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Business corporation with an Executive Board and a Supervisory Board
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AREVA

2006

STATUS OF SAFETY at AREVA group facilities

2006 annual report
AREVA General Inspectorate

AREVA

With manufacturing facilities in 41 countries and a sales network in more than 100, AREVA offers customers reliable technological solutions for CO_2-free power generation and electricity transmission and distribution. We are the world leader in nuclear power and the only company to cover all industrial activities in this field.

Our 61,000 employees are committed to continuous improvement on a daily basis, making sustainable development the focal point of the group's industrial strategy.

AREVA's businesses help meet the 21st century's greatest challenges: making energy available to all, protecting the planet, and acting responsibly towards future generations.

1 Removing diffuser components from the former UH enrichment plant, Tricastin, **France**

2 Putting used fuel transport casks on lorries, AREVA NC, La Hague, **France**

3 Controlling the dose rate in the disengagement chamber of a flame reactor in the COMURHEX conversion plant in Tricastin, **France**

4 Assembling fuel in the AREVA plant in Lynchburg, **US**

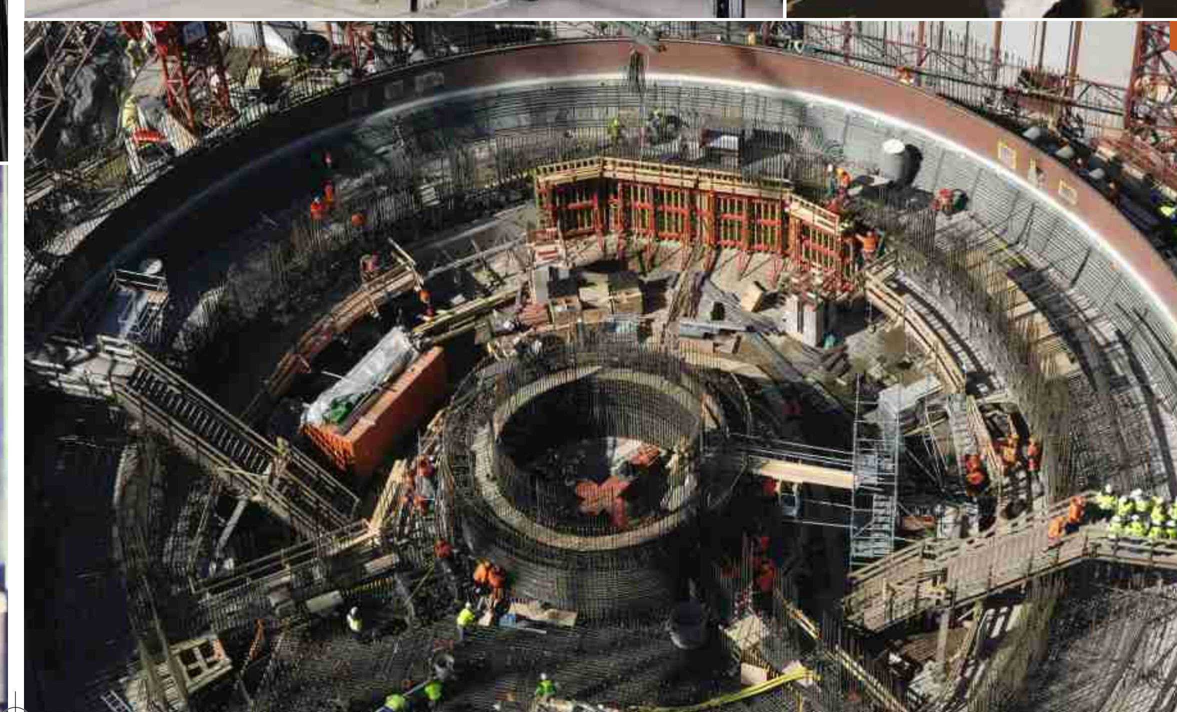
5 Control rod drive mechanisms, Jeumont plant, **France**

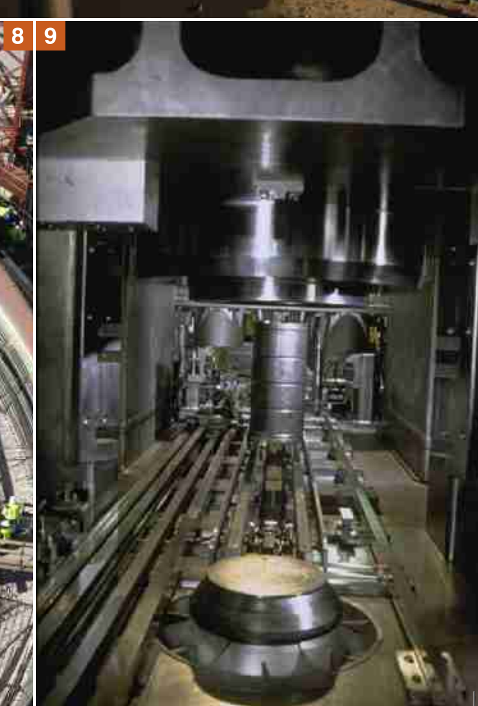
6 CRESUS machine for inspecting rods at the FBFC fuel fabrication plant in Romans, **France**

7 Water sampling as part of environmental monitoring, at the SOMAÏR uranium ore treatment plant, **Niger**

8 EPR construction site, Olkiluoto, **Finland**

9 Compacting press in the workshop for reducing the volume of technological waste and hulls and end-pieces, AREVA La Hague, **France**





Véronique Decobert
Senior Vice President, Safety, Health and Security, AREVA Group

Taking into account organizations and human factors to give a new dimension to prevention

2006 was marked by changes in the regulations in France (law on transparency and safety in the nuclear field, law on the sustainable management of radioactive materials and waste) and also by increasingly stringent requirements in the various countries in which AREVA is located.

AREVA is currently developing an integrated offer in what is today a rapidly changing economic context. The group aims to meet increasing energy requirements by offering innovative solutions to combat climate change.

The current phase involving the service life of nuclear facilities (major service life extension work on existing facilities, dismantling at different stages of development, construction sites for new enrichment and conversion plants and reactors, and increasingly developed customer services) will play a decisive role in our group's development.

So, we have to reinforce our vigilance and rigor in terms of safety in all of our fields of activity and in each of the group's business lines. Nothing can ever be taken for granted and even if all the risks have been taken into account, we need to ensure that routine and habituation do not weaken our will for improvement.

The safety results are satisfactory: they illustrate strong dynamics in our facilities, a decline in the severity of events which occurred and our set target of exposure below 20 mSv for everyone in the group was met in 2006. However, an analysis of major events also shows that, in these fields, success is still shaky. So, as the General Inspector has emphasized, we must not let up at any level.

Even if regulatory requirements can sometimes appear to be complex and cumbersome, we must bear in mind that they are designed to guarantee the safety of employees, populations and the environment, and this is exactly why no breach whatsoever will be tolerated. Elaboration of the required files is not simply an administrative task and should not be overlooked. These files provide the proof that all the necessary studies have been carried out to anticipate and reduce risks, the proof that we are taking our responsibilities seriously.

However, despite their obvious importance, studies and written material alone do not mean that the expected levels of performance will be met. Action prevails and should be preventive above all else. As we go about our daily business, we should assess the consequences of our gestures in terms of safety and nuclear safety, intervene when a colleague's actions may be risky and if necessary signal any malfunction we may come across. This is our duty.

Even more than others, operational directors and managers must have exemplary behavior and be personally involved in reducing risks. They must show their marked willingness to improve safety and radiation protection through their actions and the support they provide to employees. Together, we must develop tools and initiatives which will enable us to share our experiences and continue to learn from them, so that we can build an even safer future. The analysis of recent events, summarized by the General Inspectorate in this report, highlights the importance of organizational and human factors, a new dimension we want to include in prevention. This is a complex task and requires that our teams acquire additional skills. And such an initiative can only be successfully deployed if everyone gets involved. It is one of our major objectives for 2007 so that our safety performance can be improved even further. I am fully confident that each one of us will make a wholehearted contribution.

A LOOK BACK OVER 2006 BY THE AREVA GENERAL INSPECTOR

2006: continuous improvement progress in nuclear safety, but mixed results

Marcel Gac
AREVA General Inspector

This report presents a snapshot of nuclear safety and radiation protection conditions in the AREVA group's nuclear installations in France and abroad, as well as of radiation protection aspects in service activities, as identified over the course of the annual inspections and analyses program carried out by the General Inspectorate in 2006.

This report is presented to the AREVA Supervisory Board, communicated to the labor representation bodies concerned, and made public.

NUCLEAR SAFETY LEVEL: SATISFACTORY BUT WITH A FEW WEAK AREAS

In light of the inspections, appraisals and coordination missions it has performed, the General Inspectorate considers that the nuclear safety level of the AREVA group's nuclear installations is satisfactory.

It particularly noted positive changes on numerous sites and efforts in the field of continuous improvement that have helped to strengthen nuclear safety. This has been possible through the full involvement of management teams, an improvement effort initiated by upper management, actions to increase personnel awareness of nuclear safety culture, and supervisors' heightened presence around operators.

However, the occurrence of certain events in facilities has led us to question the nuclear safety repercussions that the changes to activities or organization on some sites have had. In these times of change, drifts in nuclear safety culture have been identified.

The General Inspectorate considers that a preliminary analysis of the human and organizational factors of these changes, sized to match the impact the change has on nuclear safety, should be made to ensure that a guaranteed level of nuclear safety is maintained (allowance for changes to references, availability of the necessary skills, resources of the operating and support structures, etc.).

Preparations should also be made to monitor the changes and spot any telltale signs of drift in the application phase. Managers should be extra vigilant and the occurrence of any drift should be systematically dealt with ahead of implementing corrective actions.

The level 2 INES* event that occurred in the ATPu facility in Cadarache was therefore considered particularly significant by the General Inspectorate. The activities being carried out within the entity at the time of the event were singular and the identified causes numerous, but were fundamentally the product of human and organizational factors. The lessons learnt from this event need to be shared with all other entities.

Like many other less significant events that took place in 2005 and 2006, this event led the General Inspectorate to focus particularly on criticality risk control on sites where fissile material is used. It considers that internal criticality control actions must be carried out on these sites in order to make sure the required provisions are known and applied by all operators.

In-service fire risk control hinges on – among other things – the application of fire prevention, protection and preparation rules, which must be a constant concern of site managers. The General Inspectorate noted numerous positive developments on most sites in this field in 2006, as well as the production entities' full cooperation with the risk analysis services and fire-fighting services. On most sites, fire risk control is organized clearly and in a structured manner. However, the events that occurred in 2006, both in AREVA installations and those of other operators, remind us of the constant need to be vigilant.

* For details, go to page 19 and glossary page 32.

REGULATORY CHANGES IN FRANCE

In 2006, two major new laws were passed in France on nuclear activities:

LAW DATED 13 JUNE 2006
ON TRANSPARENCY AND NUCLEAR SAFETY

This law introduces a major renovation of French nuclear legislation. It provides for the creation of:
- an independent administrative authority (Nuclear Safety Authority) in charge of nuclear safety inspections, and radiation protection,
- a law on public access to nuclear information.

Of the many orders implementing this law expected in 2007, two – on French Nuclear Facilities – are of key importance, as among other things they define the status of our facilities and the related procedures that apply throughout their service life.

LAW DATED 28 JUNE 2006
ON THE SUSTAINABLE MANAGEMENT OF RADIOACTIVE MATERIAL AND WASTE

This law is a continuation of the process launched in 1991 by the so-called "Bataille" law to look into the end of the nuclear cycle in France. This law is a foundation insofar as it lays down a timeline for the technical achievements needed to manage all of the radioactive waste in France. It also establishes the related technical, financial and political governance.

From an operating safety point of view, the process creates a framework for waste packaging and treatment operations in AREVA's facilities in France. It therefore covers:
- what is to be done with the highest level waste from the fuel reprocessing, as well as the rules for managing waste generated by the reprocessing of foreign fuel;
- management of low-level long-lived waste (graphite and radium) in a future repository to be opened by ANDRA* in 2013;
- management of waste with or without disposal channels as part of a three-yearly review of the national radioactive material and waste management plan;
- management of mining residue storage facilities;
- packaging before 2030 of all medium-level long-lived waste generated before 2015.

PROJECTS TO OPEN NEW FACILITIES AND CLOSE OLD FACILITIES

Starting now, and even more so over the coming years, the entities of the AREVA group will be confronted with major changes in activity:
- numerous projects have been undertaken to open new facilities (fuel cycle facilities or power reactors), increase production in existing facilities or renovate old facilities;
- certain fuel cycle installations are at the end of their service life; dismantling operations have already started in some and are due to start shortly in others. Nuclear safety on current or future dismantling worksites hinges – among other things – on the attention paid specifically by operators to the dismantling operations themselves, the quality of support given and how well subcontractor activities are controlled. The operations to be performed at AREVA NC's sites in La Hague and Cadarache will be on a totally different scale than those finished or underway by FBFC Pierrelatte, AREVA NC Pierrelatte or

* Go to glossary page 32.

SICN Veurey. This is particularly due to the materials used on these sites, and in the case of La Hague, to the complexity, sequencing and duration of the work itself.

All of these changes to our activities will require the full mobilization of the group's project ownership teams and engineering departments. The proper technical skills must be available to prepare the work, and the administrative side must also be readied in order to have the right permits at the right time.

Legislative changes in France, particularly the introduction of the law on nuclear material transparency and safety, now requires operators and project owners to include public information aspects in their projects. Implementing the right to public access to information cannot only come from the skills of experts or process/nuclear safety engineers, as is the case for the required safety cases. Ensuring public access to information will involve a major workload for the group, given the projects currently being prepared as part of the ongoing procedures to improve our industrial tools.

Application of the Nuclear Safety Charter

ORGANIZATION PRINCIPLES

ON-LINE CONTROLS AND INDEPENDENT CONTROLS OF OPERATING TEAMS

In 2006, the necessary provisions were put to paper stipulating that operating teams had to be controlled by a structure not connected with their line management, known within the group as "first level internal controls".

A three-level control system was subsequently established to ensure the operating entities are properly applying the nuclear safety and radiation protection rules:

- at an operational level, the very first checks regarding nuclear safety- and radiation protection-related activities are for the proper application of operating rules, carried out as close as possible to where the activities take place. Each operational unit performing a nuclear safety-related activity must set up a system for checking this. During this technical control, a physical person (from the entity's management team) checks that activities are under control, whether performed by entity personnel or subcontractors;
- level 1 internal controls are first and foremost of compliance with nuclear safety references and the working of the internal nuclear safety and radiation protection delegation system. These include controls of subcontracted activities, and aim at making a regular organizational and technical assessment of the effectiveness and suitability of the provisions made to carry out nuclear safety-related activities. The controls are made for the entity manager by persons or entities not connected to the operating teams. Controllers need to have sound skills in operational nuclear safety and/or radiation protection, as well as good knowledge of regulatory references and applicable procedures. First-level internal controls also provide an opportunity for the "controllers" (i.e. people from outside the operating entities and operating teams) to dialog on the challenges and nuclear safety culture with the personnel of the controlled entity;
- level 2 controls are performed independently of the operational organizations by the General Inspectorate for General Management. These aim in particular at ensuring that the Nuclear Safety Charter is properly applied, and detecting telltale signs of any possible drop in performance in the fields of nuclear safety and radiation protection.

The General Inspectorate considers that the provisions relating to technical operational controls and Level 1 controls are properly implemented in most entities and should continue to be developed, particularly for front end entities. The anomalies detected during these controls should be integrated in the deviation processing and feedback processes.

ADAPTABILITY OF ORGANIZATIONS TO MANAGE EMERGENCY SITUATIONS

Accident situation management in the group is organized on the principle of operational delegation that is as close as possible to in-the-field activities, to offer the responsiveness and effectiveness needed to control any such exceptional situations. This basic principle is applied in every affected entity, and for industrial installations is one of the general provisions laid down by the national authorities in every country concerned.

In the event of an emergency, these local organizations must work with General Management using centralized tools for emergency situation management and communication. A shared understanding of centralized missions must be developed, including the reconfiguration of these tools on creation of the group's new head office.

As in previous years, accident situation management drills were used to check the operational nature of the provisions in place, as well as train the people involved in such events.

The General Inspectorate points out that these drills are essential, notably as they make it possible to validate cooperation with outside entities (emergency services, local authorities, media, etc.). It is therefore important to make sure that large-scale drills organized with local authorities are held at suitable intervals.

ACTION PRINCIPLES

PRELIMINARY RISK ANALYSIS

The basic principle of nuclear safety in the installations of the nuclear cycle is the concept of defense in depth, i.e. the set-up of several levels of protection. Preliminary risk analysis is an integral part of defense in depth, not only in the installations' pre-design phases but also throughout their service lives (operation, maintenance, modifications and dismantling). This involves identifying the nuclear safety requirements that need to be met to guarantee the effectiveness of nuclear safety systems in any situation.

The principle of performing preliminary risk analyses ahead of any change or one-off operation is shared by all AREVA entities and applied exhaustively and thoroughly by most of them.

For some, special care must be taken to ensure these analyses are pragmatic and complete, given the specific nature of the operations concerned. The requirements resulting from these analyses must be clearly laid out in all operating and work documents. It is also essential that the provisions in place prior to operations are properly established and known to the various operators.

RADIATION PROTECTION APPROACH

The protection of workers from ionizing radiation and environmental protection are part of managerial culture in AREVA's entities at every level.

The group's objective to bring the individual doses received by exposed workers operating in installations or carrying out service activities on customer sites down to 20 mSv per year was achieved in the first half of 2006.

The various managers' involvement was instrumental in reaching this target, particularly those of the Services Sector. This included convincing our customers in countries where radiation protection legislation is less stingent, and all in a very tight economic climate. This makes the results fragile, and partly dependant on the nature of the contracts and operations performed for electrical utility customers.

As in previous years, radioactive releases remain well under authorized limits. R&D studies have been carried out on ways to further reduce radioactive releases, particularly by AREVA NC's La Hague site, as part of the changes to its discharge permit.

The radiological impact of radioactive releases on the general public and the environment is very low, and at the very most equal to around a day's exposure to France's natural radioactivity level, i.e. 1% of the annual regulatory limit set at 1 mSv.

No significant event involving uncontrolled releases were recorded on any of the sites.

Transparency, a principle laid down in the Nuclear Safety Charter, is in evidence, and public communications are regularly made on the results of surveillance. The quality of the environmental monitoring on our nuclear sites is widely recognized.

TRAINING AND MAINTAINING SKILLS

The vast majority of entities have determined the missions allocated to internal staff, as well as the required qualifications and training levels. Operator and supervisor activities are described fairly precisely, with management and support function positions laid out in general mission sheets, and maintenance/transport activities described in function sheets. However, only a few sites have set up a systematic approach for identifying competency requirements based on activity analyses, making allowance for how sensitive workstations are to the understanding of equipment relied on for safety and requirements.

There is still room for installation managers to improve the provisions and practices enabling them to make sure the people who execute nuclear safety-related activities have the right competencies.

The group's ever-changing projects and activities are leading to a consolidation of the necessary resources and competencies at operating entity and engineering department levels.

Actions were undertaken in 2006 to give value to the nuclear safety function, which led to the creation of communication action plans aimed at engineering school graduates.

The group is contributing to the introduction of nuclear safety training courses in universities, and is developing internal nuclear safety courses for new hires.

The General Inspectorate considers that internal mobility should be promoted between operational entities, nuclear safety support functions and engineering departments in order to disseminate nuclear safety culture throughout the group.

TRANSPARENCY AND REPORTING

Many of the provisions in the law on nuclear transparency and security were already included in AREVA's Nuclear Safety Charter. For example, every year nuclear sites draw up a report of operating safety in their installations, in addition to their environmental and labor reports. This is then communicated to the local information commission for the site as well as the personnel representation bodies concerned.

INCIDENT DECLARATION

Nuclear events that occur in nuclear installations or during the transportation of radioactive materials are assessed according to the international INES scale, and made public when rated higher than or equal to 1. INES is a way of giving the public consistent information on the severity of events in terms of nuclear safety.

We must make sure that such events are communicated in a manner that makes them perfectly understandable to all audiences, both inside and outside the group.

Event classification is justified to the Control Authority following a thorough and documented analysis carried out by nuclear safety specialists along with operational managers, using documents issued by the IAEA* and control authorities.

A too low INES rating may indicate a deficiency in the quality of analyse process, just as an overestimation could portray the event as more serious than it actually is.

* Go to glossary page 32.

Notable events

In 2006, the total number of INES classified significant events relating to nuclear safety, radiation protection, transportation of radioactive material or the environment remained stable in relation to 2005, at just over eighty.

The number of INES class 1 events fell in 2006, though the number of INES level 0 events increased by the same amount. This development is positive insofar as it shows the severity of events is falling.

However, this positive trend is dampened by the occurrence once more of an INES level 2 event. This significant event took place at AREVA NC's Cadarache site during a grinding operation. It was the product of three coincidental factors:

- a malfunction of the equipment controlling the quantity of material loaded into the grinder,
- the use of inappropriate compensation measures,
- insufficient preliminary analyses.

The grinder was loaded twice, thereby exceeding the maximum amount of fissile material authorized by its operating instructions. However, the amount loaded into the grinder was well below that needed to cause a critical excursion phenomenon, thanks to the proper application of nuclear safety rules at the design stage.

Despite being of no consequence to personnel, the public or the environment, the event was caused by human and organizational factors that point to a lack of nuclear safety culture on the site.

This, combined with similar anomalies observed on other sites, leads the General Inspectorate to recommend that particular attention be given to checking that operational provisions relating to criticality control be properly applied on sites that use fissile material. Checks should notably be made to ensure not only that all operators are aware of the criticality instructions, but also that they understand the underlying aim of preventing these risks and that additional training is identified and given.

Other significant events in France and abroad, outside the AREVA group, also affected the availability of the distribution resources of nuclear power installations. These further remind us of the importance of carrying out preliminary analyses of the provisions in place against malfunctions, and the need to prepare for this type of situation. Even though a loss of electrical power does not lead to a major degraded nuclear safety situation on most of AREVA's sites, a sequence of malfunctions of logic controllers or back-up equipment could cause potentially damaging disruptions, for example to ventilation or I&C systems. Tests simulating safe configurations in the most realistic operating conditions should be carried out regularly in order to ensure that logic controllers and back-up systems function properly, and that operating teams are fully aware of the actions to take.

SAFETY AND RADIATION PROTECTION STATUS IN NUCLEAR INSTALLATIONS AND SERVICE ACTIVITIES

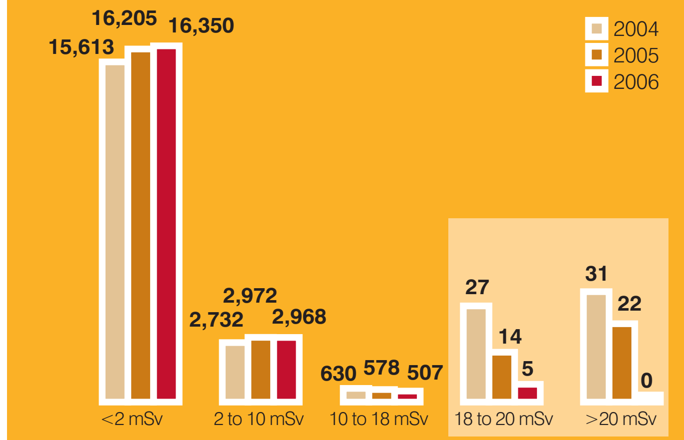
Personnel
radiation protection

AREVA is committed to keeping worker exposure to ionizing radiation in its facilities to a level that is as low as is reasonably achievable, through application of the ALARA* principle, and in this context has adopted a continuous improvement policy.

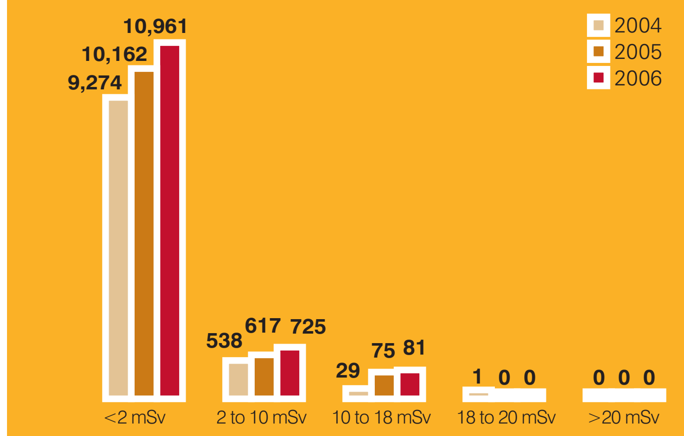
AREVA has therefore undertaken to bring the maximum individual doses received in its installations by workers exposed to ionizing radiation down to 20 mSv/man/year in countries where legislation is less stringent, on the basis of the recommendations of the International Commission for Radiological Protection (ICRP).

AREVA is also aiming to impose this limit for its service activities carried out in its customers' facilities.

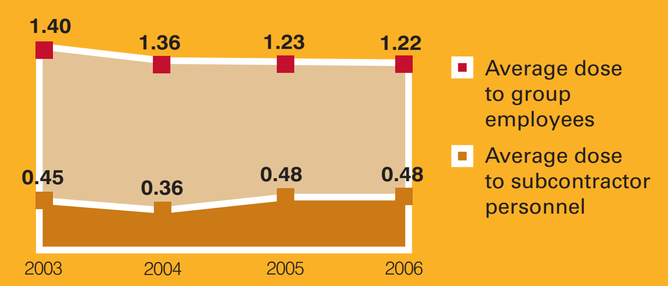
DOSES RECEIVED BY AREVA GROUP EMPLOYEES OVER A 12-MONTH PERIOD



DOSES RECEIVED BY SUBCONTRACTOR PERSONNEL OVER A 12-MONTH PERIOD



AVERAGE DOSES RECEIVED BY EMPLOYEES AND SUBCONTRACTOR PERSONNEL



* Go to glossary page 32.

RESULTS

By the end of the first half of 2006, no AREVA employee or subcontractor working on any of the group's sites had received doses greater than 20 mSv over a sliding 12-month period, thereby fully complying with the objectives laid down in the Nuclear Safety Charter.

These positive results are the product of the very good radiation protection culture in the group's entities, established by trained and competent radiation protection personnel. In addition to the Services Sector, visible progress has been made in the Mining Business Unit (COMINAK) and MELOX.

MAXIMUM INDIVIDUAL DOSE

As in previous years, an analysis of dose reports shows that the most exposed personnel, barring incidents, are those of the Services and Mining BU entities.

Five group employees, the majority of whom work in the US Services Sector, where the regulation annual exposure limit is 50 mSv, received doses of between 18 mSv and 20 mSv. It should also be noted that, thanks to preventive measures, nearly 53% of dose-monitored employees received a zero dose, and more than 82% received less than 2 mSv.

The radiological protection rules are identical for all AREVA and subcontractor employees. No subcontractor working on any AREVA site received a dose greater than 18 mSv; more than 74% of all dose-monitored subcontractors received a zero dose, and more than 93% received less than 2 mSv.

AVERAGE INDIVIDUAL DOSE

The average dose received by AREVA employees due to exposure to ionizing radiation in the workplace is stable (1.22 mSv). The same applies for subcontractors, for whom the level is 2.5 times lower. The average dose of all workers (AREVA employees and subcontractors) is less than 1 mSv.

COLLECTIVE DOSE

The collective dose over a sliding 12-month period for all AREVA employees and subcontractors remains stable. The collective dose received by subcontractors represents less than a quarter of that of AREVA employees.

LINES OF IMPROVEMENT

PERPETUATE IMPROVEMENTS IN SERVICES AND MINING ACTIVITIES

The proactive actions taken in the Services Sector and Mining BU have returned positive results, but the trends noticed over the last two years reveal our difficulties in making these last. The results are the product of management's full involvement, but the challenge now is to make these initiatives part of our quality management systems, organization and operator behavior. The actions of the management teams must continue to ensure these objectives endure and remain a priority.

CONTROLLING DOSES DURING DISMANTLING WORK

The group's advanced installation clean-up and dismantling activities, particularly in France, are set to increase over the coming years. Certain significant events that occurred in 2006 demonstrated how important it is to be constantly vigilant during these operations, as well as the need for quality preparations. In particular, all preliminary analyses and pre-work provisions must be drawn up in coordination with the companies performing the work, by making use of their technical know-how and sharing our knowledge of installations and practices.

The radiological objectives during dismantling work must be clearly determined and shared among all internal and external workers.

IMPROVED RADIOLOGICAL CLEANLINESS

Managers must make the reduction of worker exposure in restricted access work areas an objective, by maintaining a high level of radiological cleanliness in them. This concerns both the clean-up of areas once there is any sign of local contamination, as well as evacuating any unnecessary irradiating material and regularly cleaning workstations. The General Inspectorate observed that these initiatives were part of day-to-day operations in some facilities, but in others only limited operations were carried out.

Monitoring events

The INES scale*

The INES (International Nuclear Event Scale) scale has been in application internationally since 1991. It is used to facilitate how the media and public perceive the severity of incidents and accidents affecting nuclear installations and the transportation of radioactive materials. Events are ranked from 0 to 7 in ascending order of severity.

		AREA OF IMPACT		
		OFF-SITE IMPACT	ON-SITE IMPACT	IMPACT ON DEFENCE IN DEPTH
7	MAJOR ACCIDENT	Major release: widespread health and environmental effects		
6	SERIOUS ACCIDENT	Significant release: likely to require full implementation of planned countermeasures		
5	ACCIDENT WITH OFF-SITE RISK	Limited release: likely to require partial implementation of planned countermeasures	Severe damage to reactor core/ radiological barriers	
4	ACCIDENT WITHOUT SIGNIFICANT OFF-SITE RISK	Minor release: public exposure of the order of prescribed limits	Significant damage to reactor core/radiological barriers/fatal exposure of a worker	
3	SERIOUS INCIDENT	Very small release: public exposure at a fraction of prescribed limits	Severe spread of contamination/ acute health effets to a worker	Near accident No safety layers remaining
2	INCIDENT		Significant spread of contamination/ overexposure of a worker	Incidents with significant failures in safety provisions
1	ANOMALY			Anomaly beyond the authorized operating regime
0	DEVIATION		No safety significance	

* Go to glossary page 32.

RESULTS

In 2006, there were 86 significant INES-classified events relating to nuclear safety, radiation protection or the transportation of radioactive material, including a level 2 event on AREVA NC's Cadarache site. These events had no impact on personnel, the public or the environment.

The number remained stable compared with 2005.

SEVERITY OF EVENTS

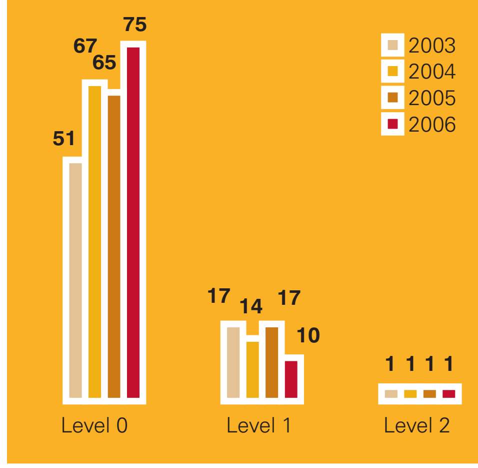
2006 saw a decline in level 1 INES events (10 compared with 17 in 2005). However, the number of level 0 INES events increased by the same amount.

At first this would seem to be encouraging, as it points to an overall reduction in the severity of events.

However, 2006 also witnessed an INES level 2 significant event. This took place in a facility of the CEA center at Cadarache, of which AREVA NC is the industrial operator.

In analyzing the context of certain events, the General Inspectorate observed that prevention instructions are not followed by workers, including experienced personnel, even though the preliminary risk analyses are carried out correctly and the instructions circulated and displayed. This is particularly the case for routine operations or when workers underestimate the risks involved. Despite only applying to certain one-off cases, this behavior (e.g. non-compliance with rules such as wearing individual protection equipment) should – given the potential consequences for personnel – be identified and corrected.

NUMBER OF REPORTED INCIDENTS AT THE GROUP'S NUCLEAR SITES



ANALYSIS AND PROCESSING OF EVENTS

Typological analyses of events show them to be largely caused by the human factor. Most entities are aware of the importance of this and have responded to varying degrees with initiatives, particularly training courses with the strong involvement of management teams.

The guide relating to the analysis made by the General Inspectorate in 2006 on significant events from the perspective of human and organizational factors is starting to be applied. Entities are therefore becoming acquainted with this type of analysis, the effectiveness of which relies greatly on the personnel carrying out the analysis having special competencies in this field. This is why training actions have been undertaken and should continue, with the entities involved sharing feedback.

EVENTS RELATING TO FIRE RISKS

Two events of the same type occurred in 2006 on the COMURHEX Pierrelatte site. Fires broke out as a result of an exothermal chemical reaction. Cloths soaked in nitric acid came into contact with gloves that had traces of grease on them, in a waste bag. The immediate corrective measures taken included replacing nitric acid as a decontamination agent with a product with a neutral fire risk. Neither of these events had any impact on personnel or the environment.

The General Inspectorate emphasizes the importance of keeping the automatic fire detection and fire protection systems of installations in permanent working order. Any identified fault in these systems should result in the introduction of compensatory measures. Failure to follow these fundamental fire protection rules could have serious consequences for personnel and the environment, as well as production tools.

Finally, the introduction of reflex action sheets on managing the ventilation of nuclear buildings in a fire situation is not always enough to control the complex range of phenomena involved, particularly the effects that altered ventilation has on a fire. The introduction of an analysis team to help the operating manager take ventilation decisions when a fire outbreak is confirmed has been developed on some sites, and helps improve effective fire-fighting.

FORMAL NOTICE BY THE NUCLEAR SAFETY AUTHORITY

The presence of several waste drums containing an isotopic abundance of Uranium 235 greater than 1%, the limit set by the decree authorizing the creation of the TU5 basic nuclear installation on AREVA NC's Pierrelatte site, was declared in June 2006 and classed as an INES level 1 event. The Nuclear Safety Authority gave the site three months' formal notice to introduce the necessary provisions to comply with the recommendations concerning the isotopic abundance of Uranium 235. Actions were taken by the site within this timeframe and the notice was lifted.

In October 2003, the COMURHEX Pierrelatte facility was given formal notice by the Nuclear Safety Authority to comply with the provisions of the order dated 31 December 1999 establishing the general technical regulations for preventing and limiting external risks resulting from the operation of French Nuclear Facilities. This notice was given in relation to the absence of any commitment to comply with regulatory provisions regarding confinement, fire compartmentalization and the fire resistance of structures. The provisions laid down in the action plan to regain compliance with the order in question were implemented within the required timeframe. The Nuclear Safety Authority lifted the notice in June 2006, provided the commitment be fulfilled to definitively close the uranium hexafluoride preparation French Nuclear Facilities before 2009.

LINES OF IMPROVEMENT

DETECTING AND ANALYZING NEAR-EVENTS

Most significant events are the product of several basic faults. The nuclear safety continuous improvement process is based on recording and analyzing these basic faults to optimize the technical and organizational corrective actions taken, as well as monitor their effectiveness. The process requires that entities' workers and management teams communicate well together and with the different operating, maintenance and risk control departments.

Identifying near-events and systematically analyzing and dealing with their causes is therefore at the very heart of improvement efforts to reduce the number and severity of significant events. The lessons learned from near-events can be used to get to their deep-rooted causes. In order to make improvements, entities need to set up a reliable deviation detection system, using feedback from all workers. In order to ensure such an initiative lasts over time, near-events and anomalies must be analyzed by designated personnel, who then relay the results of the analyses and the measures taken back to the workers who identified the deviations.

IMPROVED SHARING OF EVENT EXPERIENCE

Sharing experiences on events within a facility or entity is not always common practice in all AREVA entities. This often leads to individual initiatives that are not always consistent. An experience-sharing initiative was successfully undertaken on the Tricastin site.

There is still not enough sharing of nuclear safety and radiation protection events at group level, and this should be improved in 2007. The first step of this experience-sharing initiative includes the introduction of an events correspondents network on sites, as well as a tool for transferring and sharing technical information on events.

Criticality risk control

For the AREVA group, the risk of a criticality accident – i.e. an uncontrolled chain reaction in fissile material (uranium 235, plutonium) – exists in its fuel cycle plants, test reactors and during the transportation of material containing fissile radionuclides (fuel assemblies, waste, etc.) where the quantities of fissile material exceed critical mass.

The consequences of a criticality accident are generally negligible for the general public, but often very severe for any personnel in the vicinity. This risk must therefore be closely examined at every stage when processes involving fissile material in whatever form are established.

The most recent criticality accident in a fuel cycle installation happened in 1999 at the Tokaimura fuel fabrication plant in Japan. It caused the deaths of the two operators working closest to where the reaction occurred, and serious injuries to a third as a result of major absorbed doses. Significant doses were recorded within a 300-meter radius of the installation.

The accident led operators to be more vigilant about this risk, check that in-service prevention measures are properly applied, check operators' know-how and supplement this where necessary, and renew workers' awareness of the need to comply with operating provisions.

Seven years later, the inspections carried out regarding this risk on AREVA sites where fissile material is used, and the analyses of events or near-events concerning criticality/nuclear safety have revealed the need to give further reminders of the prevention principles and to strengthen check of the various operating provisions.

SAFETY/CRITICALITY EVENTS

Two significant events occurred in 2006 in facilities operated by AREVA, which led to a reduction in the established criticality accident margins.

The first involved the premature removal of a subcriticality control component from a cask transporting irradiated fuel elements during the unloading phase.

In the second, failure to weigh fissile material led to an excessive amount being loaded into a cask.

In both cases, the malfunctions were either due to negligence when performing the preliminary analyses or when applying the procedures relating to the operations, or to the absence of proper inspections of the operations.

However, the application of safety/criticality principles and the existing prevention barriers ensured these events did not affect personnel or the environment.

CRITICALITY RISK CONTROL PROVISIONS

Unlike reactor cores, nuclear fuel cycle installations do not have their own resources provided at the design stage to regulate or stop any uncontrolled chain reaction.

Critical excursion is a phenomenon that occurs quickly and of which there are few physical warning signs.

This is why the safety margins provided at the design stage that govern criticality risk control are particularly important. All instructions and requirements must therefore be strictly followed in order to ensure defense in depth.

A NUCLEAR SAFETY PRINCIPLE: AT LEAST ONE DOUBLE FAILURE

Limiting the occurrence of criticality accidents involves taking measures to ensure that these can only come about as the result of at least two independent and simultaneous failures. All types of failures in processes involving fissile materials are therefore examined: sensor malfunctions, equipment damage, environment changes (simply whether or not water is present can have a significant effect on the physics of the phenomenon), as well as in-service failures.

This principle therefore guarantees that there is always a significant margin, provided that the first malfunction is effectively detected. This principle applies not only in normal installation operating conditions, but also in degraded situations.

ROLE OF PRELIMINARY ANALYSIS

An installation approaching a critical state that can lead to an accident is particular in that few early warning signs will be directly perceptible by the operator.

It is therefore essential that all operations involving the presence or processing of fissile material undergo thorough nuclear safety analyses focusing directly on this risk. This rule applies in the design phase of new installations, but should also be applied whenever processes are changed, as well as during transient phases during maintenance work in dismantling operations, or simply during equipment down-time.

PREDICTING AND LIMITING THE CONSEQUENCES OF ACCIDENTS

Despite all the provisions made to predict and limit criticality accidents, it is nonetheless necessary to examine the potential consequences of these. To understand how a criticality accident could affect personnel and the environment, each facility must estimate its consequences and establish the resources enabling it to be minimized.

It is therefore necessary to draw up and test the procedures to apply to shelter personnel as quickly as possible or determine the location of specific detection devices. This equipment must be regularly tested to check its performance and reliability.

The risk of a criticality accident can therefore be controlled essentially by following during operation the aforementioned provisions and those established during the design phase and by preliminary analyses (to be performed by specially-qualified personnel before any changes to processes, equipment or procedures).

LINES OF IMPROVEMENT

OPERATORS' KNOWLEDGE OF RISKS

Criticality and the associated significant accident risks only concern activities that use or take place near fissile materials. This, as well as the difficulty in perceiving the physical phenomenon, calls for all operators to be properly informed in this area, in order for them to have the right reflexes and reactions before completing their activities. Training should also make operators fully aware of the consequences of criticality accidents. While training is essential for newly qualified operators, regular refresher courses should also be given to keep their know-how up to date.

The General Inspectorate noted that safety/criticality training is given to internal operators in workshops or facilities where this risk exists, but that refresher courses according to clearly-determined criteria are not systematically given. The activities carried out by external operators should also be identified to make sure they have the right competencies.

COMPLIANCE WITH PROCEDURES

Fissile material can only be handled according to predetermined procedures that have been validated by a competent person. In the case of standardized production activities, the experience of operators as well as installation designs incorporating criticality risks offer a true guaranty.

The General Inspectorate considers it essential for operators to be able to clearly identify to which specific actions of their activities criticality requirements apply, as well as the specific physical parameters involved in complying with these requirements.

Special attention should also be paid to dismantling activities, multi-activity production units or units that use evolving materials. Unplanned and unknown situations are more likely to occur during these types of operations. All operators should therefore ensure they apply existing procedures to the letter, in order to detect any non-compliant or unexpected configurations. Management of such situations should be accompanied by a nuclear safety analysis, and be in no way improvised. Operators' inquisitiveness is one of the primary ways that incidents are detected.

PROPER INSPECTION AT ALL STAGES

In all French Nuclear Facilities, checks must be carried out that procedures are being followed and nuclear safety parameters complied with. Checks should be even more rigorous and frequent where these concern criticality. The General Inspectorate observed that these inspections are generally performed by management within the installations concerned. Any drifts in the application of prevention rules, especially where these are identified by analyses of in-operation observations and events, must be followed by increased operator inspection and awareness.

During the preliminary analysis phases, identifying the complexity of physical criticality-related phenomena depends entirely on the competencies of the personnel specializing in this field. It is therefore essential that these preliminary nuclear safety analyses and the resulting operating procedures be validated by a competent criticality engineer. The personnel in charge of drafting these documents must be assisted by this criticality expert wherever fissile material is involved.

A specialist criticality engineer must also carry out or check operator training and participate in in-the-field operator inspection missions.

In the entities it inspected in France, the General Inspectorate observed that sites have a sufficient number of trained and competent criticality specialists. However, provisions should be made for replacing them, given the long qualification time needed.

→ The inspections that the General Inspectorate started on these topics in 2006 will continue over the first half of 2007 on the remaining group sites that use fissile material and within engineering subsidiaries.

Risk control during the transportation of radioactive and hazardous materials

For the AREVA group, controlling nuclear safety in the transportation of radioactive and hazardous material (safe design/production/maintenance of casks, reliability of transport operations, preparation for emergency interventions) is a strategic element in performing its fuel cycle activities.

An analysis of the significant events that took place in 2006 reveals nine transport-related events. All of these were classified INES level 0. The high proportion of events relating to internal transport activities and non-compliance with governmental regulations should also be noted.

In 2006, the General Inspectorate assessed the organizations and provisions set up to control activities relating to:
- preparing and dispatching radioactive or hazardous materials by AREVA sites,
- internal transport on nuclear sites,
- the design, production and maintenance of specific casks,
- organizing and performing national and international transportation operations.

RESULTS

The General Inspectorate noted very positive developments in the way off-site transport operations are controlled compared with the situation observed in the previous year's inspections.

The same cannot be said for on-site transportation activities.

Most sites have introduced an operational organization to perform transportation activities and respond to any event occurring during transport. These organizations, included directly or indirectly in management systems, offer a suitable response to regulatory requirements.

The quality of the sites' control over transportation activities is proportional to how well this is integrated into operational processes (allowance for nuclear safety requirements, personnel training, internal and external surveillance, regulatory monitoring, deviation processing, consistency with document references, etc.). The missions of the appointed Transport Safety Advisor (on sites where this requirement is applied) is also a key item in steering the transportation activity. Steering is even more effective where the Advisor's role is recognized by Management and operational managers.

LINES OF IMPROVEMENT

The main identified lines of improvement relate to:

- **Training**
  The various personnel categories involved in transportation must without exception be given training and refresher courses, whose effectiveness must be systematically assessed. Determining training plans and developing modules shared by all AREVA entities would be an efficient means of obtaining a base of guaranteed skills for all personnel concerned.
- **Subcontractor control**
  Nuclear safety requirements are not sufficiently put to paper in contractual documents for all transportation activities. These requirements need to be clearly laid down, particularly concerning keeping the consigner informed in case of an event during transportation.
- **Internal transportation**
  The requirements of the French inspection authorities relating to the internal transportation of radioactive material are still not being implemented in the same way across the sites, though considerable efforts have been made to apply the rules on the internal transportation of radioactive material. On certain other sites, this is still being done. As regards the compilation of package approval data, the General Inspectorate noted that the commitments scheduled by sites are not always met.
- **Transportation of hazardous material**
  Risk control is satisfactory in sites with predominantly chemical risks. In sites with predominantly nuclear risks, this activity needs to be documented in order to reach a similar level to that acquired in the field of the transportation of radioactive material.

Radioactive waste management

The basic principles to follow regarding waste are to minimize it at source, reprocess and package it when generated (to optimize the volumes placed into interim storage on-site) and remove it through disposal channels approved by Nuclear Safety Authorities.

Radioactive waste is generated in AREVA facilities during everyday operations, when dismantling decommissioned installations, or in the treatment of old waste that was unable to be treated when generated. This is essentially low- and medium-level technological waste, such as contaminated material and equipment, residues from effluent treatment, filters, resins, etc.

In addition to the aforementioned waste, AREVA also has temporary possession of the radioactive waste generated from the treatment of its customers' used fuel. This is primarily long-lived high-level waste that is returned to these customers after packaging.

In France, unlike other countries, there is no regulatory limit for free release radioactive waste. This notably influences the volumes of very low level waste stored, the process for removing this, its treatment cost and management (when there is currently no repository pathway).

SAFE WASTE MANAGEMENT

Safe waste management relies on:
– **thorough** waste identification,
– **safe** management operations, and
– **sustainable** control of its evolution.

Sites therefore need to introduce a process involving at least the following stages:
• identification (i.e. a snapshot) with the focus on thoroughness;
• characterization (precise knowledge of contents), especially the radionuclides and chemical components;
• establishing the applicable regulatory framework and proprietary regime;
• a thorough, up-to-date inventory of waste, scraps and by-products awaiting storage;
• the condition of the packaging that is expected to guarantee the non-dispersal of products;
• the interim storage safety conditions;
• establishing the approved recovery or repository pathways.

On French sites, safe waste management is also reliant on:
• the introduction of and compliance with waste zoning;
• removal to specific existing pathway;
• the safe interim storage of "pending" waste with no repository pathway.

The good practices identified include operators' widespread use of internal lead recycling. Extended across the three main contributors (CEA, EDF and AREVA), this translates as the annual recycling of up to 400 tons of lead (which are decontaminated by melting into ingots, which are then reshaped), according to the requirements of new site projects or equipment.

As regards the many types of waste whose physical, chemical or radiological characteristics prevent them from being disposed of through the existing pathway, the General Inspectorate considers that AREVA should pursue its actions with other nuclear operators and the inspection authority to find and use industrial solutions for dealing with this waste. In the meantime, sites should introduce measures to guarantee the identification, characterization and safe interim storage conditions of this waste. Here, the thorny issue of contaminated oils is a priority.

The waste correspondents' network run on the various sites has made it possible to share feedback from the different entities, to enable AREVA to make more homogenous allowance for existing or future waste management pathways. The sites need to continue investing in group-wide actions.

The General Inspectorate considers that the two main lines of improvement for 2007 are the continued improvement of nuclear safety culture, and the introduction of a process on Human and Organizational Factors.

In addition to the lines of improvement set out previously, the General Inspectorate considers that joint improvement actions should also be developed, carrying on from those already undertaken.

DEVELOPMENT OF A NUCLEAR SAFETY CULTURE

Achieving and maintaining a very high level of nuclear safety requires a true nuclear safety culture within entities.

In each entity, a commitment by the management team is essential for the nuclear safety culture to progress. This must translate as introducing organization principles and responsibility delegations based on a declared nuclear safety policy.

Operational line management has a key role in cascading the actions determined by managerial structures in the field.

Initiatives to improve nuclear safety culture have been introduced on most sites, particularly through training courses and dialog sessions between operating or maintenance workers.

The General Inspectorate considers it to be fundamental to pinpoint each operational entity's level of nuclear safety culture, detect any drifts therein, and understand the reasons for these.

In order to identify the lines of improvement regarding nuclear safety culture and detect deviations at an early stage, the General Inspectorate proposes that self-assessment actions on nuclear safety culture be deployed by managers at operating team level. These self-assessment tools will be determined and tested in volunteer entities in the second half of 2007.

HUMAN AND ORGANIZATIONAL FACTORS INITIATIVE

The actions taken in 2006 on allowing for human and organizational factors when analyzing events, sparked interest from various management groups. They also revealed the difficulties in deploying such initiatives, as well as the need to extend them beyond the fields of nuclear safety and radiation protection.

An initiative on human and organizational factors taking in the areas of occupational safety, health and the environment was set up. This should make it possible to improve our results by bringing to light all of the factors that influence and condition the quality of individual actions at work.

Within the framework of its inspection missions, the General Inspectorate shall perform inspections on the following topics in 2007, in line with the multi-year program approved by the Executive Board:
- **criticality risk control,**
- **service activities on customer sites (radiation protection),**
- **waste and effluent management.**

Furthermore, it shall continue to perform inspections on more general topics, such as fire risk control, nuclear safety and radiation protection culture, and emergency response.

GLOSSARY

ALARA
Acronym for As Low As Reasonably Achievable. This concept is used to maintain personnel exposure to ionizing radiation to as low as reasonably achievable, taking into account social and economic factors. Efforts to optimize dosimetry often bear the "ALARA" label.

ANDRA (AGENCE NATIONALE POUR LA GESTION DES DÉCHETS RADIOACTIFS)
French public industrial and commercial agency with over sight by the Ministries of Industry, Research and the Environment. ANDRA is a public service agency that operates independently of the waste generators.

DECOMMISSIONING
Term covering all of the phases following the shut-down of a nuclear or mining facility at the end of operations. These phases include the physical dismantling (deconstruction) and decontamination of non-reusable facilities and equipment.

DISPOSAL OF RADIOACTIVE WASTE
Radioactive waste management operation consisting of disposing the waste after it has been packaged, and without any intention of retrieving it, in a specially engineered area so as to ensure safety. This contrasts with storage, which is temporary.

DOSE
Unit of measure used to characterize human exposure to ionizing radiation. The term "dose" is often erroneously used in place of "dose equivalent".

- **Maximum individual dose:** the maximum dose received by an individual during a given reference period.
- **Average individual dose:** the average dose is the result of a calculation for a population of individuals and corresponds to the ratio of the collective dose to the number of individuals in the population.
- **Collective dose:** collective dose is always associated with a population of individuals and corresponds to the sum of individual doses received by each individual during a given period.
- **No-dose:** dose that is less than a threshold value corresponding to the smallest dose deemed statistically representative over the measurement period.

DOSIMETRY
An assessment or measurement method used to determine the radiation dose absorbed by a substance or an individual.

DYNAMIC CONTAINMENT
Measures taken to prevent the spread of contamination to the environment involving a continuous flow of air between two areas. The air flows from an area with a low contamination risk towards an area with a higher contamination risk, thus preventing the spread of radioactive materials.

EPR (EVOLUTIONARY POWER REACTOR)
New generation pressurized water reactor with 1,600 MWe of power.

EXPOSURE
Exposure of an organism to a source of radiation, characterized by the dose received.

- **External exposure:** exposure from a radiation source outside the organism.
- **Internal exposure:** exposure from a radiation source inside the organism.

GLOVE BOX
An enclosure in which equipment or materials can be handled in isolation from the operator. Handling is done with gloves attached in leakproof manner to openings in the wall of the enclosure. The enclosure is generally kept at slightly negative pressure to contain radioactive materials.

INTERNATIONAL ATOMIC ENERGIE AGENCY (IAEA)
The IAEA is one of the autonomous organizations affiliated with the United Nations. Its role is to increase the contribution of civilian atomic energy to international peace and prosperity, and to ensure that it is used for peaceful purposes.

INB (INSTALLATIONS NUCLÉAIRES DE BASE)
Licensed nuclear facilities where nuclear materials are used in accordance with requirements defined by law 2006-686 of 13 June 2006.

INES (INTERNATIONAL NUCLEAR EVENT SCALE)
International scale used to define the seriousness of an event at a nuclear facility. It was designed by an international group of experts under the aegis of the International Atomic Energy Agency (IAEA) and the Nuclear Energy Agency (NEA) of the Organization for Economic Cooperation and Development (OECD). It was established at the international level in 1991. Like scales used for earthquakes or avalanches, the INES is a tool for providing information to the media and the general public.

IRSN (INSTITUT DE RADIOPROTECTION ET DE SÛRETÉ NUCLÉAIRE)
The French institute for radiation protection and nuclear safety, a public industrial and commercial agency whose mission, in particular, is to conduct research and assessments in the fields of nuclear safety, protection of people and the environment from ionizing radiation, and nuclear materials safeguards.

MILLISIEVERT
Submultiple of the Sievert, a unit of measurement for dose. 1 mSv = 1/1,000 of a Sv. The Sievert measures the effects of a given quantity of energy in the form of ionizing radiation absorbed by a mass of living matter.

NATURAL URANIUM (NAT U)
Naturally radioactive element present in a variety of minerals, particularly pitchblende. Natural uranium is a mixture of 99.28% of fertile ^{238}U and 0.71% of fissile ^{235}U.

NUCLEAR SAFETY
In the nuclear industry, nuclear safety encompasses all of the measures taken at each stage of the design, construction, operation and final shutdown of a facility to ensure operational safety, prevent incidents, and limit their impact.

RADIATION PROTECTION
Term commonly used to designate the branch of nuclear physics concerned with protecting people from ionizing radiation (also referred to as "health physics"). By extension, the term "radiation protection" covers all of the health measures taken to protect the health of members of the public and workers from such radiation and to comply with laws and regulations.

RADIFEROUS WASTE
Waste containing radium isotopes.

RADIOACTIVE WASTE
Waste – i.e., any residue from a production, conversion or utilization process, or any material or movable property for which its owner has no further use – designated as "radioactive" is waste to which radiation protection rules apply. In France, there are five major categories of radioactive waste, according to available or planned processing and disposition methods, which are classified by level of radioactivity and half life.

- **Very low-level waste (VLLW):** this waste comes mainly from the decommissioning of nuclear facilities and plant sites that use low-level radioactive materials in their production operations.
- **Short-lived low- and medium-level waste (SL-L/MLW):** most of this waste, including items such as contaminated gloves, filters and resins, comes from routine nuclear facility operations.
- **Long-lived low-level waste (LL-LLW):** this waste consists largely of radiferous waste and of graphite waste from the natural uranium gas graphite reactors (NUGG), which are now shut down.
- **Long-lived medium-level waste (LL-MLW):** this waste consists of residues from the operation of nuclear fuel fabrication plants, research centers, and treatment plants for used fuel from nuclear power plants.
- **Long-lived high-level waste (LL-HLW):** this waste comes exclusively from final waste separation during used fuel treatment and is vitrified.

RADIOACTIVITY
Emission by a chemical element of electromagnetic waves and/or particles caused by a change in its nucleus. Emission can be spontaneous (natural radioactivity of certain unstable atoms) or induced (artificial radioactivity).

Radioactivity has several forms:

- emission of alpha particles (combination of 2 protons and 2 neutrons), called "alpha radiation".

– The particles making up alpha radiation are helium 4 nuclei that are highly ionizing but not very penetrating. A single sheet of paper stops them;

- emission of electrons, known as "beta radiation".

– The particles making up beta radiation are electrons with a negative or positive charge. They can be stopped by a few meters of air or a single sheet of aluminum foil;

- emission of electromagnetic waves, known as "gamma radiation".

– Electromagnetic radiation similar to light and Xrays. Thick, compact materials (concrete, lead) are needed to stop it.

All of these different types of radiation are grouped together under the general heading of "ionizing radiation".

The radioactivity of an isolated quantity of an element gradually decreases over time as the unstable nuclei dissipate. The half-life is the time required for the radioactivity of a radioactive substance to decrease by half.

SAFETY CULTURE
Characteristics and attitudes of individuals or organizations which combine to make matters pertaining to nuclear safety a priority so that they are given the attention they deserve due to their importance.

STORAGE
Temporary storage.

URANIUM
Chemical element with atomic number 92 and atomic symbol U, which has three natural isotopes: ^{234}U, ^{235}U and ^{238}U. The only naturally occurring fissile nuclide is ^{235}U, a property that makes it useful as a source of energy.

WASTE ZONING
Zoning of areas in a nuclear facility to separate areas containing conventional, non-nuclear waste from those containing nuclear waste, which must be sent only to specialized processing systems and then to storage or disposal sites

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