

**International Conference on Occupational Radiation Protection:
Strengthening Radiation Protection of Workers –Twenty Years of Progress
and the Way Forward**

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STRENGTHENING RADIOLOGICAL SAFETY AT CNESTEN THROUGH EMERGENCY PREPAREDNESS EXERCISES

The Internal Emergency Plan (IEP) of the National Center for Nuclear Energy, Science and Technology (CNESTEN) represents the set of measures taken by the Center's management, in the event of a radiological, nuclear or toxic emergency: to place the CNESTEN facilities at the least degraded state of safety possible and limit the consequences of accidents by implementing emergency procedures; to protect workers, neighboring populations, and the environment from ionizing radiation by limiting and controlling releases and implementing the necessary preventive and protective measures; to provide first aid to victims; Etc.

The IEP describes: CNESTEN and its installations, including the research reactor; the different accident situations envisaged to occur at the center; the reference accidents considered for the CNESTEN facilities; and the organization put in place if the IEP is triggered; Etc.

For the management of an emergency, CNESTEN has a technical crisis center (TCC), whose missions are: To assess the radiological risks and consequences in case of an emergency; to recommend preventive and protective actions; to evaluate the dose rate and the shielding calculation.

For TCC to succeed in its mission, TCC uses human and material means (video conference communication system; Tools for calculation, modeling and simulation; Radiological measurement equipment; Etc.).

In this sense, and to improve radiological safety within the CNESTEN, the center carries out several emergency exercises, including a periodic global exercise to trigger the internal emergency plan, which involves all the CNESTEN's internal response teams. The organization of such exercises allows the training of the emergency response team in crisis management and in achieving the objectives of the internal emergency plan.

The conduct of a periodic global emergency exercise at the CNESTEN requires following a set of preparation steps before the exercise to reach the global objective, which is good crisis management.

Among the steps for preparation of exercises adopted at the CNESTEN, we emphasize the choice of the scenario. In this sense, the exercise scenarios adopted are based, for example, on accidental situations described in the CNESTEN internal emergency plan. These accidental situations are exploited to develop exercise data (Definition of the technical components of nuclear facilities; definition of events, critical moments and sequences of events of the accident; definition of the radiological data; The carrying out simulations to determine the extent of the actions of the responders and the means of intervention; etc.).

Periodic exercises carried out at the CNESTEN help to improve the measures implemented for emergency intervention to protect personnel, the public and the environment against ionizing radiation.

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