

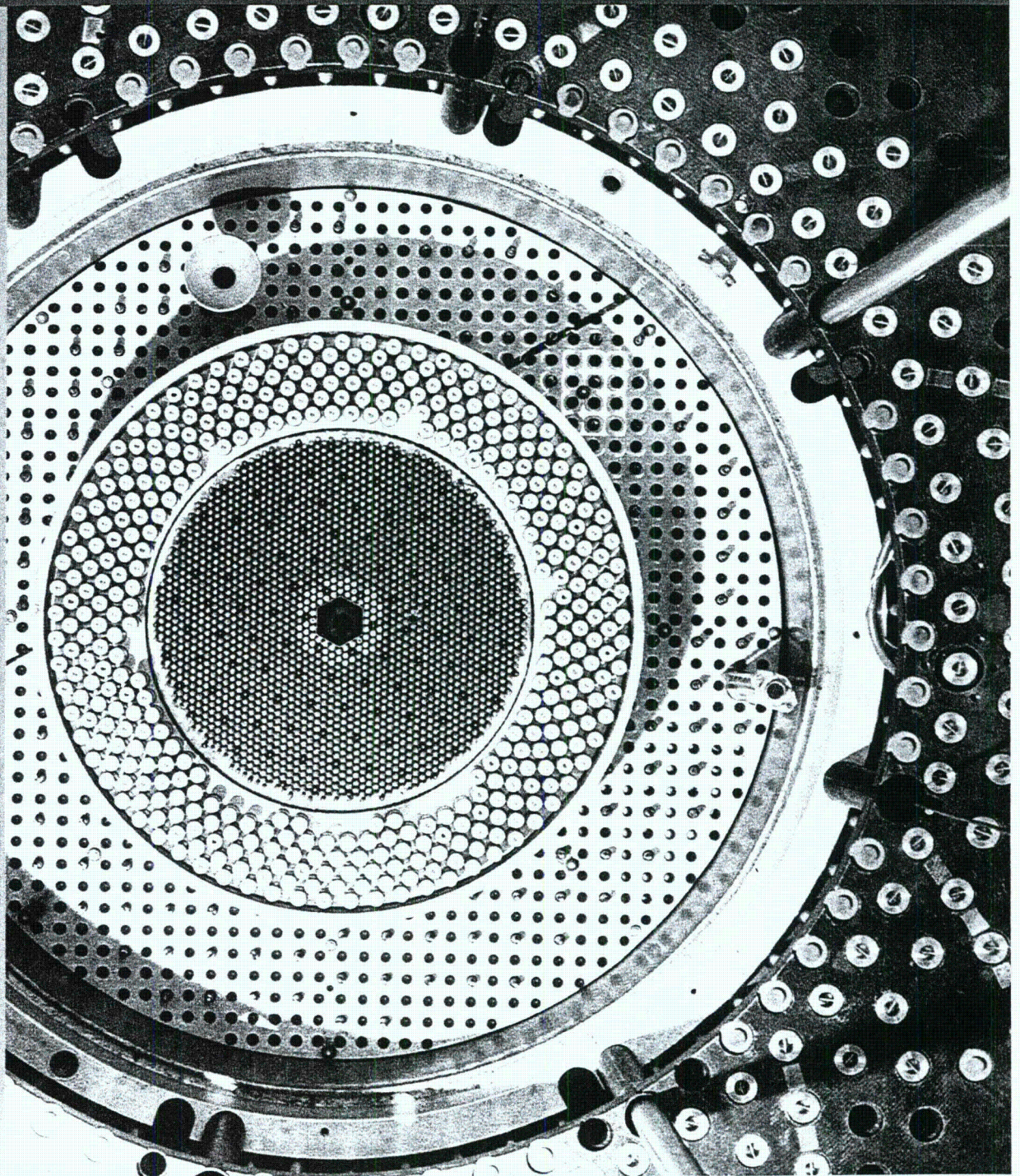


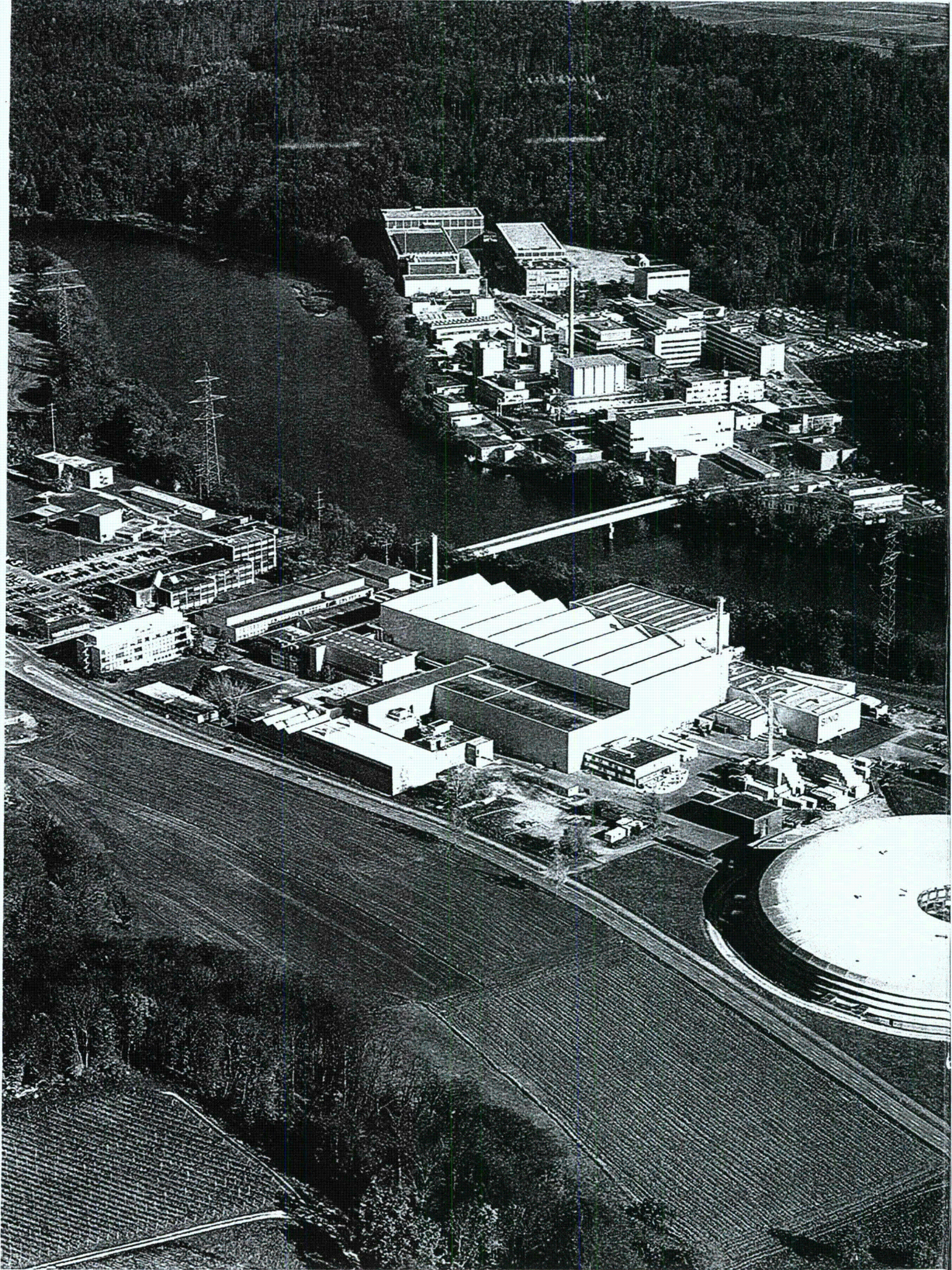
Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra


Swiss Federal Nuclear Safety Inspectorate ENSI

156

THE REGULATORY AUTHORITY ENSI







REPORTS DIRECTLY TO THE CONFEDERATION

ENSI, the Swiss Federal Nuclear Safety Inspectorate is the national regulatory authority with responsibility for nuclear energy. It is the successor body to HSK from whom it took over on 1 January 2009. As such, ENSI has taken on both the responsibilities and the staff of the former HSK. It is an independent body constituted under public law – similar for example to SUVA, the Swiss National Accident Insurance Fund. It is currently located in Würenlingen but from 2010 its main offices will be in Brugg in the canton of Aargau.

ENSI has responsibility for the supervision of Swiss nuclear facilities, which includes the nuclear power plants, the interim storage facilities for radioactive waste and the nuclear research facilities at the Paul Scherrer Institute in Villigen, the Swiss Federal Institute of Technology in Lausanne and the University of Basel. Its regulatory remit covers the entire life of a facility, i.e. from initial project, through to operation and final decommissioning including the disposal of radioactive waste. It also includes the protection of staff and public from the effects of radiation, sabotage and terrorism. In addition, ENSI deals with the transport of radioactive materials to and from nuclear facilities and with ongoing investigations to identify a suitable location for the deep geological storage of radioactive waste.



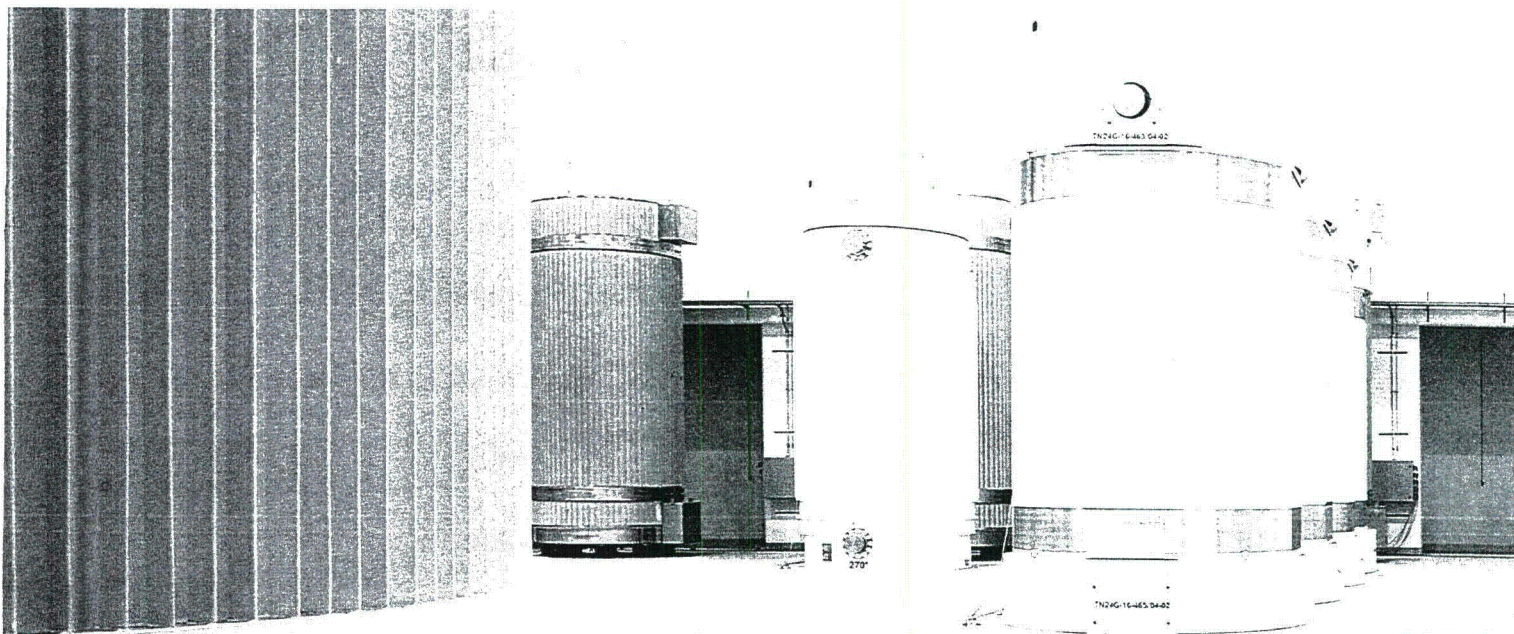
ACTS ON BEHALF OF THE SWISS PEOPLE

Swiss nuclear facilities, including the future deep geological repository for radioactive waste must ensure that radioactivity is not a risk to either humans or the environment. It is ENSI's role to enforce this statutory requirement and make sure that nuclear facilities and their operation are safe. ENSI is an independent public regulatory body acting on behalf of the Swiss people. It monitors the activities of licensees to make sure that they discharge their responsibilities with regard to the safe operation and condition of nuclear facilities. If there are shortcomings that could affect safety, ENSI must intervene at an early stage before they can represent a risk to humans. In such cases, it may impose certain conditions, require the introduction of appropriate measures or if necessary order a temporary or permanent shutdown.

APPLIES STATE OF THE ART IN SCIENCE AND TECHNOLOGY

ENSI supports research into nuclear safety and is represented on more than 70 international committees and specialist groups involved in the safety of nuclear energy. It is an active participant in efforts to improve international safety standards. Through its network of contacts, ENSI remains at the cutting edge of developments and this global experience in the use of nuclear energy feeds into its regulatory activities. ENSI attaches great importance to expanding and sharing its knowledge base and is a main point of contact for issues relating to the safe use of nuclear energy.





RESPONSIBILITIES

ENSI has split its remit into two main areas: installation assessment and operation surveillance.

In its **installation assessment**, it focuses on the following areas:

PRINCIPLES AND GUIDELINES

The inspection and surveillance of nuclear facilities is based on the legislative framework, guidelines and scientific principles, all of which clearly identify the safety requirements and criteria applied by ENSI in its assessments.

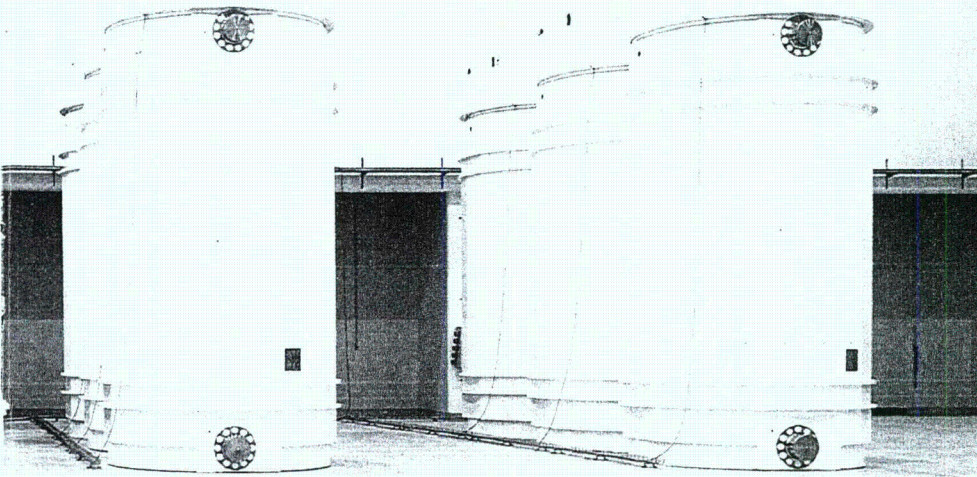
ENSI modifies these principles and guidelines whenever necessary in order to reflect developments in science and technology. Inter alia, the guidelines stipulate the radiological protection objectives for the operation of nuclear facilities, regulate the reporting requirements for the operation and organisation of nuclear power plants and also specify the criteria for the deep geological repositories.

EXPERTISES

ENSI produces a safety report whenever licensees of nuclear facilities submit applications that go beyond the scope of their existing operating license; for example, ENSI assesses the periodic safety review conducted by all nuclear power plants and issues reports on its findings together with any associated requirements. The safety reports issued by ENSI provide important evidence, which will feed into the licensing procedure for new nuclear power plants and the deep geological repositories.

PERMITS

ENSI also deals with applications to modify nuclear facilities covered by an existing operating license and if satisfied will issue the relevant permit, e.g. applications for modifications to components or systems classed as relevant to safety or changes to technical specifications.



In its **operation surveillance**, it focuses on the following areas:

CONTROL, INSPECTION AND CERTIFICATION

As part of its remit to monitor nuclear facilities, including their organisation, ENSI checks reports issued by licensees, holds periodic regulatory meetings and conducts local inspections. If staff are to be appointed to positions in nuclear facilities of relevance to safety, ENSI only approves those with the required skills and training.

MAINTENANCE

Every summer, nuclear power plants have a maintenance period lasting several weeks during which repairs and servicing are carried out and fuel changed. ENSI is actively involved in the maintenance shutdown process and supervises the operations.

MONITORING OF RADIOLOGICAL PROTECTION

In order to protect staff, public and the environment, ENSI monitors compliance with radiological protection requirements and dose limits. It monitors radioactivity releases from nuclear facilities and compliance with maximum release limits and then calculates the exposure to radiation experienced by the general public and the staff of a facility.

REMOTE MONITORING AND FORECASTS

ENSI operates an automatic system for each nuclear power plant that monitors dose rates and transmits the results back to ENSI. These measurements are used for evidence purposes and if an incident were to occur, the data would allow ENSI to predict the way it might develop and how and where radioactivity might be discharged into the environment.

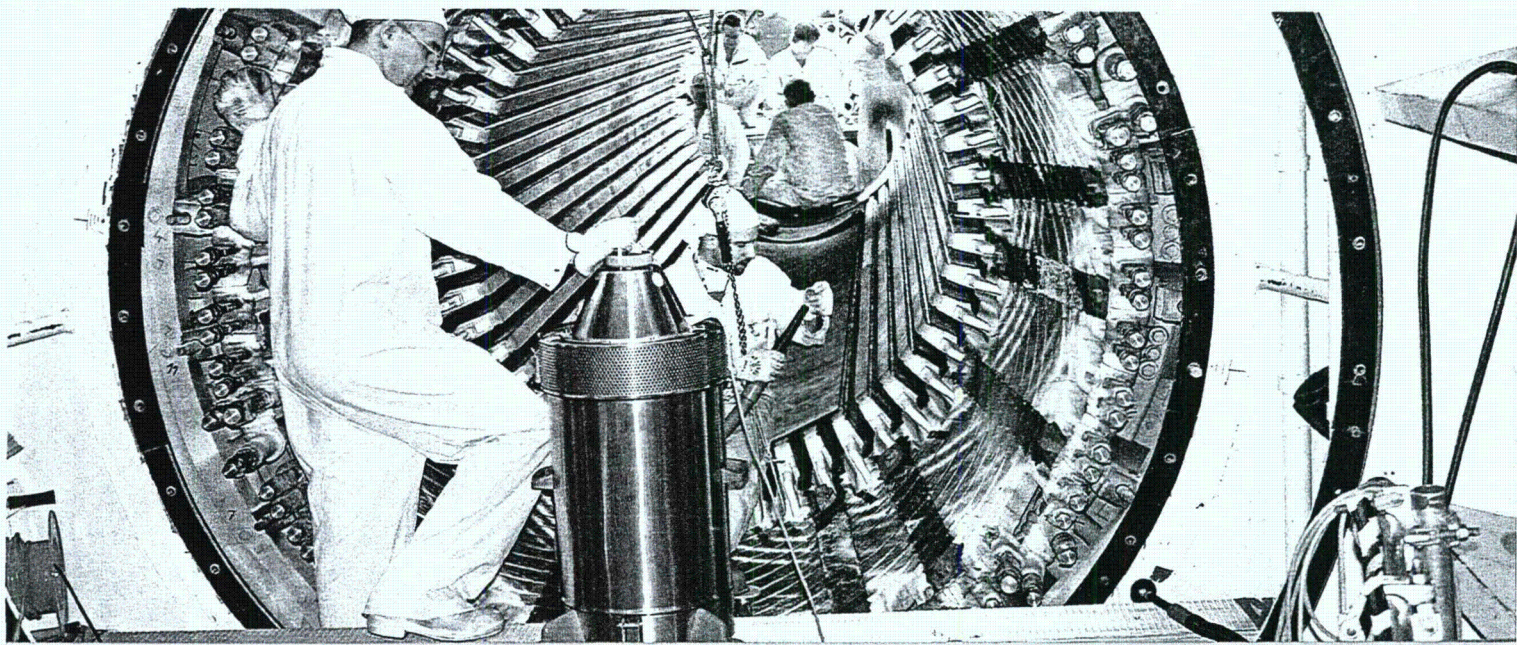
RESPONSIBILITIES

Installation assessments

- Principles and guidelines
- Expertises
- Permits

Operation surveillance

- Control, inspection and certification
- Maintenance
- Monitoring of radiological protection
- Remote monitoring and forecasts
- Incident processing
- Emergency preparedness
- Safety assessment



INCIDENT PROCESSING

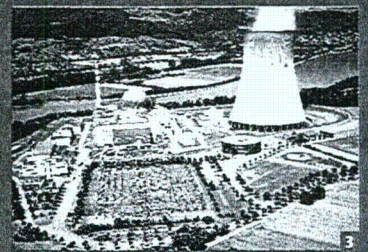
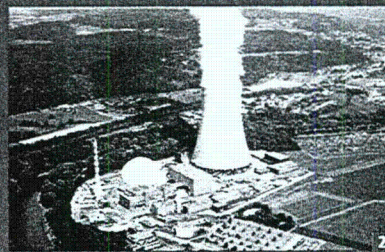
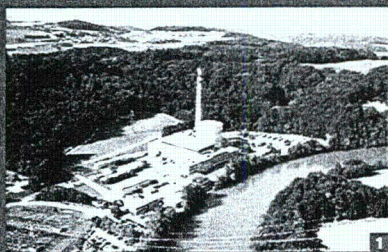
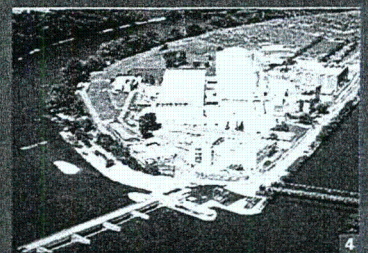
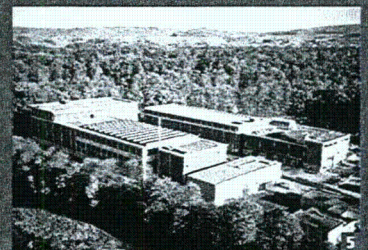
Incidents in both Swiss and foreign nuclear facilities are subject to systematic assessments in terms of their relevance to nuclear safety. In assessing the measures taken by licensees, ENSI can also determine whether findings are applicable to other nuclear facilities in Switzerland and if necessary, require improvements.

EMERGENCY PREPAREDNESS

ENSI has its own emergency organisation and in the event of an incident in a nuclear facility, it can provide a rapid, scientifically sound, independent assessment of the situation. It is also a member of the national system set up to deal with serious nuclear accidents that includes NEOC, the National Emergency Operations Centre and LAR, the Steering Committee on Radioactivity.

SAFETY ASSESSMENT

ENSI collates the data collected each year and produces a comprehensive safety assessment. This is used to determine what measures are required and also feeds into its own regulatory planning. By publishing Annual Reports on the safety of nuclear facilities, radiological protection and the results of operating experience and its own research, ENSI discharges its responsibilities to the public.



1 MÜHLEBERG NUCLEAR POWER PLANT, 2 GÖSGEN NUCLEAR POWER PLANT, 3 LEIBSTADT NUCLEAR POWER PLANT, 4 BEZNAU NUCLEAR POWER PLANT, 5 PSI AND ZWILAG

YESTERDAY

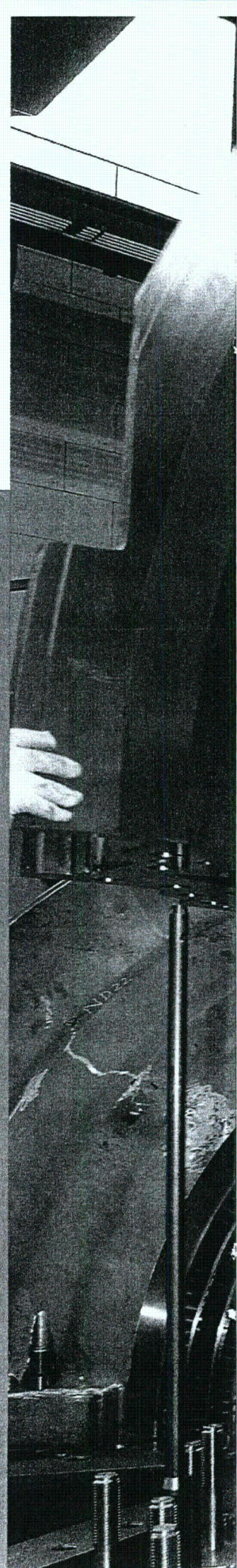
HISTORY OF NUCLEAR REGULATION IN SWITZERLAND

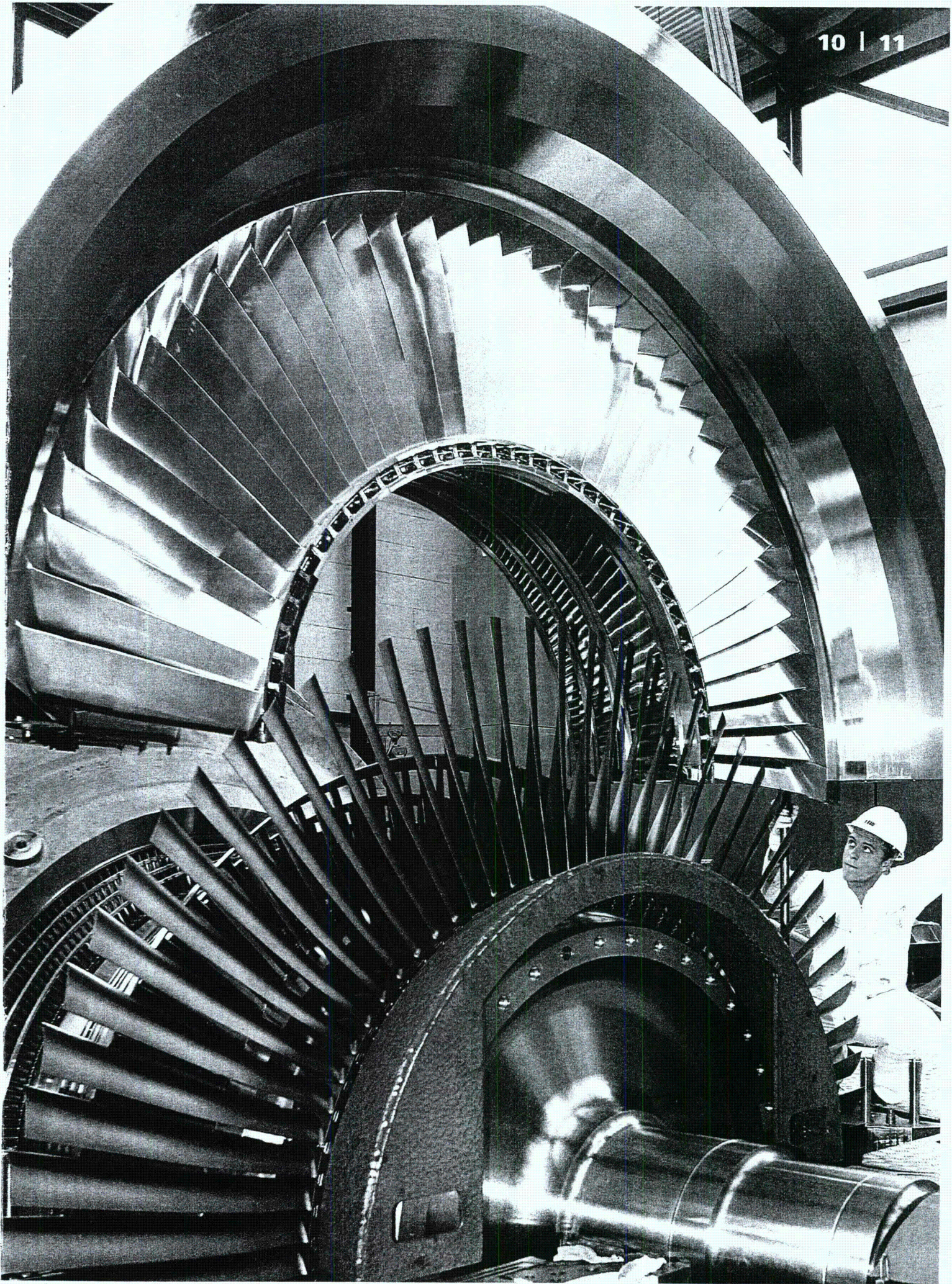
The Commission for the Safety of Nuclear Facilities (KSA) was the first nuclear regulator in Switzerland. KSA was set up in 1960 and between then and 1982 the secretariat of the Commission evolved in several stages into an independent authority – ASK, the Department for the Safety of Nuclear Facilities. In a regulatory ordinance published in 1982, the Federal Council defined the responsibilities and duties of the regulatory body – by this time known as HSK, the Swiss Federal Nuclear Safety Inspectorate. Until the end of 2008, HSK was a part of SFOE, the Swiss Federal Office of Energy (SFOE).

The fact that HSK, the body responsible for safety, reported directly to the Swiss Federal Office of Energy, the body responsible for energy policy and promotion was in contravention of the independence stipulated in both the Swiss Nuclear Energy Act of 2005 and the international Convention on Nuclear Safety.

The ENSI Act, the legislation governing the Swiss Federal Nuclear Safety Inspectorate was passed in 2007. It created the statutory framework for separating HSK from SFOE.

Independence was achieved on the 1 January 2009 when ENSI came into being as an authority constituted under public law. ENSI itself is supervised by an independent body, the ENSI Board who is elected by the Federal Council and reports directly to the latter.





TODAY

INTERNATIONAL SPECIALIST EXPERTISE

ENSI has a broad remit and this is reflected in the diversity of professions represented amongst its approximately 100 staff. Two-thirds of staff are graduates in a technical or scientific discipline, including mechanical, electrical and civil engineers, physicists, chemists, geologists, psychologists, etc.

The results of research supported by ENSI in the fields of reactor safety, radiological protection, the disposal of radioactive waste and also human behaviour, organisation and safety culture feed into its regulatory activities and work to develop its guidelines and recommendations. At the same time, ENSI staff benefit professionally from the exchange of ideas with experts from around the world. Cooperation with foreign regulatory bodies combined with rigorous training and development are important tools in ensuring that ENSI discharges its duties on behalf of the public in a responsible way. ENSI's professional competence is recognised internationally.

FACILITIES SUPERVISED BY ENSI:

- Beznau nuclear power plant
- Mühleberg nuclear power plant
- Gösgen nuclear power plant
- Leibstadt nuclear power plant
- Nuclear facilities, including the research reactor at the Paul Scherrer Institute (PSI)
- Research reactor at the Swiss Federal Institute of Technology in Lausanne (EPFL)
- Research reactor at the University of Basel
- ZWILAG, the central interim storage facility for radioactive waste in Würenlingen
- Transport of nuclear materials from and to nuclear facilities
- Processing facilities for radioactive waste
- Preparatory work for the deep geological storage of radioactive waste



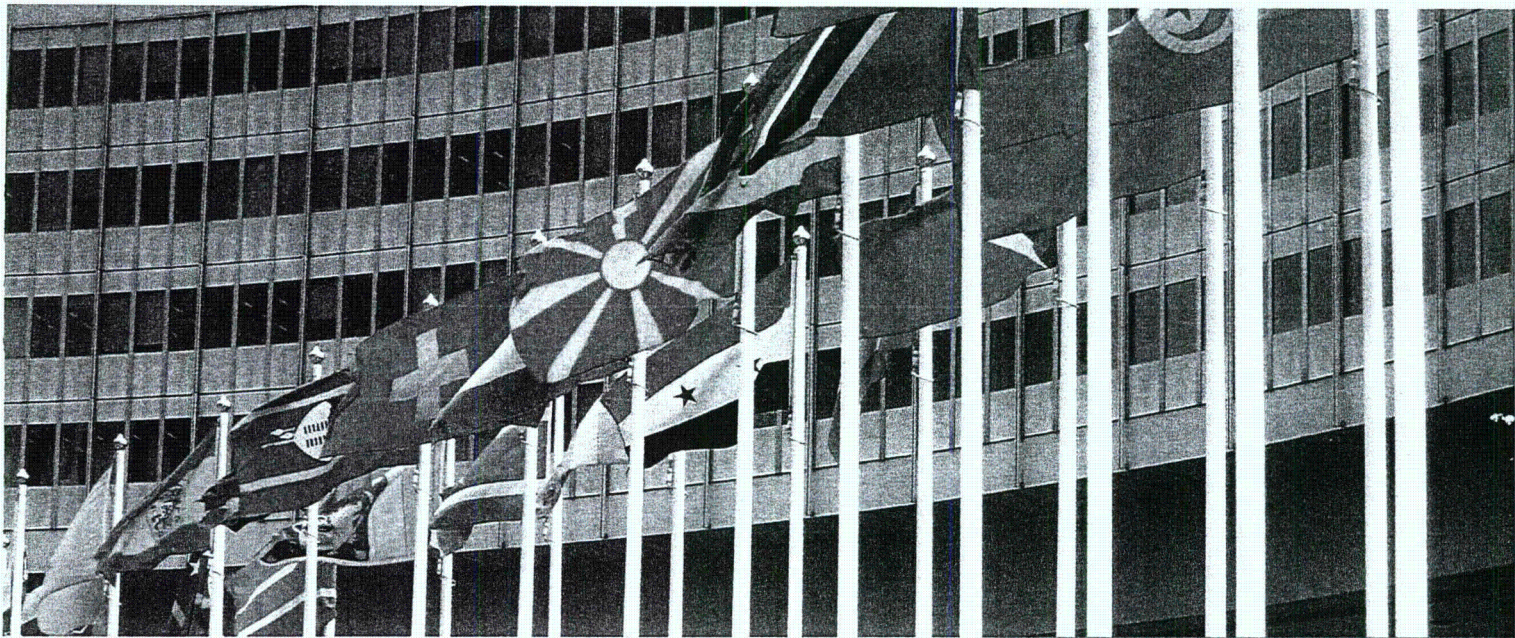
MEMBERS OF THE ENSI BOARD:

- 1 Dr. Peter Hufschmied (Chairman), Dipl. Ing. Swiss Federal Institute of Technology
- 2 Dr. Anne Eckhardt Scheck (Vice Chairman), bio-physicist
- 3 Dr. Hans-Jürgen Pfeiffer, physicist
- 4 Prof. Dr. Horst-Michael Prasser, Professor of Nuclear Energy Systems at the Swiss Federal Institute of Technology in Zurich
- 5 Jürg V. Schmid, pilot and safety expert
- 6 Pierre Steiner, electrical engineer

MEMBERS OF THE MANAGEMENT:

- Dr. Ulrich Schmocker (Director) 1
- Dr. Georg Schwarz (1. Dep. Director) 2
- Dr. Peter Flury (2. Dep. Director) 3
- Dr. Georges Pillier 4
- Dr. Hans Wanner 5
- Jean-Claude Veyre 6





NATIONAL AND INTERNATIONAL CONTACTS

ENSI maintains regular contact with the following organisations in Switzerland:

- Department of the Environment, Transport, Energy and Communications (DETEC)
- Swiss Federal Office of Energy (SFOE)
- Department of Radiological Protection at the Federal Office of Public Health (FOPH)
- Various Federal committees, including the Commission for ABC Protection (KomABC), Commission for Nuclear Safety (KNS) and the Commission for Nuclear Waste Disposal (KNE)
- National Emergency Operations Centre (NEOC)
- Specific research groups at the Paul Scherrer Institute (PSI)
- Facilities/licensees subject to regulation
- Cantonal authorities
- Organisations such as those involved in environmental protection
- Media and the public

ENSI maintains regular contact with the following global organisations:

- International Atomic Energy Agency (IAEA)
- Nuclear Energy Agency (OECD/NEA)
- Bilateral contact between Switzerland and its neighbours, the USA and other countries with nuclear programmes
- Western European Nuclear Regulators' Association (WENRA)

SOURCE

Front-page and pages 2/3 PSI

p. 4 Catherine Wenger

p. 5 ImagePoint.biz

pp. 6/7 Luca Zanier

p. 8 KKL

p. 9 KKL, KKM, KKB, KKG, PSI, Zwilag,

<http://de.wikipedia.org/wiki/Schweiz>

pp. 10/11 KKM

pp. 12/13 ENSI

pp. 14/15 ENSI

TOMORROW

FUTURE CHALLENGES

ENSI faces several important challenges in the field of nuclear regulation. The existing nuclear power plants are ageing but this cannot be allowed to compromise safety. Ageing phenomena must be identified at an early stage and if necessary safety measures must be introduced by the relevant plants. In the past, facilities have used retrofit techniques together with operational and organisational safety improvements and licensees must continue to act accordingly as required. Cost pressures on industry must never be allowed to reduce nuclear safety. We know that humans themselves are an important factor in the safety of nuclear energy. This means that the future regulatory activities of ENSI must pay particular attention to assessing the safety culture of nuclear facilities.

The Sectoral Plan for a deep geological repository lays down the procedure for selecting a suitable location for the deep geological repository required in Switzerland for radioactive waste and as such represents a solution to the issue of disposal – a process that has been stalled for a considerable time. As the authority responsible for the safety review and assessment of potential locations, ENSI is a crucial player in the Sectoral Plan procedure.

A further challenge, particularly in terms of personnel, is the planned construction of new nuclear power plants in Switzerland. The licensing procedure and the subsequent construction and operation of nuclear power plants will require additional resources. Well-trained specialists in the field of nuclear energy are becoming a rarity. As a result, ENSI has used its formation on 1.1.2009 to offer even more attractive working conditions to its staff. When it relocates to Brugg at the beginning of 2010, it will have modern and easily accessible offices. This will allow it to create the climate required to recruit sufficient competent specialists capable of dealing with future challenges.

Eidgenössisches Nuklearsicherheitsinspektorat ENSI, CH-5232 Villigen-ENSI
phone +41(0)56 310 38 11, Fax +41(0)56 310 39 95 and +41(0)56 310 39 07
info@ensi.ch, www.ensi.ch

New address from spring 2010: Industriestrasse 19, CH-5200 Brugg