to assess the service life (durability) at the disposal conditions during the 300 years time fixed as objective.
86	Are there some categorisations of waste produced outside the nuclear industry, especially from the point of view of disposal options? Is it a possibility to disposed of the disused sealed sources in near surface repository, which are the technical limitation for their disposal?	Although the Spanish regulatory framework does not include a classification of radioactive wastes, the decisions that have been made on this issue and the disposal facilities that are currently licensed and foreseen indicate that, for practical purposes, the classification of radioactive wastes —as from the viewpoint of their disposal options— is the one included in the national report (Section B.3 Table 1). The aforementioned classification does not establish any distinctions concerning the origin of the radioactive wastes; contrarily, as mentioned above, it has been consolidated on the basis of the final storage (disposal) options currently in force or foreseen in Spain. Additionally, it must be noted that there are other classifications of radioactive wastes based on their origin, on the ways in which they are processed or conditioned, or on operating radiological issues. Although such classifications can be very useful for the design and operation of management facilities, because of their specificity, no need has arisen to submit them to a general systematisation. With regard to the second issue being posed, concerning the disposal of obsolete encapsulated sources in surface storage facilities, safety studies have been performed in Spain with regard to the C.A. El Cabril in order to establish limitations for the aforementioned disposal practice. These studies have included analyses on the encapsulated sources that would need to be managed, on the way in which they could be conditioned and on the radionuclides and activity contained therein. Additionally, within the framework of the long-term safety analysis of the El Cabril facility (post-closure safety case), diverse radiation exposure scenarios have been posed and, especially, the ones involving the so-called human intrusion in the storage facility, which might give way to future unadverted contact with the encapsulated sources.

Nº	PREGUNTA/COMENTARIO	RESPUESTA
		The above-mentioned safety analysis was submitted by the owner of the facility to the Ministry of Economy and to the Nuclear Safety Council for its evaluation. As a result of the studies performed, it has been established that encapsulated sources containing radioactive isotopes with disintegration periods of less than five years and conditioned in waste packages could be stored in this facility, as far as they complied with the maximum acceptable activity concentration limits established at El Cabril. The encapsulated sources containing radioactive isotopes with disintegration periods of over five years and not exceeding 30 years will require additional safety studies aimed at establishing the viability of their storage under specific conditioning conditions and following a case-by-case approach. On the basis of the studies carried out so far, the encapsulated sources containing radioactive isotopes with semi-disintegration periods exceeding 30 years shall not be considered as suitable for disposal at this surface storage facility.
87	Are you taking into account possible processes of gas realise in frame of safety assessment for example due to biological degradation, radiolysis, corrosion, etc.? Is the monitoring of gas release carried out during the phase of institutional control after closure of repository? Do you have some experience from repository?	This process has been determined as of little relevance for the safety of the disposal site under the conditions expected at C.A. El Cabril. Nevertheless, before installation closure and before the institutional post-closure phase ENRESA will perform safety analysis that will be evaluated by the CSN. If as a result of that analysis, control and monitoring regarding the gas generation into the disposal vaults were recommended to be established, the appropriated actions will be adopted.
88	Could you describe approach to demonstration of content of unacceptable substances in conditioned radwaste prior to its disposal? Which control methods (destructive and non-destructive) for aforementioned demonstration are used by repository operator?	The approach to demonstrate the absence of unacceptable substances is based on the analysis of the waste production and conditioning processes prior to the acceptance of the different waste streams and through the inspections and audits (process controls) performed on a routine basis at the waste producers' installations. Complementary destructive tests performed on real package specimens assure that the quality of the waste form is not affected by the presence of undesirable substances.
89	How do you examine the irradiated fuel ? How do you treat the damaged spent fuel? Where is it stored?	When high radioactivity is detected in the reactor coolant system, the fuel assemblies are inspected during the refuelling outage. The inspection is carried out by sipping to detect the fuel assemblies failed and ultrasonic or eddy current techniques if necessary in order to determine the failed rod(s). The damaged fuel assemblies can be repaired through the extraction of the failed

Nº	PREGUNTA/COMENTARIO	RESPUESTA
		rod(s). The failed rod is visual inspected to find out the failure root-cause, and after is placed into a basket to be installed in a storage rack of the spent fuel pool. In case of not repairing the fuel assembly is directed stored in a rack in the spent fuel pool.
90	Could you please give us some technical data about reracking of the spent fuel pools particularly the information about neutron absorbers and management of the old racks?	Borated stainless steel is used as neutron absorber in the re-racking processes performed in the Spanish NPPs. In one case the old racks were cut and melted, and after the wastes were stored in drums; in others cases the old racks were cut and directed stored in drums as metallic wastes; and, in other case the old racks were directed stored in a special building.
91	Are the final products of desiccation (drying) acceptable for disposal at El Cabril disposal facility?	Yes, the waste acceptance criteria include a waste package configuration formed by dried liquid (evaporator bottoms, sludges) with an internal concrete wall. The thickness, and quality of this conditioning material depends on the specific activity and chemical characteristics of the waste. It is worth to point out that one of the regulatory requirements for the implementation of the desiccation systems at the NPP's was the a priori demonstration that the final products would conform waste packages acceptable to be disposed of at the C.A. El Cabril. .
92	What preventive measures were implemented to detect spent sealed sources in scrap metal and by whom were they implemented?	Both steelworks and the main metal recovery sites are equipped with detection gateways at the entrance of the facilities; in the case of steelworks, surveillance is supplemented by means of instrumentation in the production processing lines and in the manufactured products. These protection measures were installed by the owners of these industries within the framework of the Protocol for cooperation on radiological surveillance of metallic materials.
93	As there is as yet no disposal route available for long-lived LILW and HLW – what is the basis for determining the size of the costs to be covered by the Fund? What discount rate is used and how are uncertainties treated in the calculations/estimations? How are costs for the construction, operation and closure of repositories for ILW and HLW estimated?	The estimated costs are based on the conceptual designs for both the centralized interim storage facility (ATC) and the deep geological disposal (AGP). The discount rate is 2.5%. ENRESA considers uncertainties in the range of 15-40% for each cost item, included

Nº	PREGUNTA/COMENTARIO	RESPUESTA
		in the construction, operation and closure of both facilities, depending on the confidence of the estimations. The costs for the construction, operation and closure of both installations are estimated on the basis of the conceptual designs, the current experience as well as on the time schedule foreseen for each phase of both facilities.
94	Could you please explain how it is ensured that records of information important to decommissioning are saved for the future?	In Spain, the regulation in force "RNRI" of 1999 requires in art. 20 that all authorised nuclear facilities keep, as part of the official operating documentation, a document including a forecast for the D&D of the plant. This document must be presented to the authorities with the renewal of the license operation for NPPs and includes as a main part a review of all the records useful for the decommissioning process. The plant operator is responsible for maintaining those records until its transference to ENRESA after shutdown. The licensees of nuclear facilities are obliged also to file all the documents and registrations as demanded by the granted licenses during the periods of time established on a case-by-case basis. In addition, the standard contracts signed between the owners of the nuclear power plants in operation and ENRESA, regulating the interactions required for radioactive waste management and decommissioning, specify the owner's responsibility of maintaining the mandatory documents in force and any other documents required to complete the studies and the documentation of the future decommissioning and closure plan, as well as the obligation to put such documents at ENRESA's disposal.
95	It is stated that CSN is the national competent authority in compliance with the Convention on Early Notification of a Nuclear Accident and its emergency centre SALEM is the national communication centre. According to the Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency, DGCD is the national competent authority and SACOP is the national communication point. At the same time, in compliance with the IAEA list of national competent authorities, there is the only one national notification centre and competent authority in Spain – SACOP, Direction General de Protection Civil (based on the IAEA website devoted to ENAC Conventions, data of 14 July 2003).	The EPR ENATOM 2002 requires the existence of only one national contact point (NCP) by State for the scope and purposes of the Early Notification Convention (ENC) and the Mutual Assistance Convention (MAC). Such a point in Spain is, currently, the SACOP of the General Directorate of the Civil Protection under the Ministry of Interior. On the other hand, the EPR ENATOM 2002, requires the definition of National Competent Authorities (NCA) in every country for the application of the ENC and

Nº	PREGUNTA/COMENTARIO	RESPUESTA
	In the above regard, it is not clear how Spain has incorporated the requirements of IAEA EPR-ENATOM 2002 concerning establishment of the uniform national centre for notification and competent authorities for internal and external accidents.	MAC in a domestic or abroad (international) field. Such a national competent authorities in Spain are: - CSN (Nuclear Safety Council) is the national competent authority, domestic and abroad, NCA (A/D) regarding the ENC, - DGPC (General Directorate of Civil Protection) is the national competent authority, domestic and abroad, NCA (A/D) regarding the MAC. **The notification and information supply between the IAEA, Spain and other Member or Party State under the terms of the ENC and MAC in case of nuclear accident is made by the NCP with the support of NCAs defined above using internal communication procedures between the NCP, CSN and DGPC.**
96	What are financial provisions (guarantee) to ensure safe management and secure protection (including disposal) of disused sources?	At present no financial guarantees as such are required to purchasers of radioactive sources, Notwithstanding, the limits and conditions attached to the operating licenses of the radioactive installations establish that the licensee is responsible for returning the disused sources back to the supplier or, where this is not possible, to sign a contract with ENRESA for final management of its disused sources.
97	Are there dose limit quotas established for releases and discharges of uranium facilities?	In Spain, the limitations concerning doses due to the release of radioactive effluents apply only to the uranium facilities in which the decommissioning and restoration works have not been completed; that is, to Planta Elefante, to the storage facilities in Saelices el Chico and to Planta Quercus. Considering that all these facilities are located in the same site, the established dose limits apply to all the liquid and gaseous radioactive effluents released from all of them; the contribution due to radon emissions from the storage facilities is also taken into account in the estimation of the doses. These limits are an effective dose of 0.3 mSv/a and an organ equivalent dose of 1 mSv/a, both established for the most-exposed individual located outside the area under the operator's control. However, in the facilities where the decommissioning and restoration works have been completed —Planta Lobo-G and the Andújar uranium mine—, since there is residual contamination on the site, the dose limits established in the Regulation on Radiological Protection against Ionising Radiations for members of the public are

Nº	PREGUNTA/COMENTARIO	RESPUESTA
		applied: effective dose of 1 mSv/a and skin equivalent dose of 50 mSv/a. In order to verify the compliance with these limits, an environmental radiological surveillance programme is in force at these facilities and the doses are estimated on the basis of the results obtained from such programme.
98	**Waste not suitable for disposal at the El Cabril disposal facility** Section B.3. (page 12) of the report states that the management strategy for those wastes not suitable for disposal at the El Cabril facility (i.e. those in which the main radionuclides have a half life of >30 years) is currently under study. The report gives little information on the nature of these wastes and their current storage conditions. What is the nature of the wastes not suitable for disposal at the El Cabril facility? What are the storage conditions, and how is the safety of these wastes assured?	The waste not suitable for disposal at El Cabril facility are: the spent fuel, vitrified waste and LILW from Vandellós I SF reprocessing, ILW generated in NPP's decommissioning and long lived-LLW (sources like radium, americium, etc). The general policy for these wastes is temporary storage until the decision on their final disposal. It is foreseen the construction of a centralized storage facility for this kind of waste. Up to date SF is safety stored at the NPP's installations, wastes coming from reprocessing are stored in France and, in the case of the management of spent sources, radium sources were sent to USA, americium sources from lightning rods are recycled in UK, and other special sources are managed case by case. Conditioning and storage criteria for other kind of wastes not amenable to be disposed of at El Cabril LILW disposal facility are defined on a case by case basis, depending on the management possibilities for temporary storage. For instance, the graphite from the spent fuel sleeves of Vandellós I NPP is stored on site in special containers until a final management route is found. The future long-lived waste envisaged to arise as a result of NPPs decommissioning will be conditioned according to either the planned centralised interim storage facility or the on site storage facility. Spent sealed sources that are not accepted to be disposed of at El Cabril disposal facility are safely either at the El Cabril interim storage facilities or at Ciemat installations.
99	**Development of a long-term strategy for the management of spent fuel and long-lived radioactive wastes** Section B.5. on page 14 states “As regards the definitive management of spent fuel, HLW and long-lived waste, the different General Radioactive Waste Plans (GRWPs) have contemplated disposal in deep geological formations as being the solution for this	The ENRESA's R+D Plan (1999 - 2003) currently in force, which already takes into account the guidelines of the fifth General Radioactive Waste Plan (GRWP) is available on the web site (www.enresa.es) and hard copies are available on request.

Nº	PREGUNTA/COMENTARIO	RESPUESTA
	type of materials. Having said this, the 5th GRWP currently in force postpones and decision regarding a definitive solution to the year 2010. Meanwhile work will continue along two paths: disposal in deep geological formations and the use of new technologies such as separation and transmutation, which are attracting increasing attention in most countries, driving a process of tracking and suitable participation in the most important international programmes. In this way, and in view of the results obtained, the Government should be provided by that date with the information required to take decisions and with the basic capacity to implement them…….As a result, the decision has now been taken to interrupt activities relating to selection of sites for a future deep geological disposal facility in Spain, to maintain the technological capabilities developed to date and to adapt R&D activities to the new approaches" What R&D is currently being undertaken by Spain, or is planned, in relation to the new approaches for the management of spent fuel and long-lived radioactive wastes? What is the expected scope of the Government decision in 2010 on the management of spent fuel and long-lived radioactive wastes?	Concerning the long-term management of spent nuclear fuel and high level wastes, the plan includes all research activities related to all processes associated to the deep geological repository, including research activities on Partitioning and Transmutation, with the following general premises and objectives: - Research on Partitioning and Transmutation are mainly oriented to follow up and assess the potentiality of these technologies to reduce the source term. These activities, mainly developed by CIEMAT and universities, have a limited scale and are mainly developed in co-operation with organisations of other countries in the EC Framework Programme (The following are typical project examples: PYROREP; CALIXPART;PARTNEW;TECLA;MUSE; N-TOF). - Research directly related to the deep geological repository are developed as a natural continuation of previous plans, taken into account the scope and budget reduction in line with the decision - making time horizon, as well as the limitation of field work due to the unavailability of underground research labs in Spain. Clay and granite are considered as potential host media in Spain. Research projects aim to cover the full range of processes in the near-field (artificial barriers), far - field (natural barriers) and biosphere. Field work is developed in co-operation with organisations of other countries in foreign underground laboratories (Aspö; Grimsel; Mt. Terri; Bure and Mol). Due to the fact that the siting process has been interrupted, the priorities and future needs are aimed to be derived from the non site specific Performance Assessment exercises (granite and clay), currently in progress. In general terms, the R+D undertaken or planned due to the government decision has not been fundamentally changed, but rather limited in scope and budget. It is not possible to anticipate what will be the scope of any new Government decision after 2010, although in any case will take into consideration, among other factors, the technical information to be provided by ENRESA, on the evolution of international references and, needless to say, on the socio-political agreement and dialogue.

PRIMERA REUNION DE REVISION DE LA CONVENCION CONJUNTA

PREGUNTAS AL INFORME NACIONAL

Nº	PREGUNTA/COMENTARIO	RESPUESTA
100	**Provision of additional temporary storage facilities for spent fuel** Section B.6. on page 14 states that "actions have been taken in Spain to increase temporary spent fuel storage capacity, such as re-racking of the NPP pools… Despite this increased storage capacity, the pools of certain plants will become saturated before the end of their foreseen operating lifetime ……. In view of the above the strategy is based on the availability of a centralised temporary storage facility by the year 2010, although this might be complemented with individual facilities in the case of certain of the nuclear power plants, or with a centralised facility serving various plants. What is the current status of the plans for additional temporary storage facilities for spent fuel that are required to be available by 2010?	A centralized interim storage facility is planned in the Fifth General Radioactive Waste Plan, currently in force, to be available for 2010. This facility should store the spent nuclear fuel as well as the long-lived wastes and other wastes not amenable to be disposal of at the El Cabril LILW disposal facility. In this respect, a non site specific preliminary project was completed in the mid nineties mainly for planning and cost estimate purposes. In 2003 a new generic non site specific project, based on a modular vault technology, has been undertaken by ENRESA with the objective to be submitted to the regulatory authorities and make progress in the licensing process, in such a way that if a site could be proposed in 2004 - 2005, the installation could be constructed and made operational by 2010. If for whatever reason a site could not be made available, the envisaged alternative solution is to provide complementary on site storage capacity as and when needed.
101	**Long term strategy for graphite wastes** Section B.8. (page 20) states that graphite wastes fall into the category of those which cannot be disposed of at the El Cabril facility. What is the Spanish strategy for the long-term management of graphite wastes?	For the graphite gas reactor of C.N. Vandellos 1, the foreseen management for the graphite coming from the fuel sleeves is the on-site storage in special containers until the decommissioning operations of the reactor core (stage 3) of C.N. Vandellos 1 dismantling project. This Power Plant is being dismantled to stage 2 (leaving the reactor vessel isolated during a dormancy period of around 35 years). The mass of the graphite sleeves is of about 1000 tonnes, while 3500 tonnes remain inside the reactor pile. Thus the decision on a final solution is conditioned by the option definition for the total amount of graphite to be handled,, including that remaining at the reactor pile. The management of other small amounts of graphite from research installations is under study as a part of the waste acceptance procedures for El Cabril disposal facility.
102	**Deferral of the final dismantling of reactors** Section D.5. on page 29 states that that there will be a "waiting period" of 25 years between partial release of the site and the final decommissioning of the Vandellos 1 reactor. What factors are taken into account when determining the optimum timing for reactor decommissioning?	Decontamination and dismantling activities for Vandellós-I have been extended to the conclusion of Stage 2 of Decommissioning, in June 2003. This stage includes confinement of the reactor shroud, the performance of demolition and backfilling operations and release of a large part of the site. The facility is currently being prepared for the latency period, which will be followed by total dismantling of the remaining parts of the plant (Stage 3).

Nº	PREGUNTA/COMENTARIO	RESPUESTA
	What are the main factors determining the 25 year waiting period for the Vandellos 1 reactor? Are similar waiting periods proposed for the other reactors in Spain when these cease operations?	The rationale for postponing the dismantling in the case of Vandellós-I was mainly related to the radioactivity decay of 60-Co, the most relevant isotope under a radioactive point of view. During a latency period of 25 years the radiological activity of the internal structures of the pile will decay to 5% of the initial level, and dismantling of the vessel may be addressed with minimum radiological risk. At present, El Cabril repository can not accept the graphite wastes resulting from the dismantling of the reactor vessel. This together with the dose reduction effects led to the adoption of a deferred safestore strategy for the only Spanish gas-graphite reactor of Vandellós-I. Nevertheless the alternative considered, for the purposes of calculation and planning, for the other Spanish nuclear plants (light water reactors) currently in operation, is total dismantling (Level 3), to be initiated three years after definitive shutdown of the reactors and following removal of the spent fuel from their pools. The generic decommissioning strategy schedule considered is: - Pre-decommissioning, 5 years before shutdown for planning the D&D project. - Facility shutdown, 3 years for fuel removal and operational waste conditioning. - D&D activities, 5 years for decontamination and dismantling of equipments, systems and structures. - Site restoration & cleanup, 2 years for greenfield or brownfield status. The factors that are taken into account when determining the optimum timing for reactor decommissioning are the following: - Safety - Radioactive Decay/Dose Reduction - Radioactive Waste Volumes - Waste & Material Management - Financial Factors - Technology - Site Re-use - Regulatory Standards - Plant Knowledge / Records

Nº	PREGUNTA/COMENTARIO	RESPUESTA
		- Socio-Political Factors
103	**Releasing sites for other uses** Section D.5. (page 29) refers to two dismantling projects which are currently underway where the objective is to "decommission the facilities and release the site from any radiological restrictions, thereby leaving it available for any other use." What specific standards need to be met to enable radiological restrictions to be lifted so that sites are available for any other use?	The areas potentially affected in the two mentioned facilities were the faces, the floor and the ceiling of their buildings, while no damage was detected in their outer parts. The clearance or declassification of such buildings was carried out on the basis of values in Bq g^{-1} and Bq cm^{-2}, as shown in the IAEA's Safety Series 111-P-1.1 "Application of exemption principles to the recycle and reuse of materials from nuclear facilities".
104	**Construction permits** Section 19.2.1 (pages 43-44) and the sections covering Articles 7 and 14 (pages 117-118, and pages 160-163 respectively) discuss the regulation of new facilities and the awarding of construction permits. The request for a construction permit must be accompanied by various documents including the general design of the facility and a preliminary safety study. The preliminary safety study includes " a description of the facility, including the criteria adhered to in designing the components or systems on which the safety of the system depends," and "analysis of foreseeable accidents and their consequences." Is the construction permit issued on the basis of a detailed design or a preliminary design? What is the system of regulatory control of design changes after the construction permit has been issued, but before the plant is operated? Is a single construction permit issued for the entire construction period, or can construction be authorised in stages? What criteria are used by the regulators to judge the acceptability of the analysis of foreseeable accidents and their consequences?	(i) The **Regulation on Nuclear and Radioactive Facilities** (RNRI) does not specify which type of description must be filed with the request for construction. However, the usual procedure in nuclear facilities is the granting of the construction license on the basis of a description of the facility and its design that is sufficiently detailed to provide adequate grounds concerning the analysis of foreseeable accidents, their consequences and the radiological study. Once the construction is completed, a description of the facility as built is required for the granting of the operating license, as shown in page 44 of the national report. (ii)The modification of a nuclear facility's design or operating conditions is regulated by article 25 of the RINR. This article establishes that any modifications affecting the safety or radiological protection of a facility, as well as the performance of tests in the same, must be previously submitted to an analysis by the licensee, so as to verify that the facility continues to comply with the criteria, standards and conditions on which the corresponding license was based. Should the analysis performed by the licensee demonstrate that compliance with the aforementioned requirements continues to be guaranteed, the licensee is allowed to carry out the modifications or tests, reporting periodically to the Ministry of Economy and the CSN about their implementation. Should the modification in the design involve a modification of the criteria,

Nº	PREGUNTA/COMENTARIO	RESPUESTA
		standards and conditions on which the license is based, the licensee shall request a modification license. Additionally, when —in the opinion of the Direction General for Energy Policy and Mines (DGPEyM) and of the CSN— the modification has a great scope and implies significant construction or erection work, the DGPEyM may require the owner to apply for a licence for the performance of the modification. (iii). Royal Decree 1836/1999 —by which the Regulation on Nuclear and Radioactive Facilities was approved— establishes a single construction permission or license for nuclear facilities. Additionally, during the construction and erection of the facilities, the owner is obliged to perform a programme of pre-nuclear tests, including the tests, verifications and check-ups to be carried out in the various systems included in the facility. Such programme of tests must be approved by the Direction General for Energy Policy and Mines on the basis of a prior report by the CSN. (iv) The criteria applied by the regulatory authorities in judging the acceptability of the analyses and consequences of foreseeable accidents in nuclear facilities are found, fundamentally and as a general rule, in the Spanish standards referred to nuclear safety and radiological protection. On the other hand, on a case-by-case basis, the standards and regulatory criteria from the country where the project was originated are also applicable, as well as the standards from the countries of origin of other projects with similar technological features in specifically established issues.
105	**Periodic inspections to verify compliance** In accordance with the Regulations, nuclear installations require various administrative authorisations or permits in order to operate. Section 19.3 (page 47) states that CSN undertakes periodic inspections to verify correct compliance with the conditions and requirements set out in the authorisations. What is the typical frequency of the inspections undertaken by CSN to confirm compliance with the conditions and requirements of the authorisations?	There can be two types of conditions or requirements: general (that is, shared by all the facilities of the same type) or particular (specific for a given facility). Usually, the inspections concerning the correct compliance with the general conditions are performed once or twice a year by the CSN's Project Manager The inspections referred to specific conditions, involving a given term for their execution, are inspected by the corresponding specialists, on a case-by-case basis and depending on the applicable corresponding time term. During the year 2002, the CSN carried out seven (7) inspections in the

Nº	PREGUNTA/COMENTARIO	RESPUESTA
		waste disposal facility El Cabril and twenty four (24) inspections on installations in dismantling and decommissioning phase, as the *Plan for dismantling and decommissioning of the Vandellos I NPP and the dismantling activities at the Elefant uranium concentrates manufacturing plant,* being the major topics the radioactive effluent control program and surveillance and maintenance Plan and operating regulations regarding the dismantling activities. On the other hand, the CSN's control of safety in the seven Spanish nuclear power plants (NPP) carried out in 2002 to two hundred five (205) inspections of which about 10 % are related in waste management.
106	What are the steps Spain is taking to support a disposal decision by 2010?	Two main lines of action are being carried out. On the one hand, ENRESA, the Radioactive Waste Management Company, following the guidelines of the Fifth General Radioactive Waste Plan currently in force, is developing the following information to be provided to the Government to support the decision - making process: - Study on possible management options - Synthesis reports on the level of knowledge acquired in the Spanish programme for developing a deep geological repository, considering the three host media available in the country. - Report on the potentiality of P/T technologies and its influence in the source term, considering the international experience in the field. On the other hand, as pointed out in Section K.2 of the report, an analysis is being made on how to cover, in an appropriate manner the current lack of administrative procedures regulating the process of designating candidate sites for spent fuel and high level waste disposal facilities.
107	Spain is deferring decisions on HLW and SNF disposition until 2010. Among considerations affecting decisions are separations and transmutation techniques that might impact disposal parameters. What specific R&D is Spain conducting? What bilateral agreements, if any, is Spain involved in related to separations/transmutation? Please provide a reference on the status of transmutation technology.	R+D on P/T technologies is mainly being carried out in the country by CIEMAT research centre and several universities. ENRESA promotes and finances those R+D projects as needed to evaluate the potentiality of these technologies and its possible influence in the source term (volumes of waste, radiotoxicity reduction, etc), mainly aiming at obtaining information for the decision - making process.Obviously, due to the magnitude and scale of these programmes worldwide the Spanish participation is rather limited and always linked to international programmes, mainly to the European

Nº	PREGUNTA/COMENTARIO	RESPUESTA
		Commission R+D Framework Programme.Collaborations are maintained mainly with CEA in France and the ITU of the Joint Research Centre in Karlsruhe. Some specific examples of typical collaboration projects in which Spanish organisations are participating are the following:PYROREP: Pyrometallurgical processing research programme (EC FP).CALIXPART: Selective extraction of long-lived nuclides from high active liquid waste (EC FP).PARTNEW: Partitioning new solvent extraction processes for minor actinides (EC FP).TECLA: Technologies, materials and thermal hydraulics for lead alloys (EC FP).MUSE: Experiments for subcritical neutronics validation (EC FP) N-TOF-ADS/Th ADS/Th Nuclear Data (EC FP).
108109	Spent ion exchange resins at nuclear power plants are included in a list of materials said to have such low activity contents that they are "open to clearance." It is further stated the CSN has determined performance conditions for clearance for spent ion exchange resins (as well as several other materials). The term "clearance," on page 148 in the first paragraph in this section appears to be defined as "the management of very low level wastes by conventional means." What levels of activity (what performance conditions) for spent ion exchange resins are considered to be "low?" Please describe what "conventional management" approaches are used for spent ion exchange resins that are "cleared."	Declassification is understood as an administrative proceeding by which certain waste materials or products with radioactive content, resulting from the operation or the decommissioning of nuclear or radioactive facilities, can be managed using the established conventional methods and do not require the application of radiological regulatory controls. Consequently, the conventional methods are those that are not submitted to radiological regulatory control, without prejudice to their compliance with other applicable regulations. The favourable appraisal by the CSN on the Common Resin Project establishes the technical and administrative requirements to be considered by the owners of the nuclear power plants in their requests for authorization dealing with the declassification of ionic-exchange resins with a low activity content, so that they do not need to be managed as radioactive wastes and can be managed following the conventional methods ruling in Spain. The Common Resin Project establishes, in terms that are common to all the Spanish nuclear power plants in operation, the technical bases, procedures and methods for the declassification of spent ionic-exchange resins generated as a result of the operation of such facilities. For the selection of the declassification levels, that is, the maximum mean contents of radioactivity admissible in ionic-exchange resins for them to be declassified, the corresponding radiological impact assessment was made concerning their management in Spain using the methods currently in force and in accordance with the regulatory framework applicable to this issue. The wastes involved in the Common Resin Project are the spent ionic-

Nº	PREGUNTA/COMENTARIO	RESPUESTA
		exchange resins with low levels of activity that are mostly originated in nuclear power plants with reactors of the PWR type, although a small portion is also generated in those with BWRs. Most of the resins with these characteristics come from the secondary cooling system and, more specifically, from the steam generator purging system and from the condensate polishing system in the plants where the latter is installed; another source of ionic-exchange resins with a low level of activity is water treatment, when water is slightly contaminated as a result of the various maintenance operations in the plant. In order to establish which are the methods applicable for the conventional management of spent ionic-exchange resins in accordance with the applicable legislation, the type of wastes involved must be known. For this purpose, both Act 10/1998 on Wastes and Royal Decree 952/1997, which resulted from the transposition of several European Union directives, are currently in force in Spain. Royal Decree 952/1997 establishes which are the mechanisms required for identifying and characterizing toxic and hazardous wastes, which are defined as: *Any solid, pasty or liquid materials, as well as those in containers, that, being the result of a production, transformation, utilization or consumption process, are aimed at abandonment by their producer and whose composition contains any of the substances and matters shown in the annex, in amounts or concentrations that represent a risk for the environment.* The processes for identification and characterization of the wastes are based on the use of six tables contained in Annex 1 of Royal Decree 952/1997. Annex 2 of such decree includes the listing of hazardous wastes approved by decision 94/904/CE, which was elaborated on the basis of the existing Catalogo Europeo de Residuos (CER) (European Waste Catalogue), where spent ionic-exchange resins are shown under code CER 190806.

Nº	PREGUNTA/COMENTARIO	RESPUESTA
		Thus, the declassification of spent ionic-exchange resins is established for their further management by means of different methods: • Management method 1: Management as a hazardous waste and aimed at a safety storage site. • Management method 2: Management as an inert waste aimed at a conventional controlled rubbish tip. • Management method 3: Management as a special waste, to be burned in an incinerator and whose ashes and scrap will be stored in a safety storage for wastes from incineration plants. In order to assess the declassification levels for the various resins, the corresponding evaluation of the radiological impact associated with their conventional management has been performed, using as a basis the annual production of these wastes and in accordance with the existing management methods, as established in the three alternatives described above. The declassification levels have been derived on the basis of the radiological criteria established in Euratom's Directive 96/29, which was partially transposed to Spain in its Regulation on Nuclear and Radioactive Facilities currently in force: 1. The expectable effective dose for any member of the public caused by further management practices with these wastes shall be in the order of 10 μSv per annum or lower, and 2. The committed effective collective dose per year of execution of the practice shall not exceed 1 Sv.person. The above declassification levels are expressed in terms of activity concentration per mass unit (Bq/g) for each one of the radionuclides potentially present in the resins. The described management model is of a generic character, so that the obtained declassification levels obtained can be applicable to any of the further destinations of the resins (incineration, safety storage, inert rubbish dip) and to whichever is the distance between the producing nuclear power

Nº	PREGUNTA/COMENTARIO	RESPUESTA
		plant and the closest waste reception centre. Thus, the spent resins with activity contents lower than the declassification levels could be delivered by the nuclear power plants to any agency among those authorized in Spain for their further management, in accordance with the three existing technological and legal alternatives. Additionally, the Common Resin Project includes the methodology and criteria that shall be applied in the radiological characterization of the spent ionic-exchange resins in order to guarantee, with 95% confidence, that the declassification levels are not exceeded in the declassified materials. The proposed Common Resin Project does also mention the need for each one of the owners to adopt the corresponding formats and procedures for registering each one of the stages of the process for declassification of spent ionic-exchange resins, thus allowing for a complete traceability of the same until they are delivered to the first receiver for their conventional management.
110	The report states that no radioactive waste management facility has undergone closure yet, but that suitable measures will be taken to ensure compliance with Article 17 at closure of these facilities. However, the El Cabril site is, in part, a final LILW disposal facility. What provisions exist for preserving institutional records regarding the LILW disposed of at the facility?	No formal provisions are yet available on this issue. With regard to the existing provisions for preserving the institutional files and registers after the closure of the El Cabril facility, it must be noted that, in accordance with Royal Decree 1522, dated 1984 and referred to the creation of Empresa Nacional de Residuos Radiactivos (ENRESA), the latter must take care of the permanent maintenance of the custody over the inventory of wastes deposited in the facilities for radioactive waste storage. Such custody is also applicable after the closure of the corresponding facility (art. 6).
111		
112	Please elaborate on the steps taken to ensure QA programs for the safety of spent fuel management and radioactive waste management are established and implemented.	The Spanish Regulation on Nuclear and Radioactive Facilities (RINR, in its Spanish acronym), issued in December 1999, regulates the licensing of all nuclear facilities, including those for the interim and final storage of spent fuel and radioactive wastes. As established in the RINR, the owners of the nuclear facility licenses are obliged to apply Quality Assurance Programmes at all the stages in the life cycles of the nuclear facilities (including the interim and final storage of spent fuel and radioactive wastes). In order to obtain the license, the owners must submit a document before the Administration, containing a description of the Quality Assurance Programme to be

Nº	PREGUNTA/COMENTARIO	RESPUESTA
		applied in the facility. This document needs to be approved by the Nuclear Safety Council (CSN). The Quality Assurance Programmes applied at the Spanish nuclear facilities (including those for interim and final storage of spent fuel and radioactive wastes) are based on the Spanish standard UNE 73-401 "*Garantía de Calidad en las instalaciones nucleares*" (Quality Assurance in nuclear facilities). This standard is fully consistent with the 10CFR50 Ap. B and with the IAEA's code and safety guides (50-C-QA). The Quality Assurance Programmes are applied to all the safety-related activities, structures, systems and components in the facilities. They include both the activities performed at the nuclear facilities themselves during their various stages —siting studies, project, construction, startup, operation, temporary shutdown and decommissioning— and those related to the former, such as engineering, manufacturing and inspection (including the manufacture of packages for the transport of radioactive wastes). In order to facilitate the implementation of the Quality Assurance Programmes and their inspection, the CSN has prepared the following Safety Guides (based on 10CFR50 Ap. B, 50-C-QA and UNE 73-401): GSG-10.01 Basic Quality Assurance Guide for nuclear facilities GSG-10.02 System on documents submitted to Quality Assurance programmes in nuclear facilities GSG-10.03 Quality Assurance Audits GSG-10.04 Quality Assurance for the commissioning of nuclear facilities GSG-10.05 Quality Assurance in essays, tests and inspections at nuclear facilities GSG-10.06 Quality Assurance in the design of nuclear facilities GSG-10.07 Quality Assurance at nuclear facilities in operation GSG-10.08 Quality Assurance for the provision of goods and services to nuclear facilities GSG-10.09 Quality Assurance on safety-related computer applications in nuclear facilities GSG-10-10 Qualification and certification of personnel performing non-destructive

Nº	PREGUNTA/COMENTARIO	RESPUESTA
		tests GSG-10.11 Quality Assurance in first-category radioactive facilities GSG10.13 Quality Assurance in the decommissioning and closure of nuclear facilities (currently being edited) GSG 6.1 Quality Assurance in the transport of radioactive substances
113	The report does not refer to radiological criteria for decommissioning. Please provide a reference for the specific radiological criteria/standards applicable to decommissioning of nuclear facilities.	The radiological criterion to be applied as a general rule for the release of the sites of the closed nuclear facilities has not been established as yet. The radiological criterion contemplated for the various facilities that are currently under a closure process is of 100 μSv/a for the average individual in the affected critical group, considering diverse exposure scenarios, with or without provision for restrictions on the use of such sites in the future.
114	The current licensee of the facility is responsible for completing pre-dismantling operations. After pre-dismantling, the license is transferred to ENRESA (a state company) for dismantling of the facility. After dismantling the license is transferred back to the original licensee. If issues arise about the adequacy of dismantling and decommissioning, what organization has primary responsibility to address them?	ENRESA has primary responsibility for implementing the dismantling works and would be fully responsible in all cases until a decommissioning statement is issued by MINECO. After that there will be no need for an operating license.
115	The report states that the regulatory framework for dismantling and decommissioning nuclear facilities is included in the Regulation Nuclear and Radioactive Installations (RNRI). What is the specific guidance describing the process and information needs -- including appropriate steps to ensure that records of information important to decommissioning are kept -- to dismantle and decommission nuclear facilities?	In Spain, the regulation in force "RNRI" of 1999 requires in art. 20 that all authorised nuclear facilities keep, as part of the official operating documentation, a document including a forecast for the D&D of the plant. This document must be presented to the authorities with the renewal of the license operation for NPPs and includes as a main part a review of all the records useful for the decommissioning process. The plant operator is responsible for maintaining those records until its transference to ENRESA after shutdown. The licensees of nuclear facilities are obliged to file all the documents and registrations as demanded by the granted licenses during the periods of time established on a case-by-case basis. In addition, the standard contracts signed between the owners of the nuclear power plants in operation and ENRESA, regulating the interactions required for radioactive waste management and decommissioning, specify the owner's responsibility of maintaining the mandatory documents in force and any other documents required to complete the studies and the documentation of the future decommissioning and closure plan, as well as the obligation to put such documents at ENRESA's disposal.
116	Section 28 describes the process whereby ENRESA will take possession of sources and transfer them to the El Cabril low-and intermediate-level waste facility. What plans and	At the present time, the Nuclear Safety Council (CSN) allows the disposal of sealed sources conditioned and containing nuclides with half life equal or below to the Co-60,

Nº	PREGUNTA/COMENTARIO	RESPUESTA
	criteria are in place for the long-term management and disposal of disused sources at El Cabril? Are they being stored or disposed there?	provided they meet specific source limits and respecting the maximum activity and other criteria established for the final conditioned package. ENRESA has to present an additional specific safety study for those sources with radionuclides with half-lives between Co-60 and Cs-137 to be evaluated by the CSN. The sealed sources with nuclides with half-lives longer than Co-60 are at present being stored.
117	Spain will begin experiencing insufficient wet pool storage space in 2013. A centralized storage facility for SNF and waste not compatible with El Cabril disposal, is needed by 2010. What are Spain's specific plans and schedules to deploy a new centralized storage facility in seven years?	A centralized interim storage facility is planned in the Fifth General Radioactive Waste Plan, currently in force, to be available for 2010. This facility should store the spent nuclear fuel as well as the long-lived wastes and other wastes not amenable to be disposal of at the El Cabril LILW disposal facility. In this respect, a non site specific preliminary project was completed in the mid nineties mainly for planning and cost estimate purposes. In 2003 a new generic non site specific project, based on a modular vault technology, has been undertaken by ENRESA with the objective to be submitted to the regulatory authorities and make progress in the licensing process, in such a way that if a site could be proposed in 2004 - 2005, the installation could be constructed and made operational by 2010. If for whatever reason a site could not be made available, the envisaged alternative solution is to provide complementary on site storage capacity as and when needed.
118	Radioactive management practices indicate cement is the only "conglomerant agent" currently in use and that "...the treatment of gaseous wastes and filtration and adsorption elements is based on immobilization in cement..." Experience with cement in the U.S. has shown that the use of cement to solidify and provide long-term stability for radioactive wastes can pose problems. Please provide information on Spains' efforts to develop such waste forms that have long term stability.	The long term stability is assured by the durability studies performed on the final package or disposal unit as disposed of, including the characteristics of the container. If a new container is proposed, it has to be authorized by the CSN after the presentation of a study dealing with the aspects related to the structural and functional integrity in order to provide retrievability and transport
119	Please provide a reference for Spain's Regulation on Nuclear and Radioactive Installations, which requires submission of a radioactive waste management plan by the end of 2003, with implementation in 2004. What is the review and approval process for these plans? What are there requirements for changes and updating? Will disapproval result in shutting down operations?	*Article 20 of the Regulation on Nuclear and Radioactive Facilities, approved by Royal Decree 1836/1999 on December 3, referring to the documentation to be filed by the owners of nuclear facilities applying for operating licenses, establishes that:* • The Safety Assessment must describe the systems for the collection and disposal of radioactive wastes (20.a.2) • A radioactive waste management plan must be presented, including, on a case-by-case basis, the contracts made with management companies

Nº	PREGUNTA/COMENTARIO	RESPUESTA
		and, among other issues, a system for their tentative declassification (20.h) Article 30 of the above Regulation, referring to the documentation to be filed with the application for a license involving the decommissioning and closure of nuclear facilities, establishes that the application must include a Plan for the management of radioactive wastes containing their inventory, characterization, treatment, conditioning and foreseen storage, as well as the criteria adopted for the declassification of materials (30.g). The requirements in these articles are also applicable to the radioactive facilities of the fuel cycle, as established in article 37 of the same regulation. In applying these articles, the owners must develop a Plan for the management of radioactive wastes. Currently, all the Spanish nuclear facilities have their own Plan for waste management; nevertheless, in 2002, the CSN fostered a process for the enhancement of such plans on the basis of the objectives and scope described in detail in the national report (Section K.3) In order to facilitate the preparation of the Plans for waste management by the owners, the CSN, UNESA, ENRESA and ENUSA have prepared a draft guide aimed at establishing the scope and the detailed contents of: 1. The Plan required, on a case-by-case basis, by Articles 20.h and 30.g of the Regulation on Nuclear and Radiological Facilities. 2. The supporting studies required for the preparation of the contents of the Plans, as defined in the aforementioned guide. 3. The periodical information to be filed before the CSN on the activities in each Plan, in compliance with the requirements associated to the operating licences of the facilities. The Plans must be prepared by each one of the owners producing the wastes and shall be submitted for the approval of the Ministry of Economy. The Ministry of Economy shall send these proposals to the CSN for the latter to issue its technical report on the subjects of its competence. Once the corresponding report is issued, the Ministry of Economy shall either approve the Plan or ask the owner to make the necessary modifications to the proposal.

Nº	PREGUNTA/COMENTARIO	RESPUESTA
		On the basis of the draft of the aforementioned guide, once the Plan for waste management of a facility is approved, any further modifications will require the authorization by the Ministry of Economy, after a favourable report by the CSN: 1. Evolution or definite changes from radioactive waste areas to conventional waste areas; 2. Modifications related to the methodology applied for the classification of the facility in waste areas; 3. Modifications of the action lines included in the Plan and significant alterations in the planning foreseen for their implementation. Any other modification can be carried out under the responsibility of the owner, although it must be reported to the Ministry of Economy and to the CSN within one month after its enforcement. On the basis of the draft of the aforementioned guide, the owner shall update the Supporting Studies at least every five years, while the Plan shall be updated, at least, every ten years, on the basis of the updates performed in the Supporting Studies.
120	Annex E shows a total inventory of 47,800 cubic meters of waste while the latest available IAEA Waste Profile Report shows 9,934 cubic meters in storage and 360 disposed. Please explain the difference.	The total inventory showed in Annex E includes the most accurated figures available at the moment. Moreover, the latest available IAEA Waste Profile Report (on its web site) is the nº5 report of 2003, containing figures as of December 2000 (total inventory of 25,294 m3). The reason for the difference is two fold. On the one hand, the delay in reporting to the IAEA, and on the other hand, on the reporting basis of the inventory at El Cabril disposal facility (the reporting to the IAEA profile is taken into account the waste packages as received while for Annex E the volume is based on the overpack, which is the minimum disposal unit).