Convention on Nuclear Safety
Questions Posted To Argentina in 2008

Q-01	Country Belgium	Article General	Ref. in National Report 3.6.4.2.3
Question/ Comment	What are the lessons learned from the Forsmark incident (July 2006) with respect to the modification of the emergency electrical supply systems ?		
Answer	According to the information provided by IRS and WANO it is understood that Forsmark incident of July 2006 is not directly applicable to CNA I and CNE. In both plants the control of rectifiers, batteries and inverters is not integrated in a single unit. The Emergency Diesel System control is DC supplied, with batteries as a passive back up. Anyway it should be verified if there is no link through the control logic of the Emergency Diesel System with normal power buses.In the case of CNA I, as part of the PSA update, a very detailed model of uninterruptible electric supply has been developed. This model verifies the independence between the rectifiers control and the batteries when these are required.It should be remarked that due to a Loss of Offsite Power event occurred in 2004 in CNA I (see Annex 8), there were lessons learned and corrective actions involving grid problems and related dynamic effects and trip of electric protections.The basic engineering of AREVA project for future Emergency Power Supply in CNA I is being reviewed by NASA. The Forsmark event is taken into account in performing this review.The analysis performed for this event by OE Central Group has been sent to CNA II for its consideration and is presently under analysis.		

Q-02	Country Belgium	Article General	Ref. in National Report 3.7.3.2.3
Question/ Comment	The individual license is a permanent license. How can ARN oversee that the knowledge required for the individual license still is up to date and adequate ?		
Answer	AR 0.11.1 and AR 0.11.2. standards set the criteria and procedures to provide individual licenses and specific authorizations to the personnel who apply for licensable functions in nuclear installations. Besides, both standards establish terms and conditions according to which the Regulatory Body issues, such individual licenses and specific authorizations, after the analysis and corresponding report of its Advisory Committees. Two kinds of conceptually different certifications are issued: Individual License: It is a certificate, of permanent feature, recognising the technical-scientific qualification necessary to perform a certain function within the operation chart of a certain type of nuclear installation. The individual license is a necessary but not sufficient condition for occupying a licensable position in a given nuclear installation.· Specific Authorization: It qualifies a licensed person to perform such function in a particular nuclear installation. It has a maximum validity period of two years and may be renewed. The Licensee shall submit the necessary documentation to the Regulatory Body whenever an individual license or a specific authorization is required for its personnel. The "Consejo Asesor para el Licenciamiento del Personal de Instalaciones Relevantes (CALPIR -Advisory Committee for the Licensing of Relevant Installation Personnel -), which advises the Board of Directors of the Regulatory Body concerning these matters, evaluates each applicant’s qualification and either suggests the issue of the requested certificate or recommends a requirement to the Licensee, for the applicant’s training and		

achievement of the needed qualification.
Persons who need to obtain an Individual License, Specific Authorization or its renewal, must fulfil a number of requisites concerning qualification, working experience, training and re-training, which will all depend on the installation and on the function. Furthermore, these persons must fulfil a psychophysical aptitude certificate as well. These requisites are summarised as follows:
To obtain an Individual License:
Basic qualification requisites: an educational level (secondary, university or post-graduated) suitable to allow the access to higher stages of qualification according to the technical scientific capability required for the task and function level.

Specialised qualification requisites: the technical-scientific knowledge in the nuclear field required to perform adequately a licensable function. The specialised qualification must respond to programs accepted by the Regulatory Body and to the approval of examinations with the participation of personnel of such Body.
Working experience requisites: relevant experience for the correct performance of the function applied for.

To obtain or renew a Specific Authorisation:
It is required: a suitable license for the function.
Specific qualification requisites: knowledge regarding radiological safety, installation operation and characteristics, responsibilities of the position to be licensed and the mandatory documentation. The extension and depth of the postulant's knowledge shall be such that contributes to the safe operation of the installation. The specific qualification is obtained after taking courses according to programs accepted by the Regulatory Body and approving examinations with the participation of personnel of such Body.
On-the-job-training requisites: to have carried out tasks corresponding to the function applied for, under the supervision of licensed personnel, in the same or similar installation.
Re-training requisites: to take courses and periodic evaluations prepared by licensed personnel in the operation of a nuclear installation under normal and abnormal operating conditions, with the purpose of updating knowledge and developing aptitudes which will enable the applicant to face eventual abnormal operating conditions.
Psychophysical aptitude requisites: the applicant's psychophysical condition shall be compatible with the psychophysical profile needed to perform a licensable function as required.
The Individual License is not transferable, its validity is permanent and only could be revoked in case of false data previously declared. The Specific Authorization will expire as maximum within two years after the issuing date and will be subject to a psychophysical certificate validity.
The Specific Authorization could be modified, suspended or revoked due to different reasons such as inadequate performance, no achievement of the annual re-training program, as well as no work in the specified function during more than a year.
In summary, to be authorized to work in a particular installation the personnel who perform specified functions shall have both an Individual License and a Specific Authorization (licensed personnel). As a requirement, only the personnel who have Individual License can apply for a Specific Authorization.

	To maintain licensed personnel updated and the adequate level of knowledge and skills required , an annual re-training program is implemented and must be approved by the licensed personnel.		
Q-03	Country Belgium	Article General	Ref. in National Report 3.7.3.2.3
Question/ Comment	There seems to be no difference in requirements between obtaining (for the first time) and renewing a specific authorisation. Could you give some additional explanation ?		
Answer	The differences between the requirements to obtain Specific Authorization and its renewal are the following: For Specific Authorisation: Specific qualification requisites: knowledge regarding radiological safety, installation operation and characteristics, responsibilities of the position to be licensed and mandatory documentation. The extension and depth of the postulant's knowledge shall be in such a way that contributes to the safe operation of the installation. The specific qualification may be obtained after taking courses according to programs accepted by the Regulatory Body and approving examinations with the participation of personnel of such Body. On-the-job-training requisites: to have carried out tasks corresponding to the function applied for, under the supervision of licensed personnel, in the same or similar installation. Psychophysical aptitude requisites: the applicant's psychophysical condition shall be compatible with the psychophysical profile needed to perform a licensable function correctly. To renew a Specific Authorisation: To have a Specific Authorisation in force. Requisites of re-training: to take courses and periodical evaluations prepared by licensed personnel in the operation of a nuclear installation under normal and abnormal situations, with the purpose of updating knowledge and developing aptitudes, which will enable the applicant to face eventual abnormal situations. Requisites of psychophysical aptitude: the same as before. The Specific Authorization will expire as maximum within two years after the issuing date and will be subject to a psychophysical certificate validity. The Specific Authorization could be modified, suspended or revoked due to different reasons such as inadequate performance, no achievement of the annual re-training program, as well as no work in the specified function during more than a year.To maintain licensed personnel updated and in the adequate level of knowledge and skills, an annual re-training program is implemented and must be approved by the licensed personnel.		
Q-04	Country Belgium	Article General	Ref. in National Report 3.7.3.3
Question/ Comment	At what frequency are the different inspections, assessments and audits performed ?		
Answer	See support document: Inspections, assessments and audits frequencies		
Support Documents	» Inspections, assessments and audits frequencies		

Q-05	Country Belgium	Article General	Ref. in National Report 3.8.2.1.3
Question/ Comment	Who is meant with stakeholders ? How is the satisfaction of each stakeholder measured ?		
Answer	See support document: Stakeholders considered by ARN		

Q-06	Country Belgium	Article General	Ref. in National Report 3.14.3.1.1
Question/ Comment	Could you give some more detail on how the RPV surveillance programme is continued ?		
Answer	As mentioned in the Argentinean Report, the CNA-I RPV surveillance program led to an important uncertainty in the evaluation of the results, which implied not been able to use the results in a safety study.Therefore, the surveillance program was replaced by an irradiation program in host reactors: VAK (Germany), Loviisa (Finland), and BR2 (Belgium). The evaluation of the results was done by an international consultant lead by CEN/SCK of Belgium.The CEN/SCK report concludes that the integrity of the CNA I RPV is guaranteed until end of life (EOL) and 1.5 EOL without any additional condition using the NRC acceptance criteria. The same conclusions were obtained using French and German criteria. The results were independently evaluated by the ARN who considers that according to the evaluations performed so far, the RPV integrity with respect to the material properties is assured at least until the plant design EOL. Nevertheless, the RPV integrity assessment is considered a permanent subject. ; For that reason ARN considers that a permanent evaluation is necessary in the areas of non destructive tests, pressurized thermal shock (PTS) and neutronic, including the results from the periodic RPV inspections.In this frame, ARN has signed a contract with Oak Ridge National Laboratory (USA) in order to evaluate the PTS, evaluation which is now being undergone Additionally, during the next CNA-I planned outage, and in the frame of the ISI program, specific inspections will be conducted, which include the RPV nozzles.According to the results obtained from such evaluations and inspections, it will be decided if additional studies are needed.		

Q-07	Country Belgium	Article General	Ref. in National Report 3.15.2
Question/ Comment	What are the main reasons for the large difference between CNA1 and CNE annual average collective dose per unit of electricity generated (respectively 11% and 1% of hte collective effective dose constraint) ?		
Answer	The main reasons for the large difference between CNA-I and CNE annual average collective dose per unit of electricity generated are:a) About 90% of the collective doses are due to tritium discharges because CNA-I and CNE NPPs are cooled and moderated with heavy water, but both NPPs have different designs. In CNA-I, the coolant and moderator systems are connected and its tritium concentration is about 21 Ci/L, while in CNE, coolant and moderator systems are not connected, and the discharges mainly contain tritium coming from the coolant system, whose tritium concentration is about 2 Ci/L.b) Regional collective dose is strongly dependent on the population distribution around the NPP. In the case of CNA-I it is located at 100 km from Buenos Aires (where a half of the population of Argentina live, 17 million people approximately,) while CNE is located at 700 km from this city.c) The power of CNE is 600 MW(e), almost double of CNA-I, 335 MW(e). It means		

that, to express the collective dose per unit of electricity generated, is necessary to divide the tritium activity discharged, by a higher number in case of CNE than in case of CNA-I. Therefore, as the discharged volume from both plants are quite similar, the collective dose per energy unit in CNA-I is higher than in CNE.

Q-08	Country Germany	Article General	Ref. in National Report
Question/ Comment	Argentina has provided a comprehensive report demonstrating a strong commitment for the effective implementation of the obligations and the review process of the convention.		
Answer	Thank you very much for the comment from Germany.		

Q-09	Country Russian Federation	Article General	Ref. in National Report Chapter 2
Question/ Comment	Section 2.7 presents a number of improved safety aspects (features) of Atucha-2 unit under construction as compared to currently operating units. Will the above improved safety aspects applicable for Atucha-2 be implemented at the operating plants?		
Answer	As it was informed in previous Argentinean National Reports, a backfitting programme for CNA-I was established by the Regulatory Body and has been already implemented in the plant. The improvements cover many of the topics which were already covered in CNA II, due to the similarity of plant's design:· - elimination of Stellite-6 in reactor internals· - installation of control rods and instrumentation guide tubes of new design· - installation of fuel channels of new design· - installation of the second heat sink system (emergency core cooling system that uses the steam generators). Second heat sink also included major I&C modifications and improvements and has an independent emergency power supply. · - new tools used for the RPV integrity analysis. · - improvement of the inspection of the RPV circumference welding, through a new inspection device. Also, based on CNA II design, improvements to High Pressure Injection System and Boron Shutdown System and new reactor trip initiation signals were also introduced in CNA I. At present there is a new emergency electric supply system under study which is an updated version of the presented one by Siemens –KWU in 1994. For the CNE plant, which is a CANDU type reactor, safety improvements come mainly from CANDU Owners Group (COG). Many of them are now being under consideration within the plant life extension project framework.		

Q-10	Country Ukraine	Article General	Ref. in National Report Chapter 2, page 15
Question/ Comment	Section 2.10 describes the NPP operation assessment system with the help of safety performance indicators. Is there publicity access to these indicators, for example US NRC – at the official Internet site?		
Answer	This set of safety performance indicators is not a stand alone regulatory tool, but it is used with other ones in the monitoring of safety. So, they provide a partial view of the NPPs performance. As indicated in the report, they are not, by themselves,		

	sufficient to fully assess safety during NPP operation. In other words, taken in isolation they could lead to conclusions about the state of the operation of a plant and its safety-related features, which do not really reflect such status, in particular when interpreted by a non-technical audience. Nevertheless, the possibility of making operative such indicators may be considered in the future. Besides, the safety performance indicators that NASA sent to WANO are published by this Organization.		
Q-11	Country Canada	Article Article 6	Ref. in National Report Sections 3.6.5 and 3.6.6
Question/ Comment	Sections 3.6.5 and 3.6.6 state that during this reporting period, CNE operated with “acceptable safety margins”. Please describe how acceptable safety margins are being demonstrated and maintained at CNE taking into account the effects of heat transport system ageing, in particular the ageing of major components including pressure tubes and steam generators.		
Answer	The safety-related ageing phenomena on the primary heat transport system (PHTS) of a CANDU reactor are: - Pressure tubes longitudinal and diametrical creep, - PHTS rugosity increase, - oxide deposits on the steam generator (SG) tubes inner walls. The operational parameters associated with ageing are: - Reactor inlet headers coolant temperature, - coolant steam quality in the reactor outlet headers, - PHTS total flow. The current values of those parameters obtained after interventions in the PHTS, such as the SGs tubes primary side cleaning and SGs separator plates replacements (bottom plenum), are:· - Reactor inlet headers coolant temperature: the maximum allowable value is 270 °C. The current value is 265 ºC, · - coolant steam quality in the reactor outlet headers: the maximum allowable value is 4%. The current value is less than 1%. · - PHTS total flow: the current flow (estimated through heat balances in the secondary and primary circuits) is 8700 kg/s. This value is similar to the one estimated during the first years of operation.		
Q-12	Country Croatia	Article Article 6	Ref. in National Report para 3.6.3
Question/ Comment	Do continues nuclear power plants improvements have impact on the electricity tariff system and/or prices of electricity?		
Answer	Indeed, the continuous nuclear power plants improvements have impact on prices and electricity tariffs. Currently, the price of the energy generated by NASA, as well as the rest of electricity suppliers, is the recognition of variable costs (fuel), and fixed costs (maintenance and short-term investments for improvements).		
Q-13	Country Czech Republic	Article Article 6	Ref. in National Report
Question/ Comment	CNA 1 has been in operation more than 33 years. PSR process was introduced in Argentina in 2003. What is the prognosis of long – term operation of CNA 1 and		

how frequently is PSR performed (taking into account its age?)

Answer

CNA-I NPP was designed to operate for 32 full power years. On December 2007 CNA-I had 23,5 effective full power years of operation.
As was stated in the previous Argentinean National Reports, a backfitting program was established from 2000 to 2005 in CNA-I by the Regulatory Body.
All the backfitting activities were fulfilled. The main activities performed were:·
- Commissioning of the second heat sink system. Replacement of all channels with "Stellite-6".·
- Replacement of all control rod guide tubes by a new one with improved nozzle design.·
- Replacement of in-core neutron flux sensor guide tubes.·
- Cleaning of moderator tank.·
- RPV integrity analysis using new tools.·
- Moderator water level measurements·
- A control rod shutdown system test program with the objective of detecting early effects of potential failures in the new control rods.·
- Updating of the Safety Analysis Report, Probabilistic Safety Assessment, Operation Policies and Principles Manual, Maintenance Manual and Quality Assurance Manual.

Under the continuous safety improvements policy, additional improvements are reported in the fourth Argentinean National Report. However, ARN has not received any formal request from the licensee to extend the CNA I's life time.
Concerning the PSR frequency, until 2003, PSR as defined by IAEA had not been required in Argentina. It could be mentioned that Argentinean Regulatory Standard "AR 3.9.1. – General Safety Operation Criteria" establishes that the Safety Reports of nuclear installations must be updated each time that a safety significant plant design modification is performed and once every five (5) years. These Safety Reviews, which are part of the continuous improvement program, foresee a continuous following of the safety issues, the operative experience feedback and the ageing management program.
Additionally, there is a permanent Regulatory Body activity, on both the standards review and the standards updating, whose target is to maintain the Argentinean standard system updated. This regulatory strategy enables a continuous and effective control of the safety condition of the plants.
However, in 2003 the ARN Board of Directors nominated a specific committee to analyse and update the NPPs Operating Licenses considering national and international state of the art.
It was considered appropriate that the PSR will be applicable from the renewal of the NPPs licenses and not prior the issue of the new licenses, because at the time of their issuance, the safety level established by their design were kept, the safety documentation were updated, and the necessary safety improvements coming from the operative experience feedback and the ageing management programs, were implemented.
As a consequence, and taking into account the improved safety condition of the installation after the backfitting program carried out, at the end of 2003 the new license for CNA I was issued. It includes two major changes:·
- To include a validity period of the Operating License of 10 years. (*)·
- To require a formal PSR for its renewal.

(*) The validity of such licenses is subordinated to the compliance with the conditions established in the corresponding license, as well as with the standards and requirements issued by the Regulatory Body. The non-compliance with any of the standards, conditions or requirements should be enough reason for the Regulatory Body to suspend or cancel the corresponding license validity, according to the sanction regime in force.

Pak-1,2,3.	Country Pakistan	Article Article 6	Ref. in National Report

Question/ Comment

Section 3.6.4.2.2, Page 19
1) It is mentioned that 85% of physical protection system improvement work was completed by April 2007 and personnel responsible for this work are undergoing specific training. Please provide some details regarding the training of the personnel and the system improvements.

Section 3.6.4.2.3, Page 19
2) As the main designer of the plant CNA I is KWU, but NRC regulations are also adopted. Please inform how the NRC regulatory requirements are harmonized with the requirements of KTA regulations.

Section 3.6.4.2.3, Page 27
3) For diesel generator surveillance testing are requirements taken from KTA or NRC? Kindly provide detailed information about diesel generators surveillance testing.(testing types and test frequencies.)

Answer

1)

The CNA I Physical Protection (PP) Division, includes the following personnel in order to carry out their duties: ·
- A Head of Division ·
- Heads of Section (Administration, Maintenance and Operations) ·
- Administrative (Administration) ·
- Technicians (Maintenance) ·
- Assistants (Operations), and·
- Operators (Operations)

The staff training plan has the following features:
CNA-I NPP General courses:·
- Introduction to CNA-I (All PP staff)·
- General knowledge on Radiological Risks and plant lay-out (All PP staff)·
- Specific knowledge on Radiological Risks and plant lay-out (All PP staff)·
- Fire fighting (Operations section staff)·
- First Aid (All PP staff)·
- CNA-I annual safety course (All PP staff) ·
- Specific courses on Physical Protection (PP): ·
- Concepts of PP (All PP staff)·
- Procedure on CNA-I input/output of materials (All PP staff)·
- AR-10.13.1 Standard. PP of materials and nuclear installations (All PP staff)·
- Computing Course (All PP staff)·
- Credential Issuance (Administration staff)·
- PP Information System Operation (Operations section staff)·

- X-Ray detection system Operation (Operations section staff)·
- PP Information System Configuration (Maintenance section staff)·
- Explosives Detection (Operations section staff)·
- Metals detector (Operations section staff)·
- Other specific courses

Concerning the system improvements, they are described in the text of the Report. No further details are provided because they are classified as confidential.

2)

The first Argentinean regulatory standards related to nuclear power plant licensing were issued some thirty years ago.
The CNA-I purchase contract specified that the components, designed and manufactured in the Federal Republic of Germany, had to fulfil the German standard requirements and that the CNA I design had to be licensable by that country.
Some Argentinean regulatory standards were issued after the construction of CNA I and CNE, so the Regulatory Body did not ask for their immediate application. Nevertheless, those standards are already been fulfilled or are being implemented.
Argentinean regulatory standards are not prescriptive but "of compliance" with safety objectives, which means, of performance of systems, equipment and components. Good engineering judgements, qualification of operators and Licensee's way of making appropriated decisions, are the basis for the achievement of such objectives.
However, in some opportunities a prescriptive criteria has to be adopted by the Regulatory Body in order to verify the performance fulfilment on the solutions proposed by the Licensee.
In that respect, recommendations or standards coming from different organizations (IAEA, NRC, etc) may be adopted by ARN to regulate some specific subjects.
As an example, from 2000 to 2005 CNA-I was under an upgrading plan. One of the main design changes, regarding plant safety, was the installation of the Secondary Heat Sink, that includes major I&C modifications and improvements, such as the new logical system using TELEPERM XS technology.
The Secondary Heat Sink was licensed under the following Argentinean Regulatory Standards:· }
- AR 3.2.1 – General Safety Design Criteria for Nuclear Power Plants.·
- AR 3.2.3 – Fire Protection for Nuclear Power Plants.·
- AR 3.4.1 – I&C and Reactor Protection Systems for Nuclear Power Plants.·
- AR 3.5.1 – Emergency Power Supply for Nuclear Power Plants.·
- AR 3.6.1 – Quality System for Nuclear Power Plants.

In addition, the German safety standard KTA-3503 "Type Testing of Electrical Modules for the Reactor Protection System" was applied to I&C digital technology such as the Teleperm XS System implemented. The qualification tests were performed by the Gessellschaft für Anlagen und Reaktor Sicherheit (GRS) together with the Technischer Überwachungs Verein (TÜV) from Germany.
NRC asked Siemens AG for the provision of a comparison between German and American standards in the frame of nuclear industry. With this information, NRC also qualified the system through tests performed by EPRI.

All mechanical components were designed and constructed according to KTA standards.
The NRC certification helped ARN to authorise the use of the TELEPERM XS system in the CNA-I including the restrictions mentioned in such certification.It is important to mention that there are few similar situations in the argentinean regulatory practices, and they are specially considered case by case.

3)

CNA II diesel generators (DG) are provisionally part of CNA I electrical emergency system.
Surveillance test uses KTA standard 3702.2 as a reference.
There are two tests involving CNA II diesel generators: ·
- Annual test during plant programmed shutdown: The test simulates an actual demand of CNA I – CNA II electric bars interconnection, with CNA II DG feeding the bars (the condition is loss of external electric supply inhibiting CNA I diesels to start).·
- Every 45 days (staying CNA I in operation) one CNA II diesel generator is started from CNA I control room, testing the availability of the interconnection up to the electric feeding of the switch that would connect to CNA I normal bars. After finishing this part, the rest of the DG operational tests below mentioned are performed. Three months is the period of time between tests for each DG.

The operational tests consist on:·
- Checking the conditions for the start-up: Levels of fuel, coolant, lubricants; valves alignment, availability of air in the air start-up system, speed regulator setting, existence of pre-lubrication and pre-heating.·
- Checking the service conditions: Power and frequency synchronization with the bus bar; speed regulator behaviour; and others temperature and pressure measurements.

Concerning the diesel auxiliary systems controls, there are daily controls of the DG cooling system. At every shift turn, there are controls of oil level and leaks. There is also a weekly control of water chemistry. Similar controls are performed on cooling units.

Q-14	Country Australia	Article Article 7.1	Ref. in National Report Pages 8, 36
Question/ Comment	We appreciate the information provided by Argentina on its experience with the use of safety indicators for the safety performance of NPPs. Australia is keen to learn more of the "Effectivness and Efficiency" indicators that Argentina use to measure the effectiveness and performance of its nuclear safety regulatory framework. For example, we have an interest in indicators used to measure: - the effectiveness of outcomes and processes; - efficiency of processes in terms of timeliness, cost and resource utilisation; - effectiveness of enforcement and compliance activities; and - stakeholder satisfaction.		
Answer	See support document: Safety performance indicators		
Support Documents	» Safety performance indicators		

Q-15	Country Australia	Article Article 7.1	Ref. in National Report
Question/ Comment	With regard to the issue of transparency in nuclear safety regulatory decision making, Australia would be grateful for any information that Argentina could provide on the processes it has in place to achieve transparency of the regulatory decision making process, for both licensees and members of the public, particularly where there is no legislated process in place.		
Answer	By Decree 1172/03, the Regulatory Body, as an agency belonging to the National Public Administration, must improve the quality of its institutional information. This decree was issued by the President of República Argentina and regulates the access to public information within the executive branch, guaranteeing the exercise of this right to everyone without distinction. It also regulates instruments aimed at expanding citizen participation and transparent management, creating an institutional space that allows citizens to meet and discuss acts of government and at the same time provides a means to the administration to understand and perceive the community's opinion regarding its decisions. This decree considers, among others, the rules for citizen participation in the elaboration of regulatory standards. It aims to promote effective citizen participation in the process of drafting administrative rules and bills. Everyone can request the completion of the procedure in question and may participate by submitting written views and proposals properly substantiated. Furthermore, ARN has in place a dedicated section in its web page to allow publicity of the standards to be modified and to receive the opinion of the interested parties.		

Pak-4	Country Pakistan	Article Article 7.2.1	Ref. in National Report Section 3.7.3.2.2
Question/ Comment	It is mentioned that requirement of PSR was enforced by the end of 2003. Kindly indicate whether the PSR was carried out by CNA I and CNE for the new license issued in 2003 and 2007 respectively?		
Answer	There were no PSR required to CNA I and CNE prior to the issue of the new Licenses. Until 2003, PSR as recommended by IAEA, had not been required in Argentina. It could be mentioned that Argentinean Regulatory Standard "AR 3.9.1. – General Safety Operation Criteria" establishes that the Safety Reports of nuclear installations shall be updated each time that a plant design modification is performed and once every five (5) years. These Safety Reviews, which are part of the continuous improvement program, foresee a continuous monitoring of the safety issues, the operative experience feedback and the aging management program. In addition, there is a permanent Regulatory Body activity, on both standards review and standards updating, whose target is to maintain the Argentinean Standard System updated. This regulatory strategy enables a continuous and effective control of the safety conditions of the plants. However, in 2003 the Board of Directors of the ARN nominated a specific committee to analyse and update the NPPs Operating Licenses considering national and international state of the art. It was considered appropriate that the PSR would be applicable from the renewal of the NPPs licenses and not prior to the issue of the new Licenses, because at the		

moment of their issuance, the safety level established by their design were kept, the safety documentation were updated, and the necessary safety improvements coming from the operative experience feedback and the aging management programs, were implemented.

Q-17	Country Croatia	Article Article 8.1	Ref. in National Report para 3.8.1

Question/ Comment	Does ARN uses services of the qualified Technical Support Organizations (TSO)? If yes, how these organizations are categorized/licenced and what are their responsibilities?
Answer	The ARN as a regulatory body, is responsible for verifying that nuclear facilities are designed and operated in compliance with the existing regulatory rules and standards. In order to do so, ARN has qualified personnel in the appropriate disciplines, and contracts other institutions to give advice on specific topics but retaining its responsibilities and functions. The ARN personnel is capable of evaluating any assessments performed by consultants. As it can be seen in the point 3.8.4 of the fourth National Safety Report, ARN has several agreements with local and international support institutions. One of the conditions of the agreements is that the institutions involved do not provide assistance to the licensee in the same area. The international institutions were selected for their expertise in the field concerned, for being well established and recognized, and also for their vast experience in advising other Regulatory Bodies. Because of that, ARN considers that in such cases, a formal qualification of their capacities is not necessary. Among these institutions, it is possible to underline TUV (for inspections) and GRS (for evaluations) from Germany, Purdue University-USA (for the development and implementation of core codes calculation), Battelle National Lab-USA (technical services for CNA-II), as well as an agreement with the US-NRC on the use of specific codes.

Q-18	Country Finland	Article Article 8.1	Ref. in National Report

Question/ Comment	Do you have currently in your regulatory staff, or in a technical support organization (TSO) working for the regulatory body, an adequate number of technical experts (e.g., in the areas of reac-tor physics, thermo-hydraulics, and materials engineering) who can conduct an in-depth safety assessment of nuclear power plant, as would be needed for evaluation of operating events, large power upgrade, lifetime extension, or new build? Do these experts have tools and ability to conduct independent safety analysis, including both deterministic analysis and PRA? What is the number of such experts in various technical areas within the regulatory body and within the TSO? What is the outlook concerning the number of experts in a few years ahead?
Answer	In section 3.8.2 of the Argentinean National Report a detailed description on the ARN human resources is given. During the period covered by the report, the ARN has increased substantially its personnel, from 202 persons at the end of 2002 to 312 at the beginning of April 2007. The important increase in personnel, mainly young professionals, (in few cases retired personnel with an important experience) is mainly due to the need of covering positions which have to be filled as the generation of specialised professionals reach retirement age and also after the resignation of some personnel

due to an increasing offer of better-paid job opportunities from other industries. The increase in personnel also took place to cover temporary new tasks to be undertaken by the Special Processes Unit.
Most of the young professionals and technicians recently recruited are under training programs, courses and on the job training, collaborating on specialised technical tasks. Anyway, it is well known that the training of a huge increase in young professionals is a challenge for any institution. In the case of Argentina, the nuclear activities renaissance produced a positive impact in motivation that helps to face the situation.
As needed, ARN response capacity is improved through work agreements and contracts with specialist, and domestic and foreign organisations.Concerning the ARN human resources assigned to evaluation, inspections and audits related to NPPs, there are 55 persons. Between 1998 and 2006 the percentage distribution was as follows:·
- Inspections and evaluations in NPPs 25 %·
- Support activities directly related to safety. 40 %·
- Support activities indirectly related to safety. 35 %

These tasks include two resident inspectors in each NPP, and safety analysers, who perform supporting tasks to inspection activities and who study particular issues regarding the installation safety.
As of that date, the increase in the licensing tasks for CNA II, CNE life extension and CAREM licensing as well as the pre-feasibility studies for the Fourth NPP, have implied a temporary redistribution of the efforts dedicated to the operating NPPs, reducing somewhat indirect support activities but maintaining the man-hours directly applied to the inspection of the installations.
Concerning the human resources assigned to construction and commissioning control, ARN has formed an Ad Hoc organisation for the commissioning of CNA II, composed by 22 Professionals and 4 Technicians. The quantity, composition and qualification of the personnel of this organisation, may vary in the future according to the requirements of the commissioning activities.
Furthermore, four professionals have been appointed for the regulatory activities corresponding to the life extension of CNE, while for the commissioning of CAREM and for the preoperational studies of the fourth NPP, two professionals have been allotted. These professionals receive technical and logistic support from other areas of ARN.
All those professionals graduated in physics, chemistry and different engineering specialities, have been trained in ARN and abroad, becoming technical experts in areas of particular interest like reactor physics, thermo-hydraulics, instrumentation & control, materials, radiological protection, PSA, severe accidents, etc. This fact allows them being in conditions to evaluate, in some cases with TSO collaboration, the NPP operating conditions as well as events, modifications, upgrades, and to cover the different aspects emerging from a licensing process.
For that purpose the ARN experts have tools and abilities to conduct independent safety analysis, including both deterministic and probabilistic ones. ARN also contracts advice on specific topics, but retaining its responsibilities and functions. The personnel of ARN is capable of evaluating any assessments performed for the ARN by consultants.
As it can be seen in the point 3.8.4 of the fourth Argentine National Report, ARN has several agreements with local and international support institutions. One of the

conditions of the agreements is that the institutions involved do not provide assistance to the licensee in the same area.
Among these institutions, it is possible to underline TUV (for inspections) and the GRS (for evaluations) from Germany, Purdue University-USA (for the development and implementation of core codes calculation), Battelle National Lab-USA (technical services for CNA-II) USA, as well as an agreement with the US-NRC on the use of specific codes.
At last, and concerning the number of experts in ARN in a few years ahead, it is expected a favourable situation, given the expertise that young professionals recently recruited in different areas are getting.

Q-19	Country Finland	Article Article 8.1	Ref. in National Report

Question/ Comment: What kind of systematic training and development programmes you have for your new regulatory staff members? How do you ensure that they are ready to conduct their duties as regulatory staff members in the tasks assigned to them?

Answer: ARN undertakes as a permanent activity the training of specialists in radiation and nuclear safety, safeguards and physical protection, by means of training courses and the participation in local and international training activities. The training activity is carried out through the Training Department in charge of defining, organizing and coordinating courses, workshops and follow-up seminars.
Young professionals recruited attend the Postgraduate Courses in Radiation Protection and Nuclear Safety organized through an agreement with the University of Buenos Aires (UBA) and the Ministry of Health. The courses are sponsored by IAEA. This kind of courses had been taking place uninterruptedly on a yearly basis between 1980 and 2004.
Since 2005 the original course was divided into two. Since then, ARN and the University of Buenos Aires, and IAEA as sponsor, provide yearly two postgraduate courses on:·
- Radiation Protection and Safety of Radiation Sources. The course runs for a period of 25 weeks, on a daily seven-hour basis, and ·
- Nuclear Safety. The course runs for a period of 10 weeks, on a daily seven-hour basis.

Additionally, a course on radiation protection is provided to train technicians. This course runs for eight weeks on a daily seven-hour basis.
Afterwards, the young professionals and technicians recently recruited are on the job training, collaborating on specialised technical tasks. Anyway, it is well known that the training of a huge increase in young professionals is a challenge for any institution. In the case of Argentina, the nuclear energy renaissance produced a positive impact in motivation that helps to face the situation.
In addition to the general courses mentioned above, and the on-the-job training on topics of regulatory interest, different ARN groups provide specific courses as needed.
Besides, some young professionals are sent to attend specific courses in national or international institutions to improve their knowledge on special matters of ARN interest.
Joint works developed by ARN in collaboration with different TSO, are also used as an opportunity to incorporate knowledge by the young professionals.
The initial training period of a young professional, considering formal courses and

on the job training on topics of regulatory interest, takes not less than five years. ARN considers that only after fulfilling this period they could be allowed to conduct their duties in the tasks assigned to them.

Q-20	Country	Article	Ref. in National Report
	Germany	Article 8.1	page 30, 3.8.1

Question/ Comment

It is described that ARN has the capacity to evaluate independently the construction, commissioning and operation of NPPs. On the other hand ARN has a considerable loss of staff due to retirement and huge amount of young professionals with the need of education and training.
How is the regulatory capability maintained under these circumstances and in particular with the challenges of licensing of CNA II and CAREM and life extension of CNE?

Answer

In section 3.8.2 of the Argentinean National Report a detailed description on the ARN human resources is given.
During the period covered by the report, the ARN has increased substantially its personnel, from 202 persons at the end of 2002 to 312 at the beginning of April 2007.
The important increase in personnel, mainly young professionals, (in few cases retired personnel with an important experience) is mainly due to the need of covering positions which had to be filled after the generation of specialised professionals had reached reach retirement age and also after the resignations of some personnel due to an increasing offer of better-paid job opportunities from other industries. The increase in personnel also took place to cover temporary new tasks to be undertaken by the Special Processes Unit responsible for the licensing of CNA II and CAREM and life extension of CNE.
Most of the young professionals and technicians recently recruited are under training programs, courses, and on the job training, collaborating on specialised technical tasks. Anyway, it is well known that the training of a huge increase in young professionals is a challenge for any institution. In the case of Argentina, the nuclear energy renaissance produced a positive impact in motivation that helps to face the situation.
As of that date, the increase in the licensing tasks for CNA II, CNE life extension and CAREM licensing as well as the pre-feasibility studies for the Fourth NPP, have implied a temporary redistribution of the efforts dedicated to the operating NPPs, reducing somewhat indirect support activities but maintaining the man hours directly applied to the inspection of installations.
All the ARN professionals graduated in physics, chemistry and different engineering specialities, were trained in the institution and abroad, and becoming technical experts in areas of particular interest like reactor physics, thermo-hydraulics, instrumentation & control, materials, radiological protection, PSA, severe accidents, etc.This fact allows them being in conditions to evaluate, in few cases with TSO collaboration, the NPP operating conditions as well as events, modifications, upgrades, and to cover the different aspects emerging from a licensing process.
As needed, ARN response capacity is improved through work agreements and contracts with specialist, and domestic and foreign organisations, but retaining its responsibilities and functions. The personnel of ARN is capable of evaluating any assessments performed by consultants.
As it can be seen in the point 3.8.4 of the fourth Argentinean National Report, the

ARN has several agreements with local and international support institutions. One of the conditions of the agreements is that the institutions involved do not provide assistance to the Licensee in the same area.
The international institutions were selected by their expertise in the field concerned that are well established and recognized, and also by the vast experience in advising other Regulatory Bodies. Among these institutions, it is possible to underline TUV (for inspections) and the GRS (for evaluations) from Germany, Purdue University-USA (for the development and implementation of core codes calculation), Battelle National Lab-USA (technical services for CNA-II), as well as an agreement with the US-NRC on the use of specific codes.

Pak-5	Country Pakistan	Article Article 8.1	Ref. in National Report Section 3.8.2.3.1.5, Page 37

Question/ Comment: It is mentioned that self assessment was conducted by qualified personnel. Kindly elaborate what type of qualification was required for these personnel along with the methodology adopted for the self assessment?

Answer: ARN has two procedures related to self assessment of the management system. One of them is Quality Audits Management: P-U4-04, which describes the methodology, responsibilities and actions for managing self assessments.
The other one is Auditor's Qualification: P-U4-08, which establishes methods, criteria and tools for the qualification of the personnel performing self assessments, according to ISO 19011:2002.
In order to evaluate the personnel competences, the methods considered are:·
- Review of auditor records: academic degree, professional experience, etc·
- Training (including the corresponding exams) ·
- Observation during audits·
- Review after quality audits·
- Interviews·
- Feedback with the personnel

The competences to be evaluated are the following:
Personal competences:·
- Leadership·
- Planning of tasks and activities·
- Capability conflict resolutions and negotiations ·
- Commitment to objective achievement·
- Communication·
- Capability to work in group·
- Adaptability to changes – flexibility

Knowledge and Abilities about:·
- Quality management system documents ·
- Reference documents ·
- Organisational environment·
- Laws, standards and requirements applied to ARN·
- Principles, procedures and techniques of quality audits·
- Processes and products of ARN

Education and training: ·
- Graduate education·

- Professional experience related to quality management ·
- Experience in external audits - Quantity of hours·
- Experience in internal audits in ARN – Quantity of hours

Each competence is evaluated as 1, 2 or 3 and the maximum value is 51.
The qualification criteria establishes that:·
- up to 25 points: assistant auditor·
- from 26 to 40 points: auditor·
- from 41 to 51 points: lead auditor.

Q-21	Country United States of America	Article Article 8.1	Ref. in National Report p. 15, 32, 38

Question/ Comment	p. 15, para. 2.9 ; p. 32, para. 3.8.2.1.1; p. 38, para. 3.8.2.5 The report details how the ARN staff has increased from 202 to 312 persons from 2002 to April 2007. It also states that ARN is presently going through "a marked reduction in specialised personnel" due to retirements and better-paid job opportunities from other industries. Please describe measures you have taken to attract and retain skilled personnel. Also, what successes/challenges have been observed related to knowledge management initiatives such as taped interviews and the mapping process being used by ARN?
Answer	From the publication of the 4th Argentinean National Report (April 2007) up to now, the situation with regard to the reduction in specialised personnel has been getting better, and there has been no resignation of senior personnel in the period. Concerning the reduction of personnel due to retirement, ARN has achieved during 2007, that some skill retired personnel remain working in partial time dedication in the institution. In the case of young professionals the resignation was reduced to about 10% of the incoming personnel, generating a low impact in the response capacity of the organization because they were under training process. In Argentina, the nuclear energy renaissance produced a positive impact in motivation that helps to face the situation, helping the decision of the professionals to participate in attractive technological projects. Moreover, ARN in the context of a career development properly planned, is making a great effort to improve wages, a strong plan for training young personnel and provide an interesting perspective for a dynamic career in the institution. Concerning the successes/challenges, they have been observed related to Knowledge Management and up to now the results have been used to find possible projects between the experts and the new personnel and to strengthen the training programs in the organization. However, the process is just starting and is too soon to evaluate their results.

Q-22	Country Czech Republic	Article Article 10	Ref. in National Report

Question/ Comment	Has Argentina been planning to invite IRRS mission?
Answer	In several parts of this Report we have indicated that the regulatory body (ARN) is undergoing a complex process of restructuring parts of its functioning, including the implementation of a management system, and of renewal of its personnel. All of this takes place in the frame of the re-launching of the nuclear energy- and fuel cycle- activities in the country, fact which possesses challenges of its own. The Regulatory Body efforts are at present devoted to adequately attend these processes. The eventual consideration of peer review missions (the value of which

is not under dispute for our country) will occur in due course.

Q-23	Country Russian Federation	Article Article 10	Ref. in National Report Section 3.10

Question/ Comment	The Report mentions about the development of a package of indirect safety culture indicators. 1) Do you perform the comparison of safety culture performance at different units and do you assess the status of safety culture? 2) What specific indirect indicators of safety culture were adopted and how are they used to assess the status of safety culture?
Answer	1) ARN do not perform comparison of Safety Culture Performance Indicators due to the difference in the plants design. CNE is a CANDU type while CNA-I is a PHWR prototype. As a result, both organizations have different kinds of problems to face. 2) The set of safety performance indicators is used as a regulatory tool to provide an additional view of the NPP performance allowing to improve the ability to detect any eventual degradation on safety related areas. The regulatory body assesses the safety culture status using all the regulatory tools available such as inspections, audits, use of operative experience feedback and safety performance indicators results. The Safety performance indicators used as indirect indicators of safety culture are: Training:· - Number of hours devoted to training on safety-related issues. Feedback from Operational Experience: - Number of documented event analysis, findings or design modifications in similar power plants. Internal Control: - Number of internal technical audits. Compliance with Regulatory Authority standards: - Number of pending Regulatory Requirements.· - Number of violations to the Mandatory Documents. Abnormal Operation: - Number of relevant events. When direct or root causes are associated with human deficiencies· - Safety Systems actuation’s. Considering here only the human failures related ones.

Q-24	Country United States of America	Article Article 11.1	Ref. in National Report p. 54, para. 3.11.2.3

Question/ Comment	The report mentions that the schedule for completion of CNA II is already established and there is a short time to prepare. Please describe the major projected milestones and completion dates for the project and comment on successes/challenges in obtaining the necessary human resources to complete the work as planned.
Answer	See support document: CNA II - Projectec Millestones
Support Documents	» CNA II - Projected Millestones

Q-25	Country United States of America	Article Article 11.1	Ref. in National Report

Question/ Comment	What efforts has NASA made to recruit and train new personnel for construction of Atucha 2, Embalse life extension, and replacing an aging workforce at Atucha 1? Has an effective training organization been established as part of the effort?
Answer	See support document: Recruit & train new personnel
Support Documents	» Recruit & train new personnel

Q-26	Country United States of America	Article Article 11.1	Ref. in National Report

Question/ Comment	What is the status of the engineering staffing and organizational structure at Atucha 2? How is it ensured that it is adequate to support unit operation?
Answer	See support document: CNA II organization structure
Support Documents	» CNA II organization structure

Q-27	Country Croatia	Article Article 11.2	Ref. in National Report para 3.11.2.3

Question/ Comment	How the qualification and/or re-qualification programs are implementing and does NASA has sufficient means to verify quality of the plant operators?
Answer	The qualification and re-qualification programs of operators are clearly defined in their scope and content and annually carried out by NASA; all of them fulfill the Regulatory Body requirements. The training is performed by professionals from NASA and external institutions (Instituto Dan Beninson, Instituto Balseiro, National Atomic Energy Commission, etc.). Only after acquiring the skills required at each stage of training, the staff is able to be examined in order to obtain the qualification needed to perform a specific function. The Regulatory Body participates in the examinations of the operational personnel in order to grant the authorization to operate the plants. The qualification and re-qualification programs include:· - Lectures following a preset program where general topics related to the operation and external/internal events are reviewed with the objective of being analyzed and furthermore, to discuss the lesson learned.· - Practices in full scope simulator, to assess skills and adherence to operational procedures in abnormal conditions. These programs must be accepted by the Regulatory Body. The whole qualification and re-qualification process is included within the NASA Quality Program, and it is audited both internally by the NASA Quality Assurance Management and externally by the Regulatory Body. The training effectiveness has been demonstrated in the adequate operator’s response to face abnormal conditions occurred during the plant operation.

Q-28	Country Pakistan	Article Article 11.2	Ref. in National Report Article 11, Page 51

Question/ Comment	Are lessons learnt from the various events occurring at the plants, both in Argentina and internationally, included in the training program of plant personnel?
Answer	The lessons learned from the events occurred in the domestic plants as well as the international operational experience are included in the general staff training programme (annual safety course), and particularly in the training/retraining

programmes of both the managerial staff and the operational personnel, emphasizing the diffusion of the corrective actions arising from the events, to the plant personnel directly involved.
The qualification and re-qualification programs of operators are annually carried out, including:·
- Lectures following a preset program where general topics related to the operation and external/internal events are reviewed with the objective of being analyzed and furthermore, to discuss the lesson learned.·
- Practices in full scope simulator, to assess skills and adherence to operational procedures in abnormal conditions.

The quality of the operators training is verified through specific evaluations. The training effectiveness has been demonstrated in the adequate operator's response to face abnormal conditions occurred during the plant operation.

Q-29	Country Czech Republic	Article Article 12	Ref. in National Report
Question/ Comment	How are the results of human reliability analysis used in your regulatory inspections?		
Answer	As it is indicated in the fourth Argentinean Nuclear Safety Report section 3.12.1, the detection, prevention and correction of human errors are carried out through two clearly distinguished processes: the analysis of incidents and the global and systematic study of the installation safety. In the first case, the process acts on abnormal or unexpected events that happen in the installations (operating experience, OPEX). Such events are unique opportunities to detect and correct human errors, identifying the deficiencies regarding organisation, persons, materials and practices. In this case, the quality of the report on the occurred events, the rigour in the investigation of their root causes and the corrective actions carried out are the key elements. In the second case, the PSA technique is used, part of which consists of the identification of human actions and the evaluation of their relative importance on the installation's safety. The result of such evaluations enables the definition of those areas requiring improvements on both the operation procedures and the man-machine interface, as well as the identification of cases in which the operators' training and retraining should be intensified. Examples of the OPEX analysis are detailed in the Annex VIII of the report under the name "Examples of lesson learned and corrective actions resulting from national and international operative experience and events". Human corrective actions carried out at CNA I and CNE as a consequence of PSAs results are given in sections 3.12.1.1 and 3.12.1.2 of the report. ARN controls all the above mentioned activities, and during the inspection and evaluation processes of the NPP, pays special attention to find early signals and trends such as:· - Weaknesses in the safety policies, · - Weaknesses in accident analyses,· - Procedure violation,· - Operator errors,· Deficient training,· - Deficiencies in the use of operational experience,· - Weaknesses in emergency planning.		

Results got during the last years have shown a good performance, and the progress achieved in human factors, in the reported period, can be summarized as follows:·
- Better knowledge in applying the methodologies used to evaluate human factor contribution in the events and near misses events,·
- Human reliability improvements in CNA I and CNE reviewing normal operating procedures and emergency procedures taken into account in the PSAs results,·
- Fostering the training program addressing past wrong human behaviour and mistakes,·
- Widespread personnel re-training using international and national events.

Q-30	Country Czech Republic	Article Article 12	Ref. in National Report

Question/ Comment	The staffing of ARN is very good (more than 300 staff for 3 units). The number of staff has increased by 50 % during the last 3 years. Please describe in more details how this large staff increase in managed by training, courses, transfer of knowledge etc.?
Answer	As established in Act N° 24804/97, ARN is in charge of nuclear activity regulation and control, concerning radiological and nuclear safety, safeguards and physical protection. In addition, ARN also advises the National Executive Power on subjects of its competence. With that purpose ARN carries out regulatory inspections and assessments concerning Radiological Safety of Radioactive Installations (medical, research and industrial installations), transport, safeguards and security controls, licensing of new NPPs (CNA-II, CAREM and the Fourth NPP), as well as the CNE Life Extension . Besides ARN has specialized groups to attend the Institutional Affaires and non Proliferation, Legal Affairs, Human Resources Department and Scientific and Technical Support Department and Administrative Affaires and Resources. The human resources assigned to the NPPs regulatory activities comprise 55 persons, involved in the control of nuclear installations in operation, and 33 persons assigned to NPPs construction and commissioning control. It means that less than a third of the ARN personnel are involved in the regulatory control of nuclear installations (NPPs, research reactors and other nuclear installations in operation, construction or design stage). ARN, in order to comply with its responsibilities, undertakes as a permanent activity the training of specialists in radiation and nuclear safety, safeguards and physical protection, by means of training courses and the participation in local and international training activities. The training activities are carried out through the Training Department in charge of defining, organizing and coordinating courses, workshops and follow-up seminars. Young professionals recently recruited receive the Postgraduate Courses in Radiation Protection and Nuclear Safety organized in accordance with the provisions of an agreement with the University of Buenos Aires (UBA) and the Ministry of Health under the auspices of the IAEA. This kind of courses had been uninterruptedly taken place on a yearly basis between 1980 and 2004. In 2005 the original course was divided into two. Since then, the ARN and the University of Buenos Aires, under IAEA auspices provide yearly two postgraduate courses on:· - Radiation Protection and Safety of Radiation Sources". The course runs for a

period of 25 weeks, on a daily seven-hour basis, and ·
- Nuclear Safety". The course runs for a period of 10 weeks, on a daily seven-hour basis.

Additionally, a course in radiation protection is provided to train technicians. This course runs for eight weeks on a daily seven-hour basis.
After this basic apprenticeship, the young professionals and technicians recently recruited are on-the-job training, collaborating on specialised technical tasks.
Anyway, it is well known that the training of a huge increase in young professionals is a challenge for any institution. In case of Argentina, the nuclear energy renaissance produced a positive impact in motivation that helps to face the situation.
In addition to the general courses above mentioned, and on-the-job training on topics of regulatory interest, different ARN groups provide specific courses, as needed.
Besides, some young professionals are sent to attend specific courses in national or international institutions to improve their knowledge on special matters of ARN interest.
Joint works developed by ARN in collaboration with different TSO, are also used as an opportunity to incorporate knowledge by young professionals.

Q-31	Country United States of America	Article Article 12	Ref. in National Report
Question/ Comment	Do the nuclear plants have a human performance program that includes the use of error-reduction tools and methods that focus on preventing errors and thus minimize events?		
Answer	The NPPs work continuously on the detection, prevention and correction of human errors through the following processes: · - event analysis, · - root cause identification and corrective-actions follow up, · - systematic installation safety study. The Human Errors Reduction Programme includes the use of the following tools for reducing human errors: · - Pre-review of tasks · - Pre-work meeting· - Post-work revision and analysis · - Witnessing of tasks · - Self-checking · - Three-way communication · - Peer Review · - Inclusion of operating experience in the working plans		

Q-32	Country Canada	Article Article 13	Ref. in National Report 3.13.2, page 60, paras. 9 to 13
Question/ Comment	The report refers to the quality assurance program of the licensee in which is described the organization of the licensee for the licensed facility. Please describe how ARN assures that the licensee's organization continues to have adequate qualified staff to operate the facility safely, and how ARN assures that licensee organizational changes are adequately controlled and will not adversely affect the continued safe operation of the facility.		

Answer	The Argentinean Standard AR-3-7-1 “Schedule of the documentation to submit prior to the commercial operation of a nuclear power reactor”, indicates (point 14–5) that the “Licensee must submit to ARN at the beginning of the construction, the project of the Operational Organization Chart and the staff training program”. In the Organization Chart the Specified Functions should be clearly identified. Such Specified Functions are a set of necessary tasks for the operation of a NPP, whose performance involves the need of making decisions that could affect the safety of the facility. All the specified functions in the Organization Chart must be permanently covered. In turn, the AR standard states that to perform a Specified Function in a NPP, the staff must have the corresponding Individual Licence and the Specific Authorization, both granted by ARN. Once ARN approves the Organization Chart, it becomes part of the mandatory documentation of the installation. The Licensee may propose modifications to the Organization Chart, but they must be approved by ARN prior to their implementation. The Specific Authorizations granted to the operating personnel by ARN have a validity of no more than two years, and for their renewal the ARN requires to comply with the annual retraining program which will depend on the installation, and on the function. In addition a psychophysical aptitude issued by competent medical authority is also required. The ARN participates in the examinations for granting Individual Licenses and Specific Authorizations, and audits the process of training and retraining of the operation personnel.

Q-33	Country Germany	Article Article 13	Ref. in National Report page 60

Question/ Comment	How is it ensured that contractors and subcontractors for supplies and services fulfil QM-requirements?
Answer	Quality requirements are clearly specified in the respective contracts. Suppliers are evaluated by the Licensee (NASA) following a specific procedure. The task is performed by an evaluation team, integrated by an auditor, members of the technical departments and a procurement group. First of all, the supplier background is assessed taking into account special certifications/qualifications (ISO Standards 9000, ISO Standards14000, ASME, hazardous waste operator license, etc). Prior to the contract awarding, when deemed necessary, contractors are judged in order to verify their capability to meet the specified requirements. During the manufacturing process, checkpoints for inspections are established. Also specific audits are made. When the contractor needs to carry out part of its service in a NPP, additional precautions are taken. Before starting to work, the contractor staff receives training on main controls and procedures related to the task. Anyway, any activity performed by contractors is monitored by qualified personnel from NASA. Besides, ARN audits the QA programs of the licensee headquarter and the nuclear installations following the corresponding procedure. The audits are performed by ARN itself or by third parties. The quality system and programs must meet the regulatory standard AR 3.6.1 “Quality System” (consistent with IAEA Code 50-C-Q), the corresponding License and any other requirement for such subject issued by the ARN.

Q-34	Country Canada	Article Article 14.1	Ref. in National Report 3.14.3.1.2, page 69 - 70

Question/ Comment	The report discusses progress being made regarding the Severe Accident Management (SAM) Program. Please elaborate on the strategy of the program for CNE and when and how this program is expected to be implemented. Please describe any design changes being considered as part of the implementation of the SAM program.
Answer	The CNE Severe Accidents Management Program is based on the specific CANDU Owner Group (COG) guides, developed for CANDU reactors operating in Canada. The programme consists on: · - The understanding of the technical bases for the management of severe accidents for CANDU reactors.· - The study of the severe accidents progression phenomenology in CANDU reactors. · - The development of guidelines for the initial response of operators in Control Rooms. · - The development and formation of a support group to assist control room staff during the severe accident evolution. · - The development of flow diagrams for diagnosis. · - The development of operating procedures for severe accidents, including diagnosis, follow-up and long-term monitoring. At present, items 1 and 2 of the previous programme are being developed. In parallel, for the implementation of items 3, 5 and 6, contacts with the designer to obtain technical assistance, have been established. This programme will be concluded in about three years, according to NASA estimation.

Q-35	Country Czech Republic	Article Article 14.1	Ref. in National Report

Question/ Comment	Construction permit for CNA 2 was issued in mid on 80ties of the basis of PSAR. During the next 20 years many changes/modifications etc. were carried out for safety enhancement. How often has been PSAR modified (revised) and what is the process of its review and assessment by ARN?
Answer	The Construction License was issued by ARN on 14th July 1981; in the regulatory frame described in Chapter 3.7 of the present Report, once all the conditions established in the current standards were met. One of the conditions is an adequate PSAR. CNA-II PSAR has been prepared following the US Regulatory Guide 1.70, Revision 3, November 1978, and basically fulfils the requirement on SAR´s laid down in the IAEA Safety Guide Nº 50-SG-G2. At the beginning the construction rhythm was slow, and then it was delayed for about one decade up to 2006. During the period of delay, the organisation responsible for the construction has worked on several activities related to maintain the already installed equipments and those stored, as well as in the documentation related to detail engineering and the update of the PSAR. ARN carried out a new evaluation of the PSAR during 2006, taking into account the international state of the art. As a result, ARN established as priority a set of critical technical issues to be solved by the Licensee, that are mentioned below.·

- Update of the Quality System,·
- Qualification of the Design Authority,·
- Review of Licensing Basic Criteria,·
- Review of Safety Issues.

In that sense the initial action taken by ARN was to update the process required to qualify the Design Authority to be proposed by NASA in the framework of the requisites indicated in Guides IAEA NS-R-1 (design), IAEA NS-R-2 (operation) and INSAG-19.
The information given at present by the Licensee for each critical technical issue is under evaluation process by the ARN. The information under evaluation concerning each critical issue is shown in subsections 3.18.3.3.2.1 to 3.18.3.3.2.4 of the Argentinean Fourth National Report.

Q-36	Country Czech Republic	Article Article 14.1	Ref. in National Report
Question/ Comment	Does ARN finance the research of safety or it is the role of CNEA?		
Answer	Act No 24804/97 –National Law of Nuclear Activity- states that the National Atomic Energy Commission establishes by Decree 10936 of May 31, 1950 ..... will continue to operate as a self-sufficient entity in the jurisdiction of the Nation's Presidency and will be responsible for, among other functions,: (only the functions relevant to this answer are transcripted):· - Promoting training of highly specialised human resources, scientific and technological developments in the nuclear field, and including the promotion and development programmes for technological innovations.· - Developing materials and manufacturing processes for fuel elements used in advanced cycles.· - Developing basic and applied research programmes in basic science of nuclear technology.· - Establishing cooperation programmes, through the Ministry of Foreign Affairs, International Trade and Worship, with third countries for the above mentioned basic and applied research programmes, and for fusion technology research and development programmes.· - Fostering and developing other studies and scientific applications for nuclear transmutations and reactions.· - Continuously updating the technical information on nuclear power plants and their various stages, and ensuring its optimum use.· - Signing research agreements with nuclear power plant operators. Concerning the Regulatory Body, in order to guarantee a proper control level, the legal competence is complemented with a suitable technical capability. Namely, the ARN has the capacity to independently evaluate the construction, commissioning, operation and decommissioning of NPPs. For this reason, since the beginning of the regulatory activities in the country, it was considered imperative to have qualified personnel with adequate knowledge and experience in order to preserve the ARN's own independent criterion regarding every aspect of radiological and nuclear safety. With that purpose, the Scientific and Technical Support Division gives specialised technical support to regulatory inspections and evaluations and carries out		

technical scientific developments on subjects related to radiological and nuclear safety.

Q-37	Country Finland	Article Article 14.1	Ref. in National Report

Question/ Comment	Do you have access to the results of large nuclear safety related experimental test programmes to study physical phenomena and to validate analysis models used in safety analysis? Does this access adequately cover your needs for experimental data in different areas, taking into account the current state of your nu-clear programme?
Answer	Experimental tests were performed by the original designer during the design phase in order to analyse Atucha 2 (CNA-II) specific physical phenomena. Additionally NASA took and is taking the full benefit from the data obtained in large and relevant nuclear safety test facilities. Those benefits are either direct, in the sense that data from these facilities are used for addressing specific phenomenological issues relevant to the CNA-II transients, or indirect because computational tools and procedures qualified against these facilities are being adopted for the safety evaluation of CNA-II. In this connection the enormous relevance of the experimental data base obtained in the period 1980 -2000 in many (at that time) industrialized countries is fully recognized. The access to the data base is also through international research groups cooperating with NASA (e.g. University of Pisa in Italy, AECL in Canada, etc.). The available access adequately covers the needs and is related, among other things, to UPTF and LOFT data, as well as to recent findings of international cooperative programmes (including OECD/CSNI Projects).

Q-38	Country Germany	Article Article 14.1	Ref. in National Report 3.14.3.2.2

Question/ Comment	Under 3.14.3.2.2 the regulatory approval of the extended period between outage times – from 12 to 18 months - for CNE is addressed. Was the decision based on PSA alone or were other insights used as well. If so, please indicate the other insights and the way in which they were combined with the PSA insights in the regulatory decision.
Answer	Indeed, there were other important aspects considered in addition to those directly related to periodic testing carried out to the CNE safety systems. In this case, the quantification via the PSA analysis is direct, considering, i.e., the variation in the parameter -time-between tests- used in each component included in the model. Among other important aspects taken into account, it could be mentioned the Preventive Maintenance Programme and the In Service Inspection Programme. Since 1983, and for about the first 10 years of operation, CNE had programmed outages every 12 months, over which there is a registered operating experience. Then, since the early nineties and for about 10 years there were operation periods from 15 to more than 18 months, authorized by ARN case by case. This enabled to register operating experience regarding preventive maintenance at those periods, that was used additionally to the models included in the PSA. The information collected on test performed at 12, 15 and 18 months allowed to infer that the extension of the period between preventive maintenances did not have a significant impact on safety. Another important aspect was the consideration of the ISI Programme, which includes relevant components and systems like pressure tubes, feeders, steam generators, moderator heat exchangers, and so on.

	The ISI program embraces various programmed outages and the corresponding tasks could be programmed in such a way to accomplish all the tasks in fewer programmed outages. Therefore, the modification of period, between programmed outages from 12 to 18 months in CNE allows to comply with the applicable standards. Additionally, the ISI practices in CNE were improved along the time, exceeding the minimum requirements set in force in the applicable standards. For example, SG's inspections are made according to a procedure that includes at least 100% of two of the four SGs in each outage. This demand far exceeded the applicable Canadian criterion.		
Q-39	Country Romania	Article Article 14.1	Ref. in National Report
Question/ Comment	Could you please provide more information on the current status of the Severe Accident Management Program for CNE?		
Answer	The CNE Severe Accidents Management Programme is based on the specific CANDU Owner Group (COG) guides, developed for CANDU reactors. The programme consists on: · - The understanding of the technical bases for the management of severe accidents for CANDU reactors.· - The study of the severe accidents progression phenomenology in CANDU reactors. · - The development of guidelines for the initial response of operators in Control Rooms. · - The development and formation of a support group to assist control room staff during the severe accident evolution. · - The development of flow diagrams for diagnosis. · - The development of operating procedures for severe accidents, including diagnosis, follow-up and long-term monitoring. At present, items 1 and 2 of the previous programme are running. In parallel, for the implementation of items 3, 5 and 6, contacts with the designer to obtain technical assistance, are established. This programme will be concluded in about three years, according to NASA estimation.		
Q-40	Country United States of America	Article Article 14.1	Ref. in National Report p. 5, para. 2.1; p. 69, para. 3.14.3.1.2
Question/ Comment	The report describes the development of a Severe Accident Management Program for the CNA I and CNE plants. Are there plans to develop such a program and apply insights gained from implementation during the completion of the CNA II plant?		
Answer	The Severe Accident Management Programme for ATUCHA II is planned to begin in Parallel with the PSA level 2. At present GRS (Germany) is developing a MELCOR Model for ATUCHA II to be used in the analysis of the severe accident progression. CNEA participation in the project is described in item 3.14.3.1.2 of the Report.		
Q-41	Country Canada	Article Article 14.2	Ref. in National Report Section 3.14.2 and

Question/ Comment	Sections 3.14.2 and 3.14.3.1.3 of the report discuss the ageing management program for CNE. Please note that testing of relief valves in some Canadian nuclear power plants was shown to be an area that warrants close monitoring to ensure the continued availability of relief capability to meet design requirements. Please describe the relief valve testing program that has been undertaken at CNE to check for ageing effects of relief valves, and please elaborate on the experience to date and any corrective actions, if necessary, that have been taken to maintain acceptable relief capability.
Answer	The liquid relief valves operability and availability are verified as follows: - Routinely tests to verify their operability. In those tests the logic of actuation and the opening/closing time are verified. - A preventive maintenance programme in which diaphragms of the actuators and the elastomer of the different components belonging to air supply pneumatic circuit are periodically replaced. - In the last years two primary heat transport system liquid relief valve opening occurred. It is important to mention that this is a recurrent event in CANDU 6 plants. Details of both events, lessons learned and corrective actions are given in Annex VIII, sections VIII.2.5 and VIII.2.6.

Q-42	Country	Article	Ref. in National Report
	Finland	Article 14.2	

Question/ Comment	What kind of systematic aging review programmes are ongoing (by power companies or regulators)?
Answer	Quarterly reports of the Ageing Management Program of both CNA I and CNE NPPs are sent by NASA to the Regulatory Body. They include a detailed evaluation of the results of the programs application, such as specific task carried out, comment and conclusions. NASA has a general QA program which includes audits to all areas in particular to Ageing Management Program. The first audit took place in 2001 when the Program effectively started. From this date has been several follow ups. The Regulatory Body reviews and assess the results of each program through the reports reviews and assessments, as well as inspections and audits in order to verify whether it is being effectively managed considering its objectives.

Q-43	Country	Article	Ref. in National Report
	Germany	Article 14.2	page 113, 3.19.4.2.2.

Question/ Comment	It is described, that the steam generator of CNE is highly degraded and that activities are ongoing to assess the structural integrity of the steam generator. 1. Has there been performed an exchange of experience in that issue with other CANDU operators/authorities? 2. Are there safety related criteria in place to shutdown the plant for a SG exchange? Has a break of multiple steam generator tubes been considered in the safety analyses?
Answer	1. Operational experience has been exchanged with Bruce NPP (Canada), which had in 2003 a very similar problem in their SGs. The most important corrective action implemented in CNE, endorsed by the SGs designer/constructor (Babcock and Wilcox - B&W), was the installation of antivibration bars in the U-Bend zone, similar to those installed in Bruce. Operational experience has also been exchanged within the CANDU Owner Group.

2. NASA carried out a SGs assessment with the advice of AECL and B&W. Studies were conducted of structural integrity, seismic evaluations, and behaviour and integrity analysis of the SGs tubes in case of a severe depressurization. The results show that the SGs can continue its operation in a safe condition. The behaviour of the SGs will be strictly monitored until the implementation of the life extension programme scheduled for 2011, where the 4 SGs will be replaced. Meanwhile, the Regulatory Body conducts a strict monitoring of the SGs behaviour.

3. The event of multiple tubes break is included in the Final Safety Report. In addition, in CNE-PSA the scenarios of single and multiple tubes break have been modelled as an interface LOCA group.

Q-44	Country India	Article Article 14.2	Ref. in National Report page 73, section 3.14.3.2.2

Question/ Comment: The CDF for low power state of the CNE reactor has been evaluated to be 35% of the full power CDF.
Please elaborate the scope of low power PSA and the major accident sequences considered and their contribution to CDF.

Answer: Scope of Low Power PSA:

The Low Power PSA performed for CNE includes all possible shutdown states, shutdown and start up plant transients, and also plant in operation below 60% FP. It is a Level 1 PSA, considering internal events that may lead to core damage.
Six Plant Operational States (POS) were defined:
1. Start up and low power (below 60% FP) operation.
2. Hot shutdown.
3. Cold shutdown, Heat Transport System (HTS) closed, Service Water System (SWS) available.
4. Cold shutdown, HTS closed, SWS unavailable.
5. Cold outage, HTS open for maintenance tasks, SWS available.
6. Heat up and cool down transients, with pressurized HTS.

Major contributions to CDF:

The results show a dominating contribution of POS 5. Its contribution to total CDF value is 74 % considering recovery human actions. POS 4 and POS 6 contribute with 12 and 10 % respectively.
Besides, dominating event sequences, most of them identified for POS 5, can be described as follows:
- The first event sequence in the ranking refers to Loss of Class IV Power Supply (loss of offsite power), during POS 5, followed by diesel generators failure to startup (due to unavailability of the main battery that supplies to startup panel), combined with human failure to recover diesel generators in 24 hours.
This event sequence contribution is 7,9 x 10-7/y, which means 9,3 % of the total CDF determined in Low Power PSA.
- The second sequence starts with Loss of Class IV Power Supply in POS 5, followed by unavailability of all the three pumps of Low Pressure Service Water System (SWS), due to failure of a pressure switch in lubrication oil supply, combined with human failure to recover the supply bypassing the pressure switch.

Loss of SWS means loss of Shutdown Cooling System (SCS) heat exchangers. This event sequence contribution is 7,4x10-7/y, which means 8,75 % of Low Power PSA CDF.
- The third event sequence represents Loss of SCS during POS 5. In this state, the strategy to cope with the scenario is to implement another heat sink. The accidental sequence considers the operator failure to diagnose the situation and to choose the correct strategy. This event sequence contribution is 6,5 x 10-7/y, which means 7,7 % of the total.
- The fourth event sequence considers the occurrence of a Small LOCA in POS 6, combined with operator failure to diagnose the scenario and implement Low Pressure Emergency Cooling System. This event sequence contribution is 5,8 x 10-7/y, which means 6,8 % of the total.
- The fifth event sequence refers to Loss of SWS during POS 5. In this state, the correct strategy consists in injecting Medium Pressure Emergency Core Cooling System (ECCS-MP). In the accidental sequence the operator fails to follow correctly the steps to inject ECCS-MP manually. This event sequence contribution is 2,5 x 10-7/y, which means 3,0 % of the total.
- The sixth event sequence represents Loss of Class IV in POS 5, combined with automatic startup of a SDC system pump, followed by operator failure to establish long term heat sink, starting manually one of the SDC system pumps, or , in order to implement moderator as a heat sink, starting a pony motor pump of moderator circuit. This event sequence contribution is 2,3 x 10-7/y, which means 2,7 % of the total.
- The seventh event sequence is similar to the fifth one. In this case, the operator fails to supply water from Emergency Water Supply System (EWS) to ECCS-MP, after ECCS-MP reservoir water depletion. This event sequence contribution is 2,1 x 10-7/y, which means 2,5 % of the total.

Q-45	Country India	Article Article 14.2	Ref. in National Report page 74, section 3.14.3.2.2

Question/ Comment

We understand that there is only one HX in the ECCS system and it has been considered as non-repairable equipment. Using PSA technique, a bi-monthly surveillance has been arrived at for this equipment to meet the reliability target. Please indicate the failure modes considered in the PSA for the HX to arrive at the bi-monthly surveillance frequency.

Answer

In the last few years a bivalve molluscan “mejillon dorado” has grown in Embalse lake affecting the CNE service water, that provides cooling to most of the plant systems. Its impact was studied within the PSA frame considering the heat exchangers in two groups, as follows:
1. Heat exchangers in operation mode
2. Heat exchangers in stand by mode

1. The effect of clogging for HXs in operation mode is monitored on line by measuring the fluid temperature. The effect on the PSA model is that it leads to larger maintenance time or more plant outages.
The incidence of the increase in maintenance time and the increase of the generic transient initiating event frequency, is of no significance regarding the core damage frequency (CDF).

2. For HXs in stand-by mode, the main contributors came from Emergency Core

Cooling System (ECCS) and Shutdown Cooling System (SDCS) heat exchangers. For PSA purposes, ECCS HX was initially considered as a non repairable component It means that the failure appears during the mission time, once the initiating event (LOCA) has occurred. Initially there were no mechanisms identified which were capable of HX clogging while it was in standby mode. As was said before, this mechanism appeared later, once the “mejillon dorado” began to develop in the lake.
This new mechanism indicates that a different failure mode has to be included in PSA model namely one which can actuate while the component is in stand by.
There was originally a complete HXs inspection at the plant every 6 years. Since 2004, due to the bivalves presence, a secondary side flow test was included.
The impact of the period between tests on CDF was analyzed taking a test period from six years to 1 month (6 years, 4 years, 18 months, 6 months and 1month). Six years was the original test period, 18 months is the time between programmed outages. From the results it can be seen that when the test interval is around one month the CDF is almost the same as that calculated with only mission time (24 hours) failure. The plant decided to establish a test interval of two months.
Shutdown cooling HXs have a permanent circulation of 40% flow even when they are not in operation (the valves regulate at 70% when the system is in operation). For these HXs the monitoring is not the temperature measurement but the flow through it in order to detect low flow.

Q-46	Country India	Article Article 14.2	Ref. in National Report page 72, section 3.14.3.1.4.2

Question/ Comment

It is understood that the annulus gas system has been isolated from the channel V08 in CNE reactor, thus solving the problem of humidity in the annulus gas system.
Since the channel is remaining in operation, please elaborate on the safety assessments carried out and precautions being taken for safety of this particular channel against thermal shock due to possible contact with cold light water and any other issue with the coolant channels including hydrogen pick up through the annulus.

Answer

The V08 fuel channel is located in the last position of the 8th column. This means that V08 is the last channel in the gas circulation direction before being discharged to the atmosphere. Therefore, considering that the AGS is mainly operated in the continuous purged mode, the humidity from channel V08 is directly discharged to the reactor building environment, thus preventing humidity from returning to the other 9 channels. This means that humidity could only affect channel V08.
As was mentioned before, in the PT/CT gap, only humidity is present. The entrance of liquid water is effectively prevented. So this situation is far from reaching the necessary conditions to produce a thermal shock.
The involved channels are continuously surveyed through dew point temperature measurements and determination of water characteristics, in order to determine if the humidity is originated by heavy or light water. Besides, for each scheduled outage, an ISI to the involved channels is programmed.
The monitoring system controls: ·
- Channel humidity,·
- CO2 pressure, ·
- CO2 flow, ·
- Pressure of the End Shield Cooling System cover gas,·

- Temperature of the dew point.

The system has humidity, flow, pressure and temperature alarms in Control Room. The humidity generates an oxide film layer on the PT external surface, conforming a barrier to the hydrogen pick-up.

Q-47	Country Russian Federation	Article Article 14.2	Ref. in National Report

Question/ Comment: 1) Would you please give examples of the actual use of ageing management program? 2) In what way do you assure the prevention of further component ageing?

Answer: Some examples of ageing assessment in CNA I and CNE are the following:¡P

CNA I:
The selected components to be followed up into the Ageing Management Program are valves, pipelines, pumps and heat exchangers belonging to the primary system, moderator system, feed and bleed system, shutdown systems, emergency core cooling system, reactor system, I&C and electric systems. The major ageing analysis for Atucha I was included within the backfitting program and the main issues were fuel channels, control rods, RPV, control rods tube guides, I & C, high pressure injection system and residual heat removal system.
Ageing of specific components like RPV, fuel channels, thermal isolation between fuel channel and moderator tank, tube guide control rods and control rods are described and analysed in previous national reports. Additionally, during each planned outage 100% of the steam generators tubes are inspected. ¡P
CNE:
According were mentionated it was decided to undertake a Plant Life Management (PLIM) and a Plant Life Extension (PLEX) program in order to achieve a long term operation, and to maintain a high level of safety and plant performance. The first phase of the PLEX program has to identify the necessary modifications and updates of the plant in order to ensure a safe operation for an extended period of 25 ¡V 30 years.
The PLEX phase includes an ageing assessment as a part of an integrated strategy to assess the active and passive ageing degradation of the CNE components, and then to assess the prognosis for service life extension. Also maintenance and inspection requirements could be determined as well as the necessary upgrades or replacement needed to achieve the life extension in safe condition.
The Ageing Assessment activities that have been carried out are: Screening and prioritization of SSCs; Ageing Assessment pilot studies and some modifications or corrective actions are in execution or have already been performed.
The selected components to be followed up within the Ageing Management Program are valves, pipelines, pumps and heat exchangers belonging to the primary system, pressure and inventory control system, shutdown systems, reactor system, emergency core cooling system, Emergency water supply, containment building (concrete), feedwater system and dousing system.¡P
Pressure tubes: PTs present progressive degradation due mainly to the following mechanisms: hydrogen uptake, blister formation, rolled joint cracked and bend/deformation. The Regulatory Body required to constrain plant operation to following the following items:
ƒnTo demonstrate that there are not pressure tubes containing hydrogen /deuterium

over the blister formation threshold.
ƒnTo present a new garter spring program for the pressure tubes not yet visited.
The above mentioned requirement was fulfilled by performing scrapping.
Inspections were performed according to CAN/CSA ¡V N 285.4 ¡V 94 Canadian Standard.
Additionally, it was carried out a nozzle inspection to the shutdown system #2 to follow-up the existing gap among the 6 nozzles and the calandria tubes in order to verify any potential freeting by contact getting good results.¡P
Feeders: The inspection was performed according to what it had been established by the In-service Inspection program during scheduled outages. It was determined that all feeders would have a lifetime higher than 25 years. The main contributors to such performance is the chemical control to the primary heavy water.¡P
Steam Generators: During each planned outage 100% of the tubes that belong to two steam generators are inspected. During last years it has been detected flow assisted corrosion on the tube support plate (TSP) in the U-bend zone as a consequence of the feed water flow. During 2004 planned outage three special supports were installed instead of the scallop bars to minimize vibrations and freeting.¡P
Moderator Heat Exchangers: A special design modification was carry out in the moderators heat exchangers consisting on helicoidal tubes separators to avoiding vibrations reducing freeting and as a consequence the number of tubes to be plugged. Mercury wetted relays: An increase in the relay failures number was detected and it was decided to analyze the causes indicating that mercury has been suffering a degradation process (ageing) that provokes the sticking of the mercury with the contacts. It means that contacts will remain closed. At that time, all Embalse nuclear power plant safety systems had this kind of relays. To reduce the relay failures rates, the Responsible Organization replaced the mercury-wetted relays by mercury wetted relays doped with tin.

Q-48	Country Ukraine	Article Article 14.2	Ref. in National Report Chapter 3, page 67
Question/ Comment	Do the “Ageing control programs” envisage at NPP to use appropriate methodologies of equipment reliability analysis, in particular, analysis of reliability changes with time? If “Yes” to what equipment it is applied to (heat-mechanical, electrical, instrumentation & control systems, design constructions etc.)?		
Answer	The NPPs carry out an annual safety and safety-related systems availability quantification, in order to evaluate their performance in that period, using the data obtained from both the periodic tests, and the preventive and corrective maintenance activities. The components involved are those belonging to First Shutdown System, Second Shutdown System, Emergency Core Cooling System, Containment System, emergency diesel generators, Emergency Water Supply (CNE), Emergency Power Supply (CNE) , Secondary Heat Sink System (CNA-I), and so on. These plant historical data are used in PSA as well as data available for other equipment modeled. However there are not reliability parameters changes with time identified or analyzed yet.		

Q-49	Country Lithuania	Article Article 15	Ref. in National Report Section 15.1
Question/ Comment	Collective effective dose in CNA I during 2006 shown in Table 3.15.13 (9.3 Man Sv) looks very high as compared to the collective doses received in CNE. What is		

the reason of such high collective dose?

Answer

During 2006, CNA-I NPP was under a programmed outage with many radiological important maintenance tasks
The collective dose in the programmed outage of CNA-I was almost 80% of the total annual collective dose. The main contributor tasks were in Moderator heat exchanger (50%) and in Reactor internal (26%) of the outage collective dose.
It is important to see that CNA-I collective dose in 2007 was reduced to 1.8 Man Sv because there was not programmed outage.
Concerning CNE NPP it was running without a programmed outage during 2006.
It was the main reason of the difference in the collective doses between CNA-I and CNE NPPs during 2006.

Q-50	Country	Article	Ref. in National Report
	Singapore	Article 16.2	Pg 85, Para 3.16.2

Question/ Comment

The report stated that the ARN- Nuclear Emergency Response System (NERS) is used to respond in cases of nuclear emergencies and interact with the national, state and local response organizations. Could Argentina share the details of the Emergency Response System?

Answer

As stated in the fourth Argentine Nuclear Safety Report, in order to accomplish with what is set in Act 24804 and Decree 1390, the ARN- Nuclear Emergency Response System (NERS) was created by ARN Resolution Nº 25/99 in November 1999.
The NERS is the organizational scheme that the ARN uses to respond in cases of nuclear emergencies and interact with the national, state and local response organizations (National Emergency Cabinet, States Civil Defence and Local Civil Defence of every Municipality within 10 km around each NPP) to manage effectively nuclear emergencies in preparedness, intervention and recovery stages.
The ARN, in addition to its main role as head at the Emergency Control Centre for off-site consequences, performs the nuclear and radiological assessments, the radiological protection of intervening teams and the environmental monitoring.
Representatives of all the intervening organisations (as established in the Emergency Plan) integrate the Response Command and ARN coordinates the response teams belonging to civil organisations, (Fire Fighter Brigades, Civil Defence, etc) security forces (Police, Gendarmerie and Coast Guard) and military institutions (Army, Navy and Air Force). These organisations apply the precautionary measures with their response teams. All these groups have procedures to deal with nuclear emergencies, under ARN coordination.
In order to conduct the actions within the 10 km established as the “precautionary action zone”, a Nuclear Emergency Operative Chief (NEOC) from ARN is designated and integrated to the Local Emergency Operative Centre (LEOC). The ARN-NEOC shall be the officer to whom civil organizations and security forces report to.
An ARN Emergency Control Centre has been set up at ARN’s Headquarters in order to co-ordinate the NERS. The strategy chosen by ARN to response to nuclear emergencies consists on establishing expert teams and a decision making team at the Headquarters, with the responsibility of conducting the whole emergency.
This centre also operates in the “Convention on Early Notification of a Nuclear Accident” and in the “Convention on Assistance in case of a Nuclear Accident or Radiological Emergencies”, as the National Warning Point according to IAEA - Emergency Notification Assistance Technical Operations Manual (ENATOM).

The local, provincial and national authorities should develop nuclear contingency plans following the criteria established by ARN. Then, contingency plans drawn up by these authorities must be approved by ARN.
The Operation License for NPPs in Argentina establishes that they shall have an emergency plan approved by ARN and that it must be verified at least once a year. This plan must include the on- and off-site aspects of a nuclear emergency. Keeping in mind this annual obligation, mechanisms for ensuring members of the public participation in the exercises are in place.
In such exercises, the operational capability of ARN in the management of the implementation of actions to protect members of the public in the surroundings of the NPPs from the radiological consequences is also checked.
The population's preparation is a key task to arrive to the objective of minimizing the consequences of a nuclear incident. An important part in the preparation is the diffusion of information in the schools so the students know what they should do in case of they receive an alert form the nuclear emergency command. The presentations at schools are divided taking into account the differences in the levels of understanding, considering the ages of students. These tasks are carried out once a year during the exercise preparation and it has as main objective to diffuse the primordial protection actions. Similarly diffusion activities on protection actions were carried out with other sectors of the general public, with talk shows, discussions and explanation of doubts generated during the open meetings invited by the local civil defence, the nuclear power plant and the ARN.

Q-51	Country Germany	Article Article 17.3	Ref. in National Report page 94, 3.17.5.2

Question/ Comment: A site re-evaluation of the CNE-plant is ongoing considering also earthquakes as external hazard.
Does the re-evaluation include the loss of ultimate heat sink due to a breach of the dyke of the Tecero Reservoir in case of an earthquake?

Answer: During CNE commissioning a seismic reevaluation took place and safety significant systems, structures and components were reviewed for a peak ground seismic maximum acceleration 1.73 times the one used for design.
At that time the dam was reevaluated with methodology and tools used in the 80’s. The conclusion was that the intake of the emergency water system pumps was not affected.
The dam is included in the present seismic assessment list to be evaluated by Córdoba University once the new seismic parameters are established.

Q-52	Country Czech Republic	Article Article 18.1	Ref. in National Report

Question/ Comment: Can you clarify in the relation of preparation of new big nuclear source (for instance CANDU) the reasons for preparation of small reactor CAREM – 25?

Answer: Argentina has a nuclear power generation programme that started in the second half of the 20th Century. Around 8% of the produced electricity is nuclear, delivered by two nuclear power plants, Atucha I (PHWR type, 350 MWe) and Embalse (CANDU type, 600 MWe). A new plant, Atucha II, is also under construction.
The CAREM–25 prototype is completely a new concept in nuclear reactors and it is in the design stage. This project developed in Argentina and owned by CNEA, includes the new design criteria to improve the plant's safety. Emphasis to the prevention of core degradation accidents has been given since the design genesis

by means of passive safety features, guarantying no need of active systems or operator actions for a period of two days.
CAREM is different from the existing NPPs in Argentina, because of its size and features.
CANDU and CAREM NPPs are designed to be used by two different electric markets. CAREM NPP can be used for distributed generation and to supply energy to small populations, in regions without big electric distribution grids.
Argentina has several big distribution electric grids as the "Gran Buenos Aires - Litoral - Buenos Aires" system, for the supply to high consumption areas; and other areas where the distributed generation is a solution to give stability and reliability to the electric supply.
CAREM NPP can satisfy that requirement perfectly.CAREM NPP can also be integrated to a seawater desalination plant to supply water and energy to coastal cities with fresh water scarcity.

Q-53	Country Germany	Article Article 18.1	Ref. in National Report page 101, 3.18.3.3.1.

Question/ Comment: It is mentioned that actions have been taken in relation to the sump clogging issue. Could you explain in what detail the sump clogging issue has been analysed and which kind of measures have been performed in the plants?

Answer: NASA has hired AECL to make a risk assessment of sump clogging, due to dirt released (isolations, painting, etc), that may cause obstructions in the flow coming from the safety injection pumps in the case of loss of coolant accident (LOCA). Such contracting was decided after assessing international background on the matter (NRC Generic 2003 letter, RSK statement, GRS experiments and analysis, etc.) and after the improvements carried out by AECL in the CNE NPP sump. Also the information coming from filters suppliers for this purpose was considered. AECL has extensive experience in carrying out this activity on the Canadian CANDU NPPs and in NPPs of other designers (France, PWR USA), including the specification, construction and installation of large area filters in small places. AECL follows internationally accepted methodologies (NRC), approved and validated by the regulatory authorities in those countries.

Q-54	Country Russian Federation	Article Article 18.1	Ref. in National Report

Question/ Comment: Subsection 3.18.3.3.1 of the Report says that one of major problems, when Atucha-2 construction was suspended, was equipment (components) conservation.
Can we say that the results of the conservation program, which are defined when extending Atucha-2 construction time, are in line with the requirements set for this program?

Answer: As stated in the Fourth Argentine National Report section 2.8 “CNA II Status of Long Time Stored Equipment”, one of the principal concerns, during the delay on the construction of CNA II, was the appropriate preservation of components.
The following criteria were used for the appropriate components preservation:·
- Influence on Nuclear Safety,·
- Economical value,· Replacement feasibility,·
- Impact on Project schedule,·
- Preservation cost versus Replacement,·
- Damage Sensitivity.

About component preservation tasks, they were divided into:

- Routinely: Applicable to all components and installations. Their scopes and execution frequencies were defined in specific procedures and instructions.·
- Non-routinely: Applicable basing on the results of the routine preservation tasks.

In some cases it was necessary to implement corrective actions for conservation purposes, due to the results of routine tasks, external or internal assessments, or improvements in preservation criteria.
The important aspects taken into account were the materials, parts and elements affected by ageing. The most important were gaskets, rings, welding electrodes, greases and lubricants, glues and adhesives, NDT consumables and paints, , Supplies for the first filling (lubrication oils, control fluid oil), spray insulation for HP turbine casing, electrical and I&C components containing electrolytic capacitors.
They were also taken into account the materials, parts and elements affected by new regulations, such as the insulation material for primary system components (experiences recently gained from sump clogging), change of refrigerant in chilled water machines (Ex.: R12 to R134a), and elements containing asbestos.
The preservation processes were subjected to a continuous assessment throughout licensee internal and external quality audits, Siemens inspections, insurance company verifications and Regulatory Body verification.
As an example the Inspections of preservation tasks performed by Siemens were the following: June and October 1986, May 1988, February and March 1989, October 1990, February and June 1991, March and December 1992, April and November 1993, March 1995, April 1996, April 1997, April 1998, October 2003 and April 2005 (Siemens/FANP walkthrough).
Additionally, in 2007, an IAEA mission took place with regard to the analysis of state of preservation of stored components and demonstration of fitness for continued use.
Personnel qualification, with the purpose of assuring an adequate process of preservation, is one of the main concerns of NASA. In that sense the personnel that executed preservation tasks were trained and qualified according to NASA procedures, while Preservation Supervisors and Preservation Team are qualified by Siemens/FANP.
The components preservation process results could be resumed as follows:·
- Stored and Erected items have been successfully preserved (including Main Components),·
- Components and Systems in Operation have been maintained according to the maintenance programme,·
- A reduced quantity of non critical items to be repaired or replaced have been identified, ·
- Criteria of specific revision of components and evaluation of possible replacement of parts subjected to natural ageing, will be applied during the pre-phase of the Project.

The results of the routine process of components and facilities preservation are considered satisfactory. So far no relevant findings have been detected. Only few cases of oxidation (i.e.: ventilation ducts flanges, pipes and some ferritic materials accessories), on which appropriate conditioning measures are being carried out.
Besides, a Review Plan for mechanical, electrical and I&C components is now under implementation, with the participation of outside organizations and/or

original providers (eg: Andritz, Sulzer, Siemens, Areva, Noell, KSB, Sterling, MMA, Tecnatom, University of San Juan). The aim of this Plan is to detect drawbacks due to ageing or other factors not observed during the routine process of preservation, and then carry out timely corrective actions. The scope of this plan was defined taking as main criterion the inclusion of those components belonging to safety systems or belonging to safety related systems.

Q-55	Country Finland	Article Article 18.2	Ref. in National Report
Question/ Comment	Have you met specific problems to find spare parts or replace-ment components properly qualified to a high safety class, as needed for plant lifetime management? If yes, how have you addressed the problem?		
Answer	Regarding the spare parts or replacements of mechanical/electrical components, there were no major drawbacks. In general, their slow technological evolution has not meant an obstacle to their substitution. The electronic/instrumentation is the area where the technology evolution is faster. The substitution of components and spare parts is not as simple as in the previous case, being difficult to carry out a direct substitution or a simple modification. In areas where the modification coming from new components where the adaptation exceeds the Licensee response capacity, it has looked for the support of national (e.g. CNEA) or international organizations that have been implementing technological developments. The nuclear quality spare parts supply to ensure the safe plant operation has the following drawbacks: - Suppliers Search: it is not always possible to have the original supplier of a component, and not all of the components suppliers have a national representative. Sometimes it has been necessary to appeal to the designer. · - Volume purchase: in Argentina only two NPPs operate and they are of different designs. In some cases, the small purchase volume, leading to face surcharges or lack of offer. · - Obsolescence: some components do no longer exist in the marketplace. To address this problem, the engineering groups must find a replacement, verifying functional equivalence with the original and qualifying the new one.		

Q-56	Country Canada	Article Article 19.2	Ref. in National Report Section 3.19.3.2
Question/ Comment	Section 3.19.3.2 of the report refers to the Policies and Principles Manual at CNE which contains the operational limits for the safe operation of CNE. Please describe how this document fits within the licensing framework as applied to CNE, and elaborate on any requirements for the reporting of non-compliances with the Manual. Also, please indicate experience to date with the Manual, such as compliance history and adequacy of requirements, and whether consideration is being given to implementing an alternative approach such as a technical specification.		
Answer	CNE Operational License defines the mandatory documentation that must be fulfilled for the safe operation of the installation. In particular, the Policies and Principles Manual (PPM), which contains the operational limits and conditions, is included among such documentation. Based on the operational limits and conditions included in the PPM, the operational procedures of CNE were established. The operational procedures consider normal and abnormal operation, as well as emergency conditions.		

NASA as responsible for the radiological and nuclear safety of NPPs in Argentina, surveys the PPM fulfilment under any operating conditions and, if a deviation occurs, the Licensee usually proceeds following the PPM instructions.
In practice, only in a few cases the intervention of ARN was necessary. In such cases ARN has submitted the corresponding complementary requirements referred to remedial actions, including the considerations to avoid recurrences.
The following examples show the actions taken by ARN from non-compliances with the PPM:
1. Containment leakage test: As a mean to assure that the leakage rate is maintained below the allowable value, the PPM details a five year test period, and the corresponding acceptance criteria. During the test carried out in 2005, the measured leakage rate was higher than the allowable leakage rate established in the acceptance criteria.
As a consequence, ARN had not considered valid the test and required the Licensee the following:·
- To present a containment conditioning program to repair the leak detected, to be fulfilled in the next programmed outage;·
- To carry out a new containment leakage test addressed to verify the acceptance criteria according to what is established in the PPM.

2. Steam generators tube failures: The PPM indicates the operational abnormal event procedure that must be applied by the operator in case of a steam generator tube failure occurrence.
Three steam generator tubes failures affected different steam generators from July 2006 to February 2007. Despite the fact that PPM instructions were followed, considering the recurrence of this event, ARN required the Licensee:·
- As a condition to authorise the plant to start after the programmed outage 2007, to submit a report including the action taken to demonstrate that the safe operation till the next programmed outage is assured. ·
- To re-assess long term SGs operation conditions, a detailed analysis of degradation rate, the structural integrity considering the SGs current state and the consequences of seismic occurrences and other events that cause sudden depressurisation of secondary circuit.

Argentinean regulatory standards are not prescriptive but of compliance with safety objectives, that means, of performance of systems, equipment and components. How such objectives are achieved is based on good engineering judgement, in the operators' qualification and in the Licensee's way of making appropriate decisions.
It could be mentioned that the PPM has successfully been used since the commissioning, covering the requirements for a safe operation. Therefore, taking into account that the regulatory philosophy applied by ARN is non-prescriptive, the implementation of an alternative approach, such as a technical specification, is not being considered.

Q-57	Country India	Article Article 19.3	Ref. in National Report page 112, section 3.19.4.1.3
Question/ Comment	It is mentioned that heat exchanger in RR circuit is returned to service with partial repair. Whether this has resulted in any activity buildup in the related circuit and whether any limit on activity is specified for continued operation in this mode.		

Answer	The repaired heat exchanger is the interface between RR-RL circuit and UK circuit. RR RL system circulates non radioactive demineralized water, RL is boilers feedwater system and RR is an intermediate system between primary system and UK, which pumps water from the river (heat sink). So there is no concern about radioactivity levels in the circuits related to this heat exchanger, or any radioactive release due to its failure. The 26-05-07 CNA I NPP outage was due to the increase in a loss of demineralized water from the intermediate system RR (no radioactive) to the UK circuit. The repair partially eliminated the loss of water, remaining a small leak, but recovering the functionality of the system. The heat exchanger RR42W02 replacement will be carried out during the 2008 planned outage.

Q-58	Country India	Article Article 19.3	Ref. in National Report page 113, section 3.19.4.2.2

Question/ Comment	CNE has encountered frequent outages due to SG tube leaks. Several major steps have been taken for continued operation with these SGs. Also, the criterion for keeping the SG tubes in service has been made more conservative which may lead to plugging of more number of tubes. Please indicate the original and revised criteria for plugging the tubes. Were any limits specified for permissible leak rate and activity build up in the feed water circuit for continued operation of the reactor.
Answer	The CNE criterion adopted from the beginning of its operation for the tubes plugging, was the defined by the Canadian Standard "CAN / CSA - N285.4," Periodic Inspection of CANDU Nuclear Power Plant Components " Clause 14.2.5.2 " that establishes the following: · - All relevant indications from current and previous inspections where predicted wall loss will not exceed 40% of the nominal wall thickness before the end of the next inspection interval; or · - Indications that shows that no deterioration has occurred since the previous inspection. Based on the Operating Experience gained during the last years, where three unplanned outages due to recurrent SGs tubes failures occurred, the above mentioned criterion was reviewed, adopting a more conservative one as follows: · - Every tube with a defined signal (phase, percentage and amplitude) > 1 V, within the U - Bend critical area (near tube support plates 14C, 15 A, 16 A, 17 A, 18 A, 19 A, 20A, 21A and 22H) with or without previous signals in that area must be plugged. · - Conduct an eddy current inspection to determine the tube support plates (TSP)degradation rate. As a result, in a preventive way tubes located in areas where TSP presents degradation levels L5 (ligament breach of two ligaments) or L6 (ligament breach of three ligaments) must be plugged. Concerning the specified limit for permissible leak rate, the procedure establishes that the leakage rate evolution must be followed till it reaches 5 Kg. / hour, due to only for leakage rates higher than this value it is possible to detect the failed tube by fluorescein test. The operating procedure establishes that the plant must be shutdown if the mentioned condition is reached. The only specific limit applicable for continued

operation of the reactor is the environmental discharge restrictions.

Pak-6	Country Pakistan	Article Article 19.4	Ref. in National Report Section 3.19.5
Question/ Comment	CANDU Owner Group (COG) has also developed Emergency Operating Procedures (EOPs) based on symptom-oriented approach as done by Westinghouse Owner Group (WOG) for LWRs. Please indicate whether Argentina is planning to adopt same approach for its PHWRs ?		
Answer	CNE NPP has been developed Emergency Operating Procedures based on a criterion that, consider each event and details the corresponding symptoms that the operator have to identify in order to carry out a diagnosis and to decide the actions to be taken.Up to the moment it is not projected any change in EOPs approach.		

Q-59	Country Finland	Article Article 19.7	Ref. in National Report
Question/ Comment	Please explain the principles or criteria applied by the regulator and operator for screening other experience than incidents (e.g., management issues, unexpected degradation, design weak-nesses, external hazards not considered earlier), for the purpose of ensuring adequate sharing of important experience with in-ternational interested parties (regulatory bodies, operators, de-signers, international bodies). Identify the relevant guide docu-ments, if any, used for the screening.		
Answer	The criteria applied by the regulator and operator for screening other experience than incidents is mainly based on the lessons learned from domestic and international operative experience. Concerning the domestic screening related to other experience than incidents, it could be mentioned audits and eventually inspections results are used as a source of investigation related to management issues. For unexpected degradations, the results coming from both the Ageing Program and the Surveillance Program (ISI and inspections) are used. Concerning design weaknesses, the lesson learned form operative experience, deterministic and probabilistic safety assessment, as well as, a dynamic technical interaction with the designers are applied. The external hazards considered are periodically reviewed according the frequency revision as established in the mandatory documentation. Regarding international screening, there is a continuous and active participation in international forums like as CANDU Owner Group and WANO by the Licensees; and CANDU Senior Regulators, Forum of Ibero - American Nuclear Regulators, and the Network of Regulators of Countries with Small Nuclear Programs (NERS), as well as other specialized international technical meetings.		

Q-60	Country Finland	Article Article 19.7	Ref. in National Report
Question/ Comment	Please explain how the regulatory body ensures or verifies that the operators are informed and properly analyse the operating experiences reported through the well established international channels (e.g., WANO, IRS), and that they address the lessons learned by taking proper actions.		
Answer	The Regulatory Body (ARN) verifies that the Licensee properly analyses the operating experience shared through different international channels by means of an Operating Experience Feedback Program (OEFP) implemented by the utility according it were required by the ARN. Through the OEFP the actions taken as a consequence of use of external and local experience is evaluated.		

The Licensee receives information related to operating experience from different international channels (i.e. WANO, IRS). Then the licensee carries out an analysis of the before-mentioned information, a screening aimed to choose the experience that could be applied to Argentinean NPPs, and submits the results to plant operators. Once the analysis is completed within the Licensee organization, the results are submitted to ARN.
The ARN verifies that the Licensee addresses the lessons learned taking proper actions through a close follow up of the actions taken by them. Besides, ARN verifies that such lessons are included in the corresponding Retraining Programs.

Q-61	Country Finland	Article Article 19.7	Ref. in National Report
Question/ Comment	Please explain your national policy and practice of sending feedback reports to the international interested parties on actions that have been taken in your country as response to significant events reported through international channels (e.g., WANO, IRS).		
Answer	The AR 3.9.2 standard sets the basic criteria concerning definitions, event communication modes between the Licensee and ARN, and event analysis. There is no national policy on sending feedback report to the international interested parties. In the same respect, NASA procedures for operating experience management, do not consider sending back feedback reports to WANO. However, to send feedback reports to international interested parties on actions taken in Argentina, they are usually carried out via informal ways like e-mail.		

Q-62	Country Germany	Article Article 19.7	Ref. in National Report page 117, 3.19.8.2
Question/ Comment	According to the description of the OEF of other NPPs, many events per year have been screened by the licensee and the remaining, thought to be important events have been reported to ARN. Are there screening criteria in place for this procedure?		
Answer	According to what was informed in the Argentinean National Report, the screening criteria in place consist on the selection of all applicable events to the domestic plants, coming from international data bases. After the screening, the selected events are analysed in detail and quarterly reported to ARN for evaluation.		