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Aging Nuke Plants Add to Europe's Economic Woes

By The Moscow Times

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VISAGINAS, Lithuania — The parking lot outside the atomic power plant is weedy and potholed. Bus stops that once teemed with hundreds of workers are eerily empty.

Yet the stillness at Ignalina, a Lithuanian nuclear plant built in the 1980s Soviet era, belies an unsettling fact: There is still nuclear fuel inside one of its two reactors, three years after it was shut down due to safety concerns.

A temporary storage facility for spent fuel and radioactive waste is four years behind schedule, creating a money drain at a time when the 27-nation European Union grapples with a crippling economic crisis.

States don't need EU permission to build nuclear plants, but they need to abide by its safety rules, and the problems at Ignalina have provoked threats from the EU to cut the funding promised for dismantling it.

That raises concerns that the facility will be around for years, possibly decades, longer than planned. Ignalina is turning out to be a hard lesson for Europe: It's one thing to kill a nuclear power station; getting rid of the remains is another headache entirely.

Many experts downplay safety risks in delays to dismantling Ignalina and two other Communist-era plants in Slovakia and Bulgaria, but that is little comfort to nearby residents who fear risks of a radioactive leak will only grow with time.

Last year's calamity at the Fukushima power station triggered by the Japanese earthquake and tsunami refocused global attention on nuclear technology's vulnerability 25 years after the meltdown at Chernobyl in Ukraine. That Soviet-built plant is similar to Ignalina.

Germany, which has one of the world's most advanced atomic energy industries, last year decided the dangers were too great and announced it would go nuclear-free by 2022.

Ignalina's delays and massive cost overruns offer a cautionary tale for the EU, which aims to dismantle dozens of nuclear facilities over the next two decades.

In the poor nations of Eastern Europe, some fear offline nuclear reactors left in limbo pose extraordinary risks.

"Lithuania cannot continue the decommissioning process for an unlimited period and risk creating another Chernobyl in the middle of Europe," Zigmantas Balcytis, a Lithuanian member of the European Parliament, said.

A major nuclear disaster is much less likely in a closed plant than in a live one. The Paris-based Nuclear Energy Agency says an offline plant contains only one-thousandth of the radioactive material of one in operation. Still, there are dangers of smaller releases of radioactivity into the air or soil, while workers face exposure to lethal doses.

In October 2010, radioactive pipes connected with Reactor 1 in Ignalina burst during cleaning, leaking several hundred tons of radioactive sludge. It didn't breach the concrete rooms inside the building, and no one was injured, but the accident caused alarm, particularly since the plant conceded in a statement that the cleaning technology "was in fact not tested in nuclear industry enterprises before."

Dormant nuclear facilities could potentially pose a tantalizing prize for terrorists or smugglers of nuclear materials, and experts point to another worry: Only a handful of reactors worldwide have been fully dismantled, meaning the process is largely uncharted territory. Tearing apart reactor cores, for instance, creates unknown challenges and potential risks given the level of radiation inside them.

Steven Thomas, an energy expert at Britain's Greenwich University, says taking apart the core will likely require robots that are not yet invented. "The robots we have at the moment won't do it because the levels of radioactivity will send them berserk," he said.

Ignalina presents particular challenges. The nuclear fuel rod bundles, at 7 meters, are twice as long as those in conventional plants and must be sawed in half to fit into storage casts.

Spent nuclear fuel is by far the biggest decommissioning headache. It is extremely radioactive

and will remain so for thousands of years. In the U.S. and elsewhere, it's a political bomb because no state or county wants to store it. France chooses to reprocess its fuel for further use in reactors, while Sweden and Finland bury it in casks deep underground.

In the long term, Lithuania hopes to send its fuel back to Russia, where it was manufactured. But for now it has nowhere to put many spent fuel bundles since the temporary storage facility that was supposed to be ready when the plant closed in 2009 is still not complete.

Decommissioning work in Lithuania, Slovakia and Bulgaria has been held up by vague contracts, lengthy regulatory approval, commercial disputes and management changes, according to officials involved in the projects.

Since closing the plants was a condition for their joining the bloc, the EU is paying almost the entire bill, and for taxpayers, it's huge — more than $2.6 billion so far, over half of it to Ignalina, the most troublesome. The three countries have re-estimated total costs at $6.8 billion — up from the original estimate of $5.1 billion — and doesn't include the toughest job, dismantling the reactor cores.

The job was due to be completed between 2025 and 2035, but may take much longer and cost more. That's a disturbing omen for the EU's plans to shut down a third of its member states' 143 active reactors by 2025. The bloc currently has 77 reactors offline in various stages of decommissioning.

Other EU countries will have to foot the bill for closing their own plants, adding to taxpayers' woes. In Germany, it will be in addition to energy price increases as the government scrambles to finance an ambitious switch from nuclear to renewables, which should account for 60 percent of total energy consumption by 2030. Just last month, Germany's main utilities announced that households could see their electricity bill jump up to 50 percent in order to finance this transition from nuclear power.

Experts say that disassembling atomic plants promises to be far costlier than previously estimated, given the lack of experience worldwide and nuclear operators' propensity to underestimate decommissioning costs to make new projects look more attractive.

Thomas of Greenwich University said in Britain nuclear operators were supposed to pay for the decommissioning, but over the decades the cost was passed to the government, which will have to come up with $153 billion over the next century to dismantle the country's existing nuclear power plants.

Just abandoning the facilities with radioactivity trapped inside is not an option. But given the enormous expenditures, some governments are opting to drag out the decommissioning over many decades.

In its heyday, the Ignalina plant near the border with Russia employed 5,000 people and provided power to Estonia, Latvia, Belarus and Russia. Although 2,000 people still work there, the atmosphere inside is almost funereal.

CEO Zilvinas Jurksus, a soft-spoken telecommunications expert who took over Ignalina in May 2011, believes that the German company that leads the decommissioning, Nukem

Technologies, underestimated the projects' scope and has been too slow in preparing detailed documents.

Nukem, in turn, faults Lithuanian red tape and lack of experience.

"Nukem built a used fuel storage facility in Bulgaria. The project started at the same time as in Lithuania, and we handed the facility over to the customer last year, in the spring," said Beate Scheffler, a Nukem spokeswoman. "In Lithuania, we are still working."

It is becoming increasingly clear that the nuclear-free dreams of countries like Germany promise to be far more complicated to fulfill than originally anticipated.

"It's one of those things that the industry has always said — 'look, we know how to do it, it's technically simple,'" Thomas said. "Well, put your money where your mouth is, and actually do it."

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