

G8 Nuclear Safety and Security Group (NSSG)

At the Kananaskis Summit in 2002, the G8 Leaders agreed to establish a G8 Nuclear Safety and Security Group (NSSG). The NSSG will provide technically informed, strategic policy advice on issues that could impact safety and security in the peaceful use of nuclear energy, in close cooperation with multilateral organizations, including the IAEA.

Italy is currently chairing the work of the NSSG. During the G8 Summit held in July 2009 in Italy, the NSSG submitted its report to the G8 Leaders. Selected highlights from the report are as follows.

The NSSG welcomed the strengthening of an internationally acceptable global nuclear safety and security framework and will continue to further promote its development.

The NSSG further promotes the exchange of knowledge and expertise on how to address seismic issues for nuclear power plants, taking into consideration recent experience and lessons learned. The NSSG welcomed the efforts of the IAEA to review and update seismic safety standards and support the newly established International Seismic Safety Centre (ISSC).

The NSSG continues to promote international instruments on nuclear safety and security, including the Convention on Nuclear Safety, the Joint Convention and the amended Convention on the Physical Protection of Nuclear Material. The NSSG also called upon all States to join and implement, as appropriate, international safety and security conventions.



The NSSG encouraged broad commitment to and implementation of the IAEA Code of Conduct on the Safety and Security of Radioactive Sources, as well as the IAEA Guidance on the Import and Export of Radioactive Sources. The NSSG continues to promote IAEA nuclear safety standards and security guidance, and highlights the importance and effectiveness of IAEA services.

The NSSG continues to follow ongoing activities to develop the Global Nuclear Safety and Security Network (GNSSN), which are based on the co-operation of international organizations, particularly the IAEA and the Organisation for Economic Co-operation and Development/Nuclear Energy Agency (OECD-NEA) and the Member States of those organizations. The enhancement by the IAEA of the GNSSN is expected to contribute to maintaining and consolidating competence in nuclear safety and security matters, and to promote the sharing of experience and best practices.

Uranium Production Site Appraisal Team (UPSAT)

At the 2008 IAEA General Conference, a decision was made to launch a service for the safety of the uranium production cycle, the Uranium Production Site Appraisal Team (UPSAT). The UPSAT service helps to facilitate the exchange of knowledge and experience to enhance overall safety and efficiency in existing and developing uranium production activities. An UPSAT mission is a peer review based on the IAEA Safety Standards and conducted by a team of international experts.

The Brazilian Commission for Nuclear Energy has requested the IAEA to conduct its first Uranium Production Site Appraisal Team (UPSAT) mission to the Industrias Nucleares do Brasil (INB) Uranium mines at Caetité. The appraisal will cover both present activities and future

development. The UPSAT mission to the site will take place in October and the final report is expected for the end of the year. A picture of the Caetité open pit is below.



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Current safety and security activities and developments taking place in the Department of Nuclear Safety and Security

<http://www.iaea.org/OurWork/ST/NS>

Nuclear Security Report 2009

At the request of the General Conference, the IAEA has again prepared an Annual Report highlighting significant accomplishments of the prior year in the area of nuclear security and establishing goals and priorities for the year to come. The draft report entitled, "Nuclear Security Report 2009." will be presented to the Board of Governors and General Conference in September 2009.

The 2009 report contains details of the IAEA's major achievements in the area of nuclear security and highlights achievements related to the IAEA Nuclear Security Series, the Illicit Database (ITDB) Programme, Integrated Nuclear Security Support Plans (INSSPs), nuclear security missions, education and training, among others.

In addition to the 2009 report, the IAEA has also produced a review of the implementation of the IAEA Nuclear Security Plan 2006-2009. This document describes the results obtained and lessons learned from implementing the Plan. During the last three and a half years, the IAEA published ten guidance documents; the human resource programme trained nearly 8000 persons from all regions, significantly contributing to capacity building and to improved nuclear security systems in these States; a large number of vulnerable radioactive sources were brought into safe and secure storage, some of them repatriated to the supplying State; the repatriation of a total of 331.3 kg of highly enriched research reactor fuel to the supplying States was facilitated; physical protection arrangements were strengthened at 64 locations in 25 States; improvements were made to functions at crossing points in 56 States; and a major programme of support to ensure nuclear security at major public events – including one World

Building Sustainable Nuclear Security

Nuclear Security Report 2009



Cup Final and the 2008 Olympic Games – was developed and deployed in five States.

In implementing the Plan, the IAEA learned a number of important lessons, some applicable to States, others applicable at the regional and international levels and to the Agency. These will be incorporated into the next Plan for 2010 – 2013. The primary conclusion is that while activities carried out under the Nuclear Security Plan have contributed significantly to national efforts to improve nuclear security, there is a long way before the goals for global nuclear security have been reached. The threat of a nuclear security event clearly indicates that there is no room for complacency. The work to achieve and maintain a high level of nuclear security is considered work in progress requiring continued, sustained review.

New Entrant Nuclear Power Programmes

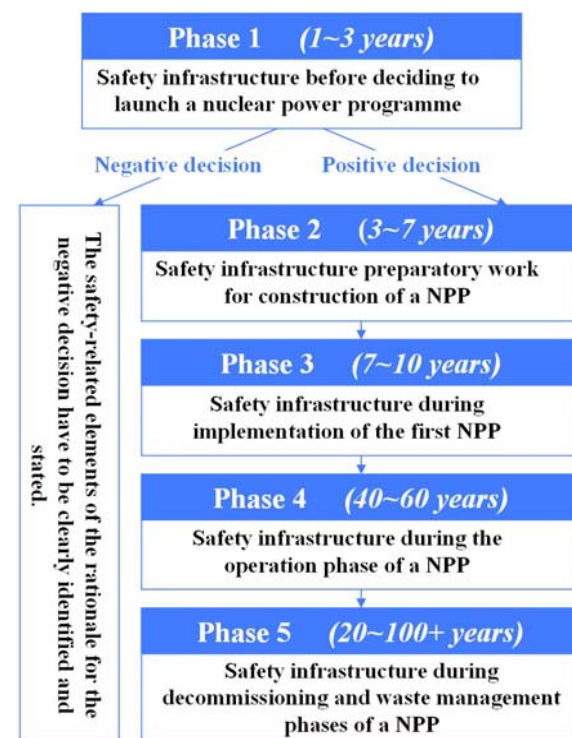
Safety Guide on the Establishment of the Safety Infrastructure (DS424)



principles is essential to ensure the basis for the future safe operation of a nuclear power plant.

It has been recognized by the international community that a **considerable period of time is necessary to acquire competences and a strong safety culture** before operating a nuclear power plant. While prime responsibility for safety must rest with the operating organization, the State has the responsibility, upon committing itself for many years to a nuclear power programme which demands significant investment, to create a robust framework for nuclear safety. This responsibility is incumbent to those who live and work inside the State and **cannot be outsourced**. Establishing a sustainable safety infrastructure is a long process, and it has been internationally acknowledged that a **period of 15 years under optimized** conditions would be generally needed between the first consideration of nuclear power as part of the national energy strategy and the operation of the first nuclear power plant.

The progressive development of the National Safety Infrastructure



In 2007, the IAEA published a brochure entitled “Considerations to Launch a Nuclear Power Programme” and a report entitled “Milestones in the development of a national infrastructure for nuclear power”. In 2008, consistent with these publications, a report was published by the International Nuclear Safety Group on “Nuclear Safety Infrastructure for a National Nuclear Power Programme supported by the IAEA Fundamental Safety Principles” (INSAG-22). This report defines **Nuclear Safety Infrastructure** as the set of institutional, organizational and

technical elements and conditions established in a State to provide a sound foundation for ensuring a sustainable high level of nuclear safety. In this report, the lifetime of a nuclear power plant is divided into **5 ‘Phases’** from a nuclear safety standpoint and indicative average durations are provided for each of these Phases. The Safety Infrastructure Guide DS424 uses the same approach and addresses Phases 1, 2 and 3; that is, **until commissioning and operation of the nuclear power plant**.

The structure of the Safety Infrastructure Guide DS424

The Safety Infrastructure Guide **DS424 is structured in accordance with the long-term structure of the IAEA safety standards**. It comprises **20 chapters**, each of which being supported by IAEA safety requirements. The Guide identifies when each requirement should be: considered, partially implemented and fully implemented.

The Safety Infrastructure Guide DS424 also provides an indicative time frame with some steps important to safety in establishing a safety infrastructure for a national nuclear power programme, and utilizes this time frame to provide insights on **the progressive involvement of the regulatory body and the operating organization** in nuclear power activities, as well as the **progressive allocation of responsibilities** from the government to these organizations.

Current status

The Safety Infrastructure Guide DS424 has been approved by the Safety Standards Committees NUSSC, RASSC, TRANSSC and WASSC, and **was sent to Member States** for the 120-day comment period on 31 July 2009.

In recent years, the IAEA General Conference has encouraged the Secretariat to develop approaches to supporting nuclear power infrastructure in States either considering the **introduction of nuclear power** for the first time or expanding an existing nuclear power programme. Recognizing the long tradition of the IAEA in establishing internationally agreed safety standards, numerous States have stated the necessity for clearer and more **practical guidance on how to apply the entire set of the IAEA safety standards**, in the most effective and efficient manner, in the development of a national nuclear power programme.

In response to this request, the objective of the **Safety Infrastructure Guide DS424** is to provide guidance on the establishment of a safety infrastructure in accordance with the IAEA safety standards when considering and preparing to embark on a national nuclear power programme. In this regard, it is proposed that a **compilation of relevant IAEA safety principles and requirements be progressively applied, presented in the form of 200 sequential actions**, for the convenience of the user.

The Safety Infrastructure Guide DS424 is intended to be applicable for States with various levels of experience. While some States seeking to establish a nuclear power programme would have little or no nuclear activities established, others could have extensive experience from the operation of research reactors and other applications of ionizing radiation.

Acquiring competences and a strong safety culture takes time

The IAEA safety fundamentals provide a coherent set of ten principles that constitutes the basis on which to establish safety requirements to protect individuals, society and the environment from harmful effects of ionizing radiation. **The application of all ten**

