

Information Circular

INFCIRC/1188

Date: 19 March 2024

General Distribution

Original: English

Communication from the Permanent Mission of Ukraine to the Agency

1. On 18 March 2024, the Secretariat received a Note Verbale, together with an attachment, from the Permanent Mission of Ukraine to the Agency.
2. As requested, the Note Verbale and its attachment are herewith circulated for the information of all Member States.



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Nº 4131/35-197-37006

The Permanent Mission of Ukraine to the International Organizations in Vienna presents its compliments to the Secretariat of the International Atomic Energy Agency and has the honour to provide information on the calculations by the State Enterprise “National Nuclear Energy Generating Company “Energoatom” of safety indicators for power units of Ukraine’s Zaporizhzhia Nuclear Power Plant (ZNPP), confirming the deterioration of the safety level of the ZNPP as a result of the long-term Russian occupation.

The Permanent Mission of Ukraine requests the Secretariat of the International Atomic Energy Agency to promptly circulate this Note Verbale as an Information Circular to all IAEA Member States.

The Permanent Mission of Ukraine to the International Organizations in Vienna avails itself of this opportunity to renew to the Secretariat of the International Atomic Energy Agency the assurances of its highest consideration. *v.k.*

Enclosure: 1 page.



Vienna, 15 March 2024

Secretariat
International Atomic Energy Agency

Vienna

Information on the calculations of the safety indicators for the Zaporizhzhia NPP units

Based on the results of the analysis of all the facts of violations of normal operating, nuclear and radiation safety conditions, which have already occurred and are occurring daily, the specialists of SE «NNEGC «Energoatom have carried out calculations of the safety indicators of the Zaporizhzhia NPP units. They confirm the steady negative trend of deterioration of the plant safety level as a result of the long-term Russian occupation.

Therefore, as a result of the calculations, the current values of the main safety criteria – indicators of the core damage frequency (CDF) and the large release frequency (LRF) will significantly exceed the regulatory norms of both Ukrainian norms and the requirements of the IAEA “Fundamental Safety Principles of Nuclear Power Plants, 75-INSAG -3 Rev.1, INSAG-12”, used worldwide.

The results showed that:

- for a cold shutdown of one power unit: CDF = $2.17 \cdot 10^{-5}$ per reactor-year,
LRF = 1.50×10^{-5} per reactor-year;
- for a hot shutdown of one power unit: CDF = 7.07×10^{-5} per reactor-year,
LRF = 6.73×10^{-5} per reactor-year.

The calculation was performed using the SAPHIRE-8x code for the probabilistic model of Unit 4 of the ZNPP. In the absence of a global safety analysis methodology that would take into account the current conditions at the plant, the analysis was performed using the method of expert assessments.

The calculations included only the facts of equipment failures and nuclear and radiation safety violations, as well as threats verified and confirmed by IAEA experts, in particular:

- deterioration of equipment reliability due to non-compliance with schedules and volumes of maintenance and repairs;
- an increase in the probability of human errors due to the lack of a sufficient number of qualified personnel, the use of unqualified staff from Russian nuclear power plants, as well as due to the tense state of personnel related to the occupation of the plant and the city of Enerhodar;
- the current state of power supply lines of the ZNPP (only one of the planned seven lines is currently in operation), which increases the probability of a complete power outage of the ZNPP due to constant shelling by the occupying forces of the Russian Federation.