OSART Good Practices
EMERGENCY PLANNING AND PREPAREDNESS
Emergency equipment and resources

Temelin 1/2, Czech Republic
Mission Date: 12 Feb.-1 Mar., 2001

The plant has developed an excellent management program utilizing a database employing standard commercially available software to effectively and efficiently track and maintain emergency response duty roster assignments. The several parameters necessary to maintain the duty roster are maintained on interconnected and related data fields. Information such as weekly team assignments for the entire year are programmed in. Along with necessary information such as phone numbers, pager numbers, e-mail address, residential address and other essential information for each team member is maintained. On-call emergency response personnel are assigned to specific teams designated by a unique identifying color, which is visibly displayed when the system is accessed, to provide clear recognition of team assignments. A network interconnection to the database allows ready access to the system from many locations. Appropriate password protocols are established to protect the integrity of the data. Each team members can access the system and provide updates and substitution information as necessary. Individuals are held accountable for ensuring their roster position and assignment are covered if they are unavailable for duty. Changes to data fields are automatically and instantly updated in all related fields and reports. By utilizing internet access capabilities the data is readily available virtually anywhere. A hard copy of the daily roster assignments is printed out twice a day and maintained as a backup copy should system problems develop.

Tricastin, France
Mission Date: 14-31 Jan., 2002

For Accident management measures, special shielding devices are necessary to be implemented in a controlled area in the plant. This needs to handle very heavy concrete block of weights ranging from 5 to 10 tons by a forklift in a very narrow area to precisely position them as radiation protection shielding. To facilitate the training of staff, the plant has prepared a special dedicated out side area to give the staff the possibility to train without interfering the operation of the plant and without the hazard of damaging equipment inside the plant during training. This area is used up to 12 times a year to get persons used in setting up the device. Using dedicated training areas for special training of accident management material will enable the staff to get more practice easily and with less effort and especially without endangering the plant. It is considered a good practice and is recommended for other plants with similar accident management provisions.

Zaporozhe, Ukraine
Mission Date: 6-23 Sep., 2004

Diverse means are used for prompt notification of the public during emergencies. Attributes of the notification system for ZNPP include:
- Pre-recorded initial emergency messages on all cable-TV channels in Energodar provided by the plant
- Pre-recorded initial broadcast-TV and FM-radio messages for the population of the 30 km
planning area provided by the plant
- Capability to broadcast audio/video update messages from the plant
- Direct notification for Energodar via loudspeaker system
- Siren system throughout the emergency planning area (tested monthly)

Borssele, Netherlands  
Mission Date; 8 Nov.-7 Dec., 2005

Use of a contamination and dose rate simulation device during exercise will help participants of drill.

For realistic contamination and dose rate data input during drills, the use of a PDA (Personal Digital Assistance, portable data system with GPS localization) has proven to be particularly useful. The release of radioactivity in a simulated accident is calculated with a release model and fed into the PDA memory.

During the 2005 May exercise the emergency relief team use the PDA to "measure (hypothetical data)" the dose rate in the field depending on the evolution of the accident.

This adds to realism of their surveillance and communications exercise.

South Ukraine3, Ukraine  
Mission Date; 9-25 Oct., 2006

Video conference tool uses for Emergency Planning and Preparedness communication.

The plant uses effective and efficient video conference connection as well as plant operation data collection in ERO between utility and other NPPs.

The video conference connection has been installed in the internal crises centre. This system allows visual communication (video conference connection) with utility and all Ukrainian NPPs.

The main role of this equipment during the video conference:
- To be more effective when communicating with off-site;
- To aid the decision procedure between utility and NPP;
- To exchange practical skills and knowledge among NPPs in emergency tasks;
- To request support dealing with all NPPs and utility; and
- To efficiently report the unit status.

In this crisis centre there is equipment which provides on-line plant data, processing, documenting, storage display and transfer of data. The system maintains on-line transfer of SUNPP unit status parameters to the crisis centres of the operating organization and NRC of Ukraine.

Doel, Belgium  
Mission Date; 8-25 Mar, 2010

The plant has a comprehensive database of all equipment intended to be used for emergencies.
All equipment, instruments and logistics needs for all emergency management functions and facilities are inventoried in a centralized database (under SAP management system). The database contains a detailed description of the items, the frequency at which they need to be tested, the calibration requirements (for detection equipment) and the department responsible for their maintenance. A sample check of the instruments indicates that the detection instrument calibration is up to date. This comprehensive equipment management system ensures that the equipment is fit for duty and provides a demonstrable, effective and reliable way to ensure that all the equipment required to manage emergency response is available for emergencies.

**Seabrook, USA**
**Mission Date; 6-24 Jun., 2011**

Radiological field monitoring & communication system.

The plant’s emergency response organization (ERO) offsite monitoring teams (OMTs) utilize a web-based program known as WebEOC to record field monitoring data and to transmit the data to dose assessment personnel in the Emergency Operations Facility (EOF). ERO OMTs are deployed into the field in dedicated vehicles to conduct radiological surveys and environmental sampling. The OMT uses the WebEOC application to enter its team identification number, its location, and the survey results information using the data entry screen. When the data entry is saved, the information is immediately transmitted to the EOF where it is displayed on a large screen for viewing by EOF dose assessment staff which allows prompt recommendation and intervention. The redundancy of measurement is also assured. New Hampshire and Massachusetts state field monitoring personnel are equipped with laptop computers with the same WebEOC field data communication capability. This method:

- Eliminates the need to verbally communicate information over cellular telephones or via radio transmission.
- Minimizes opportunities for human performance errors resulting from repeated manual transcription and communication of data.
- Provides for prompt information to decision makers.

**Cattenom, France**
**Mission Date; 14 Nov.-1 Dec., 2011**

Efficient follow-up by the Radiological Assessment Group (PCC) of the off-site radiological situation using real-time ambient dose rate data.

The Radiation Monitoring vehicles, to be deployed during an emergency, are equipped with a gamma dose rate system connected with a GPS system allowing the PCC staff to track their location continuously on a map. The ambient dose rates measured, every 10 seconds, by this system are displayed on the dashboard and transmitted by TETRA radio to the PCC. A colour code is applied to the transmitted data allowing a quick assessment of the radiological situation (green if dose rate is lower than 0.35 µSv/h, yellow for values between 0.35 µSv/h and 1 mSv/h and red for ambient dose rates ≥ 1 mSv/h). This automatic transmission allows the accumulation of the environmental measurement data while avoiding misunderstanding or errors, improving the accuracy of the available environmental data. Associated with online real-time ambient dose rate values from 29 off site gamma-tracer stations (Genitron) and with the colour coding used, this system may give a comprehensive overview of the environmental radiation situation.
The online display of the ambient dose rates on the dashboard also participates a better protection of the team members of the vehicles (driver and technician). The system has been in place at Cattenom NPP since 2010.

Kozloduy, Bulgaria

Mission Date; 26 Nov.-13 Dec., 2012

Emergency Response Centre Information System (ERCIS)
The plant has identified the need to transmit information concerning the status of units 5-6 and the consequences for the public and the environment to several off-site organizations. There are several pre-arranged forms used for this purpose.
The plant has developed an Emergency Response Centre Information System (ERCIS) to automatically acquire the necessary information and fill-in the forms. The forms can then be faxed, printed or emailed with the touch of a button.
The ERCIS is used by emergency team on duty at the ERC during drills or emergencies to prepare messages to state institutions. The ERCIS is tailored to the work of each person on duty at the Emergency Response Centre. Each work station is authorized to acquire specific information from a server and transmit it to the off-site authorities. Every form sent to the off-site authorities is logged and time-stamped automatically.

The server has access to the following information:
- meteorological data from three weather stations;
- radiation monitoring data from the industrial (on-site) gamma monitors;
- radiation monitoring data the ring of detector surrounding the plant in the EPZ;
- radiation monitoring data from the fixed network in the UPZ;
- nuclear units 5 and 6 process parameters;
- safety parameters display system (SPDS);
- post accident monitoring system (PAMS);
- spent fuel storage facility (SFSF) parameters.

ERCIS has three modes of operation:
1. Monitoring mode during normal operation to get access to real data from the site, the weather stations and the radiation monitors.
2. Scenario mode during exercises to get simulated data. In this case, the simulated data is prepared using EPA-Dose, JRODOS and main control room simulator.
3. Emergency mode to obtain real data regarding the emergency and transmit forms to the off-site authorities.

The benefits of this system are that it improves the accuracy and timeliness of the information transmitted to the off-site authorities. It also simplifies the management of the information and allows the Emergency Action Manager to track the information that was sent. Finally, it allows the same system to be used during drills or exercises, improving the training of emergency team.

Flamanville, France

Mission Date: 6-23 Oct., 2014

Training for evacuation of disabled personnel from buildings
The plant deliberately employs disabled persons. In order to assist them in emergencies a specific evacuation plan was established for each disabled member of personnel. It is signed by the disabled person and their line manager.

An evacuation chair is provided for persons with reduced mobility.

This evacuation chair is located in a stairwell which offers fire/smoke resistance of one hour. The chair can be deployed by one person, and enables a person with reduced mobility to be evacuated safely.

The person with reduced mobility and his/her colleagues have been trained in the use of the chair within the scope of the specific evacuation plan.