

# OSART Good Practices

## EMERGENCY PLANNING AND PREPAREDNESS

### Emergency Plans and Organization

#### Gösgen, Switzerland

Mission Date; 8-25 November, 1999

Due to experience of large international exercises organized by the Organization for Economical Co-operation and Development (OECD) and the International Atomic Energy Agency (IAEA) the national alarm centre (NAZ) has developed an excellent philosophy of information transfer to cover the needs of partners by a so called "National Electronic Situation Display". This process is a departure from the typical supply-philosophy to a poll-philosophy applied to standard website applications. The system allows an organization to post information to a single source allowing retrieval on an as needed basis by a large number of partners. Consequently, it relieves the stress on the organization to supply information to a large number of partners and avoids the need to duplicate the transfer of documents between different partners. In this system organizations playing an active part in the national emergency system will contribute their data and will make them available for retrieval. Participation of the supervisory authority is already installed, participation of the operating organizations and the Canton is planned. In the next large exercise another Swiss nuclear power plant will participate and apply the system. Background information (e.g. technical plant information) on the plant will be integrated into the system. Participating external organizations are able to retrieve this data with standard web-techniques from a password-protected server. This system is considered to be a good practice and may be considered for application on an international scale. The system simplifies the procedure for an organization to supply information to a large number of partners.

#### Lingao, China

Mission Date; 6-23 August, 2001

While two different companies operate LNPS and GNPS there is a single integrated emergency response structure for the entire site. Under this structure the preparations for response at both plants have been unified to include: the emergency plan, emergency response organization, emergency implementation procedures, off-site planning, classification system, facilities, communication, emergency monitoring, consequences assessment system, emergency countermeasures, medical protection and interface with off-site emergency organizations. This concept optimizes the use of human resources, facilities and materials and simplifies the interface between the plants and with off-site emergency organizations. It also assures that the experience from GNPS is applied to planning at LNPS and assures a consistent response through unified training, drills, and exercises.

## Dukovany 1/4, Czech Republic

Mission Date; 5-22 November, 2001

Within the framework of the onsite emergency plan, the plant has developed a specific plan to deal with water pollution, the « Emergency deterioration of water quality - measures plan ». In case of an emergency situation that can affect the quality of discharged water, continuous measurement of water parameters would be available to service personnel at the central radiation protection control room to monitor the situation. Evaluation of this information will be made and the results transmitted to the Shift Emergency Staff.

The classification scheme of the water emergency plan contains a so-called „zero level“ to ensure timely identification of harmful substances before they can get to the environment. Not only radioactive substances are monitored and analysed, but also a number of other substances that can adversely affect the environment. In order to resolve extraordinary events associated with impaired quality of discharged water, there is a specialist for ECOLOGY on the Shift Emergency Staff. The « Emergency deterioration of water quality - measures plan ». is approved both by SUJB and the District Water authority.

## Angra 2, Brazil

Mission Date; 12-31 October, 2002

### Use of multiple Public Information Centers

The plant has used a very aggressive public information policy that serves as an outreach program for the public on nuclear energy as well as on emergency planning program aspects. Eletronuclear runs two information centers. One is in Angra Dos Reis and the other is in Itaorna Beach, adjacent to the plant site. The two centers have a good mixture of displays, models and information available in both Portuguese and English. Displays are frequently changed and the participation level of community groups is high. Brochures are colorful and informative. Visits by schools, universities and the public are encouraged and indeed are conducted on a frequent basis. There were some 25,000 visitors to these centers last year, many of which were from overseas.

Both centers have facilities available to support community activities. This program stimulates a more informed and supportive public, attracts students to the industry and helps to elevate the overall level of emergency preparedness throughout the region by improving the level of understanding of the technology.

It is noted that Eletronuclear has also developed public information materials for the Indian population that is indigenous to the area. Therefore, the public within the EPZs is educated in these areas to a much higher level than is normally found around other nuclear power plants.

## Angra 2, Brazil

Mission Date; 12-31 October, 2002

### Strength in Public/Private partnership

State and municipal civil defense organizations are extremely well staffed, trained and drilled in their respective responsibilities for facilitating the implementation of public protective actions. The evacuation planning performed in support of provisions to implement public protective actions is extremely thorough and detailed. Staging areas are used to stage emergency workers already well familiarized with their respective assigned areas of concern.

Main evacuation routes are computerized as are facility layouts for reception centers. Reception centers also have had an appropriateness review including pre-allocation of resources. In addition, this program serves as a public information outreach program on nuclear energy as well as on emergency planning program aspects. Therefore, the public within the EPZs is informed in these areas to a much higher level than is normally found around a nuclear power plant.

Furthermore, the IRD of the CNEN possesses an extremely detailed post plume phase capability that provides a high level of assurance that ground deposition characterization, ingestion planning and public relocation and re-entry activities would be well managed should the need arise. While the capability is designed to be used generically, the provisions in place in support of the operation of Angra 2 are very detailed and well coordinated. These conditions are reflective of an extremely good working relationship between the plant and the supporting governmental authorities.

## Angra 2, Brazil

Mission Date; 12-31 October, 2002

### Innovation in Benchmarking

As this is the only nuclear generating station in the Brazil, a considerably high level of offsite emergency response benchmarking has been performed. The program management periodically arranges for governmental authorities to visit programs of other countries to help in defining the scope and breadth of the program. The State of Illinois which has the most comprehensive program at the state level within the United States was selected as the model program to be followed.

## Rovno 1/2, Ukraine

Mission Date; 22 Sept-9 Oct, 2003

### Kuznetsovsk City Emergency Population Protection Plan.

The city of Kuznetsovsk has developed their plans and guidelines to effectively protect the health and safety of citizens of the city. Worthy of special mention, is the confirmed plans and agreements which allow families within the city to live with other families outside the 30 kilometer protection zone during potentially long accident term mitigation situations. These agreements have been verified in writing, signed and are maintained by the city.

## Penly, France

Mission Date; 29 Nov.-16 Dec., 2004

Colour coding used on assessment sheets (Fiche "evaluation des consequences radiologiques") in the emergency command centre

The tables in the assessment message sheet that has to be completed by the Site Assessment Emergency Centre (PCC) has the same background colour as the guideline (called KGE) that is used to assess the situation. This reduces the change off mistakes, especially in stressful situations.

This change was suggested by the Penly staff during a training session.

Colour codes used in the "release forecast and monitoring" message sheet comply with the colours used in the KGE guideline and in the computer application:

- blue for the total amount of radioactivity liable to be released in the next 24 hours;
- yellow for the estimated consequences to the public.

In addition, protective measures for the public and plant personnel are displayed in the Command Centre that are also compliant with the colour coding principle:

- blue for the protection of workers;
- yellow for the consequences calculated on the basis of the radioactivity to be released within the next 24 hours.

Benefits for the plant: This way the corporate message template is maintained.

Benefits for the emergency organization: The colour coding gives visual reference points making it easier to copy documents and reduces stress levels associated with emergency situations. Nuclear safety: Reduces copying errors. Improves reliability of information sent to the public authorities, as part of the protective measures taken to protect the public.

## Penly, France

Mission Date; 29 Nov.-16 Dec., 2004

Redundancy of EPP equipment and procedures.

There is a lot of redundancy in the equipment and procedures of the emergency plan, because the plant applied wherever possible the principle of redundancy in emergency preparedness.

There are numerous examples of where arrangements and equipment used in an emergency are doubled up. In particular:

- telecommunications which are systematically and independently doubled up,
- certain computer tools where a paper-based back-up is planned for.

Examples include applications used by the assessment command post (PCC) and the staff accountability system used at the gathering points,

- there are at least two sealed examples of each procedure in each command post,
- the barrier analysis that is done by the ETC during an emergency is checked by the ETC-N in Paris;
- systems for calling up staff either at the plant or on call are doubled up and independent.

Advantages for the plant: This redundancy improves the reliability of the EPP organization.

Operational safety: Improves the way an emergency is handled by the plant.

Assignment letter for the heads of the command posts.

Preparation for emergencies is done by a project organization. Commitment of all persons responsible for maintaining a part of the project is assured by their assignment letter.

The preparation of crisis management on the site is organized as a project. In this project organization there are seven persons from various departments responsible for implementing and maintaining a defined part of the internal emergency plan. This means that each of these so called "heads of command posts" is responsible for his separate part and that all parts together form the complete emergency plan. In order to coordinate this task with their normal tasks, a management tool was introduced to make cross-functional tasks easier.

The operational coordinator for the "preparation of crisis management" project is the EPP engineer (Engineering Department). He relies on the heads of the command posts to implement the various parts of the project. In order to formalize expectations, namely in terms of responsibility and workload, an assignment letter has been drawn up for each head of the command posts. This letter is signed by the head of the command post (operator in charge of the assignment), by the head of his department and by the plant manager.

This letter allows for:

- Formalization of the assignments of the heads of command posts,
- A precise definition of the content of this assignment with regards to:
- Material and documentation,
- Human resources,
- Organization and Management,
- Setting the time allocated to the head of command post to carry out his assignment,
- Evaluation.

Benefits for the plant: Assignments are clearly defined and crisis management preparedness is more efficient.

Benefits for the operators (recognition, improvement of working conditions, etc.): The co-coordinator may use this letter to rely on the heads of command posts. Each head of the command posts has enough time with the agreement of his line management to carry out his assignment.

Sharing of experience with other plants: Assignment letters were disseminated to the other EDF NPPs to share this experience.

Safety: Improvement of the NPP crisis management.