

OSART Good Practices

EMERGENCY PLANNING AND PREPAREDNESS

Emergency Response Facilities

Temelin 1/2, Czech Republic

Mission Date; 12 Feb.-1 Mar., 2001

The plant has developed a simple and effective tag board at the common entrance for the technical support centre and emergency control centre. The emergency response staff for these two facilities are divided into four teams. Each team is given a unique coloured tag. Each team member has his own tag with his name and functional position in the response organisation indicated. This same information is posted permanently on the tag board. When arriving at the facility a responder simply removes his tag and attaches it to his clothing. This allows clear identification of what each responders function and name is. It also allows for quick and positive indication of who has responded and assumed each response function.

Additionally, all emergency response facilities are provided with uniquely coloured vests with each functional position stencilled in bold letters on the back of the vest. This also allows for clear positive identification of who is filling which position. In TSC and ECC complex where responders may mix and mingle between areas, a clear distinction of function and response centre assignment is made possible by the unique vest colour.

Temelin 1/2, Czech Republic

Mission Date; 12 Feb.-1 Mar., 2001

The plant initiates callout of standby response personnel and activation of emergency response facility at the first step of a three step emergency classification scheme. This allows for arrival of key responders early in event sequences. This promotes a clear understanding of events and response actions since response personnel are involved early on in events, and provides additional staff for evaluation and implementation of potential mitigate actions. Dedicated emergency response facilities equipped with state of the art computerised information systems enhance the functionality of the facilities and creates a condition for rapid activation of response facilities.

Computerised application for evaluating category of emergency and dose evaluation off-site the plant. The application is composed of six interconnected modules:

PDM Module: This module presents meteorological parameters (direction, speed and wind stability) of the last 24 hours updated in real time.

TFUENTE Module: This module evaluates the source term (Bq/s) distributed by isotopes for four fuel degradation conditions, considering possible safeguard actions. It also enables us to evaluate a leak based on area and process radiation monitors combined with the status of the ventilation system. Finally it has the option of evaluating the source term based on parameters that are pre-calculated in NUREG- 1228.

DOSAC1 Module: This module estimates the class of emergency based on previously calculated source term data, applying meteorological and dose rate criteria from site limits. These are established in the internal emergency plan.

IRDAM Module: This module estimates doses outside the plant based on previously calculated source term at various distances in the affected sector, following the straight line trajectory model.

RASCAL Module: This module estimates doses outside the plant based on previously calculated source term, allowing the variation of meteorological parameters in four time intervals. It has the option of evaluating doses based on surface concentration data and/or air concentration taken from the Emergency Radiation Surveillance Plan (PVRE).

MESORAD Module: This module is more complete than the above. It includes area topography and enables us to monitor the radioactive plume every fifteen minutes on a map of the area (30 km). The results obtained are the doses on various organs due to types of exposure and surface deposit, in each time interval and accumulated at the end of the simulation.

These computerised modules are user friendly and together they make it easier to make dose estimations and input data. They are also very useful tools for personnel training, because it is easy to visualise the results of various emission hypotheses or the progression of the accident. It is also possible to make predictions assuming that meteorological conditions are maintained.

Good organization of muster points.

On a typical working day more than 1000 workers could be present on-site. In case of an emergency situation the evacuation of such a number of staff has to be carried out in an organized and effective manner. At the same time the emergency response staff has to be assembled and be coordinated for emergency response.

Before 1999 the plant had used only seven muster points for this purpose. Based on operating experiences from the year 1999 the concept of muster points is changed and 20 muster points were established over the plant site. The distribution of the muster point locations over the plant site has been selected to take into account gathering of the staff fast, sheltering and accommodation possibilities.

Muster points are well designated and have cabinets with the first aid kit, KI tablets, radiological survey meters, protective clothes, loudspeakers, lamps and other equipment to manage the assembled group of staff. A computerized counting system is installed at each cabinet to account for and to record staff based on readers of badges the staffs presents at the muster point. For effective response and communications with the Logistic emergency centre (PCM) the push button alerting system is installed enabling muster point officers to report in or ask for assistance. This arrangement allows organized communication and faster coordination between each muster point and PCM. Each muster point has two phone line connections with the PCM and announcement system (page system). The announcement system could be reached locally or from the PCM's command panel. A local or overall announcement from PCM's command post is possible. This arrangement allows the coordination and instruction of the particular muster points in case the emergency being limited to part of the on-site area. A monthly surveillance test is conducted by muster point officers to check the operability of the muster points.

General arrangements and organisation of muster points, the installation of a push button system to facilitate communications between muster point and PCM could be examples for other plants looking for improvements to their muster points arrangements.

Blayais, France

Mission Date; 2-19 May, 2005

Ergonomic design of the building hosting emergency response facilities.

After the storm of 1999, the plant has built the structurally reinforced building (BDS) with ergonomically designed rooms to host the emergency command center (PCD) with communication unit, logistic emergency center (PCM), assessment emergency center (PCC) and the main site security center (PCP). The BDS is constructed to protect personnel against outside aggressions and can operate autonomously. Ventilation, shielding, air conditioning, independent power supply, food and water reserves, rest and clean area telecommunications and data systems assure long term habitability and working conditions in case of emergency.

The building has a decontamination room to deal with cases of contamination on the site and telecommunication room for sending and receiving messages. The centers in BDS are equipped with commercial and dedicated communication systems for off-site and on-site communications, data systems, video terminals and different status boards. Procedures, actions list, manuals and other documentation are updated and very well maintained. The computerized log linked up to the entire network provides an effective means of keeping record of the emergency mitigating measures sequences. The emergency staffs in BDS wear tabards in accordance with the particular centres to identify their function. Room colors are identical to tabards colours and to the colours of computerised log blocks.

Mochovce, Slovak Rep.

Mission Date; 4-20 Sept., 2006

Capability and Use of the Computer Information Network for Emergency Response.

The NPP Computer Information Network displays the worksheets for the various ERO positions and allows personnel to complete the worksheets electronically. Worksheets that are completed to recommend actions, such as protective action recommendations, can be completed and forwarded electronically to the appropriate personnel for review and approval. The distribution of worksheets is predetermined and automatically occurs within the system. The Computer Information network also includes a screen that provides a one page summary of important information related to emergency response. This information includes event classification, unit status, meteorological conditions, the location of plant personnel, the status of offsite notifications, the status of warnings to personnel, protective action recommendations for shift, onsite, and offsite personnel. Information from this system is also archived. The electronic worksheets are printed out periodically to provide a backup record, and paper worksheets are available in the event that the system fails. Use of these electronic worksheets improve the efficiency of the emergency response organization and the accuracy of the information that is exchanged among the various positions.

Tihange, Belgium

Mission Date; 5-23 May, 2007

Reception of personnel and families at the "Reception and fall-back center" in the event of an accident

The plant has set up an organization for the reception of personnel and families and managing a long accident period, which could last several days. This organization is based in the "reception and fall-back center" in Les Awirs (Centre d'accueil et de repli des Awirs - CARA), which is supplied by power from Awirs power plant.

In the event of an emergency, CARA will fulfill the following functions:

- It can function as an off-site fall-back crisis center in situations where the normal site crisis center (COS) is inaccessible. Contact with the affected unit is maintained using the following means: telephone, fax, computer networks and videoconference.
- It can be used as a point to assemble people. It has a refectory for 100 persons that can also serve as a briefing room for the emergency staff just before they go to the plant. It has a big changing room with 24 showers for decontamination of staff coming off the plant. It also has a conference room with a capacity for 50 members of injured persons' families.
- Personnel can be given personal protective equipment. The teams are transported in a bus which is available 24 hours a day. The drivers have dosimeters and are used to working with the site and know what to do in the event of radioactive contamination.
- There is an infrastructure (meeting rooms, cafeteria, medical room, etc.) for the reception of the families of injured personnel in a calm atmosphere (no pressure from the media, at a distance from the site).

Chinon, France

Mission Date; 27 Nov. - 14 Dec, 2007

Medical facilities, equipment and procedures for the treatment and transportation of contaminated casualties in emergencies.

The plant's Medical Service has set up a robust organization for taking charge of contaminated casualties on site until their decontamination in the decontamination facility of the medical service or to transfer them to hospital.

The strong commitment of the medical and nursing staff as well as the strong relationships maintained with hospitals, the good involvement of medical service staff in exercises and training courses, the involvement of doctors at national level, and the well-organized duty roster for continuous medical cover contribute to the continual strength of this organization. Furthermore, care of casualties is enhanced by locally developed innovative techniques, including:

- Facilities for decontamination of multiple casualties, regardless of their ambulatory conditions.
- Equipment and procedures to survey potentially contaminated wounds.

The medical personnel as well as the plant volunteers receive regular practical training and exercise, which ensures the effective deployment of the medical arrangements.