

Nuclear Disasters: Are We Set Up to Relieve the Mind-Numbing Chernobyl and Fukushima Experience?

By Grete Mautner

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There's a visible pattern amid the European media voicing ever increasing concern over malfunctions and all sorts of emergencies occurring lately at nuclear power plants.

A very real possibility of a second Fukushima Daiichi nuclear disaster occurring in Europe has recently been reported by Italian news service Gli Occhi Della Guerra. In particular, it reported that the authorities of Germany and the Netherlands made a decision to hand out to the population iodine tablets capable of reducing the effects of radiation poisoning in an the event of a grave nuclear emergency. This panic-provoking move was made by Berlin and Amsterdam reflecting their severe concern over the condition of two nuclear power plants: the Doel Nuclear Power Station and the Tihange Nuclear Power Station, which are technically located on the the territory of Belgium, but are really close the borders of the two above mentioned nations. The last time there was a major malfunction at the third reactor of Belgium's most powerful nuclear power plant, Tihange, it was announced a couple of days ago by Le Soir. However, Doel is no less troublesome, as those two nuclear power stations were built back in the 70s and have been a major headache for nuclear scientists operating them ever since. It is no coincidence, therefore, that the decision to distribute anti-radiation pills in Aachen and The Hague came on the back of a number of scientific publications shedding light on the security conditions at the two of Belgium's nuclear power stations. Basically speaking, both environmental groups and scientists tend to agree that they represent a time bomb ticking right in the heart of Europe.

However, this is hardly the only source of concern for the EU, as analysts from the British magazine Energy Research & Social Science say that Europe is about to face a nuclear incident much more devastating than the Chernobyl disaster, as on top of the poor state of the two Belgian nuclear power stations, there's an 80% probability of a nuclear disaster occurring at one of Ukraine's nuclear power plants before 2020. In the event of such a nuclear disaster, the European Union will be dealing with both the unimaginable environmental damage, but due to the introduction of a visa-free regime between the EU and Ukraine, a mass exodus from the contaminated region of Ukrainians to Western Europe.

Today, Ukraine has four nuclear power plants: Zaporizhzhya (the largest in Europe, with six reactors and a total electricity generation output of 6,000 MW), Rivne (four reactors with a total electricity generation output of 2,880 MW), Khmelnitskaya (two reactors with a total

capacity of 2000 MW) and the South-Ukraine (three reactors and a total electricity generation output of 3000 MW). The fifth one, the infamous Chernobyl nuclear power station with four reactors was sealed off completely back in 2000.

Out of the 15 operational nuclear reactors in Ukraine, a total of 12 were introduced into service before 1990, with all of them sharing a maximum operational service life of 30 years. The fact that a total of 10 of these reactors have already exceeded their lifespans sends cold shivers down one's spine. However, those reactors have been used to produce an ever increasing amount of electricity to meet Ukraine's growing demand caused by a sharp decline in the number of operational thermal power plants that have no access to the coal produced in Donbass. This breakaway region has been on the defense ever since Kiev authorities launched military operations against its Russian-speaking population. Now those Soviet age reactors are being run into the ground so that they fulfill more than 60% of Ukraine's total electricity needs, which leads to nuclear scientists operating them being forced to to the limits of these thoroughly worn-out nuclear facilities.

The situation is aggravated by political pressure applied by Washington on the current Kiev government, demanding them to find a quick substitute to the nuclear fuel produced by the Russian company TVEL. Therefore, time and time again reactors are loaded with fuel produced by the American-Japanese corporation Westinghouse Electric Company. It seems that Kiev and Washington are too willing to ignore the traumatizing experience of the Soviet era Czech Temelín Nuclear Power Station, which signed a deal with Westinghouse on the supply of its fuel as early as 1996. But the use of American fuel led to a series of major failures at the power station eventually resulting in severe structural damaged being inflicted upon its reactors. Nuclear scientists operating the Temelín station failed to address the problem, which led to the decision to break the deal with Westinghouse Electric Company after yet another major incident in 2007. Finally, the Czech Republic refused to purchase any other form of fuel other than fuel produced in Russia, resulting in the Temelín Nuclear Power Station being fueled by Russia once again since 2010.

However, Kiev's authorities have gone so far in their Russophobic that they continue playing with fire, testing all sorts of substitutes to Russian fuel formulas produced in America since 2005. One can remember how a series of malfunctions at the South-Ukraine Nuclear Power Station back in 2013 resulted in a number of Ukrainian inspection organizations introducing a complete ban on the use of any form of American-produced nuclear fuel in Ukraine.

However the American sponsored coup d'etat in Kiev reopened the door for the use of American fuel in Ukraine, which has already resulted in a number of failures and emergency reactor shutdowns at various Ukrainian nuclear power plants.

To be more specific, since the 2014 coup, Zaporizhzhya NPP has already experienced a dozen emergency shutdowns. At South-Ukraine NPP, extensive use of American-produced fuel resulted in a 24 hours shutdown of the whole station back in 2016. As a result, only two out of six reactors at Zaporizhzhya NPP remain fully operational. The total amount of nuclear emergencies across Ukraine has increased by 400% since 2010. The Energy Research & Social Science report has repeatedly stressed that an abnormal level of emergency nuclear situations in Ukraine has been deliberately omitted in official international reports for a number of years, even though local media report them on a regular basis.

However, nobody seems to be concerned in Kiev. Last May, the official website of Ukraine's

Energoatom reported that a total of four reactors of the Zaporizhzhya NPP in Ukraine will only be fueled by products of Westinghouse Electric Company, with only two remaining reactors still being operated on Russian fuel. In addition to the use of sub-quality fuel, there's yet another reason for the mounting incidents and risk at Ukrainian power plants and that is chronic under-funding of this sector, since there's been not a single Euro invested in the sector since the collapse of the USSR.

Meanwhile, reactors that have worked longer than the planned 30-year service life must either be decommissioned or be modified for their service life to be extended. Both of these options are rather expensive for debt-ridden Kiev, yet the second option looks more favorable from its point of view. Ideally, these reactors have to undergo a major overhaul and modernization, but the estimated cost of such operations is estimated to reach as much as 150 million euros. But neither the state-run Energoatom nor Kiev itself has the resources to go down that route, so Kiev is arbitrarily prolonging the service life of all operational reactors.

Upon doing this it sends reports to neighboring countries and international organizations operating in the field of environmental protection. However, such actions simultaneously violate a total of two UN Conventions that require its signatories to obtain bilateral and international approvals before service life of a reactor is prolonged, but not the other way around. Those are the <u>Convention on Environmental Impact Assessment</u> and the <u>Convention on Access to Information</u>, <u>Public Participation in Decision-making and Access to Justice in Environmental Matters</u>.

As it's been announced by Ukrainian PM Viktoriya Voytsitskaya, as the nuclear industry collapses in Ukraine, nuclear scientists are being laid off or quit work voluntarily to seek employment in other countries. Additionally, the total number of emergency situations at Ukrainian nuclear power plants in 2017 reached a total of 17 cases against 12 cases a year earlier.

All these facts show that Ukraine's remaining nuclear power plants represent a real threat to the security of Europe, but against the backdrop of the current economic situation and political instability in Ukraine, there is no chance to reverse this negative trend. The question of how to address this situation effectively must be a topic of urgent negotiations between Ukraine and the authorities of leading EU states.

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Grete Mautner is an independent researcher and journalist from Germany, exclusively for the online magazine "New Eastern Outlook."

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