



https://www.thestar.com/news/world/radiation-sensors-cameras-and-flak-jackets-the-eyes-of-the-world-upon-them-inspectors-head/article__398da3f7-90ce-58ce-9996-751b09b21404.html

[Home](#) / [News](#) / [World](#)

WORLD

Radiation sensors, cameras — and flak jackets: The eyes of the world upon them, inspectors head to Ukraine's nuclear plant

International Atomic Energy Agency mission faces a difficult and dangerous task as it surveys damage to facility shelled by Russian troops.

Aug. 30, 2022  



International Atomic Energy Agency chief Rafael Grossi, centre, with a team of 13 people wearing caps and sleeveless jackets bearing the nuclear watchdog's logo.

International Atomic Energy Agency/Twitter.

By Allan Woods Staff Reporter

They are boldly going into a place that has been visited many times before — but now in a context that makes the blood run cold.

The team of International Atomic Energy Agency inspectors set to arrive Wednesday at [an occupied Ukrainian nuclear plant on the front lines of the war with Russia](#) will be armed with radiation sensors, cameras and other tools of a trade that has them jetting around the world, monitoring and reporting on the state and safety of nuclear facilities.

One piece of kit — a green flak jacket — will be less familiar.

If all goes according to plan, they will inventory the facility that has been held by Russian troops since March, survey the damage from shelling and assess the safety of the Ukrainian staff over several days.

But the inspection team will be powerless to do what is most urgently needed: to end the hostilities taking place in the vicinity of Europe's largest nuclear plant, which generates one-fifth of Ukraine's electricity.

"It's not like they have a C-130 (military aircraft) with a bunch of Gatling guns on it," said Ed Waller, an expert in nuclear safety and security at Oshawa's Ontario Tech University. "They don't provide that type of service. They were never designed to do that."

The group reportedly includes nuclear safety experts from Poland, Lithuania, Serbia, China, France, Italy, Jordan, Mexico, Albania and North Macedonia. (Representatives of Russia and Ukraine, as well as Kyiv's American and British backers, are notably absent.)

They arrived in the Ukrainian capital Tuesday, greeted by a war of words and flurry of military activity that could still put their mission in jeopardy.

Ukrainian officials accused Russia of shelling the corridors that have been established for the IAEA team to reach Enerhodar, the town 700 kilometres southeast of Kyiv where the nuclear power plant is located, as well as shelling the area of the six-reactor plant itself.

"These are exactly Russian provocations," Andriy Yermak, the head of Ukrainian President Volodymyr Zelensky's administration, [wrote on Twitter](#).

Meanwhile, Vladimir Rogov, a member of Russia's civil-military administration in Zaporizhzhia, accused Ukrainians of shelling in the vicinity of the nuclear plant early Tuesday morning.

"Large-calibre artillery was used. As a result, two ruptures were recorded near the spent fuel storage building," he [wrote on Telegram](#), posting photographs of the roof of a building near Zaporizhzhia's Reactor No. 2, which he claimed had been pierced by Ukrainian munitions, a claim it was not possible to independently verify.

"The reason for the shelling is the deliberate intention of the Kyiv leadership to disrupt the IAEA mission," Rogov wrote.

In short, the IAEA inspection team will be the first civilians to lay neutral eyes on what is, by any standard, an incredibly dangerous mess.

It would be one thing if Russia and Ukraine were playing with fire, which can be extinguished or burn itself out. It is quite another when it is firepower that is allegedly being fired from and toward an atomic target — one that could kill or sicken swaths of the population if radiation is released, in a country that has already endured the 1986 Chernobyl nuclear disaster.

“A civilian nuclear power plant was never meant to exist under these circumstances,” says Akira Tokuhiko, a nuclear design, engineering and safety expert at Ontario Tech University.

“It’s a secured site in some respects, but not for military attack ... The concrete is pretty thick, but military weaponry is such that it can penetrate concrete.”

IAEA director general Rafael Mariano Grossi, who is leading the inspection mission, has spelled out what he called the pillars of nuclear safety that must be upheld in Zaporizhzhia.

Among them: ensuring the physical integrity of the nuclear plant; the continued functioning of the security systems and safety equipment; a secure power supply; uninterrupted transportation routes; and reliable communications.

But it may be the last two pillars that are most important: on-site and off-site radiation monitoring, so that the world has reliable, independent data about what is happening at the contested facility; and assurances that the Ukrainian operators still working at Zaporizhzhia — it’s not clear how many remain — are free to make decisions that are guided by science, not by geopolitics.

“It’s very troubling,” said Steven Arndt, president of the American Nuclear Society. “There are more colourful adjectives, but ‘troubling’ is really the most accurate way of describing my emotions.”

Arndt travelled to Ukraine in the 1990s to help the country establish nuclear regulations after the fall of the Soviet Union and has visited the Zaporizhzhia plant, which has been supplying electricity to the country since 1985.

“It is completely abhorrent to the basic principles of good science and good regulation to fight a war around any large industrial facility, but particularly a nuclear power plant,” he said.

The inspectors and experts taking part in the Zaporizhzhia mission are among the nuclear industry’s scientific elite.

The IAEA, which declined an interview request, has a total roster of about 400 safeguards inspectors. Mostly physicists, chemists and engineers, they have years of experience in the nuclear field as well as a specific background working with safeguards, as the agreed-upon technical measures to ensure nuclear safety, security and accountability are known.

The UN nuclear watchdog receives about 250 applications each year for 15 to 25 available positions. Once hired and trained, safeguards inspectors spend much of their time in airports, hotels and in vehicles, travelling to the far-flung power

plants, uranium mines, enrichment facilities, nuclear reactors and waste facilities, spending about a third of the year on the road, according to [a 2016 article](#) by the IAEA's public information office.

Grossi, an Argentine diplomat who has spent decades working on nuclear disarmament, the prohibition of chemical weapons and now nuclear safety, is leading the mission. He is a 61-year-old father of eight who talks with his facial expressions and arms as much as his mouth — a man who critics suggest sees the Zaporizhzhia standoff as a potentially career-defining moment.

His deputies are Lydie Evrard, the former head of France's nuclear safety regulator who now leads the IAEA's nuclear safety and security department, and Massimo Aparo, an Italian nuclear scientist who heads the IAEA's safeguards department.

A Romanian, Florian Baciu, another member of the 14-person team, heads the agency's Incident and Emergency Centre.

On Monday, the team arrived at the VIP airport terminal in Vienna, where the IAEA is based, received their mission uniforms — baby-blue golf shirts, baseball caps and sleeveless Helly Hansen vests with the tags still on the zipper — and set off on their delicate journey.

[Photos of the departure](#) show the inspection team boarding a private jet bound for Kyiv.

“The extent of Russian control over the reactor could impact the IAEA's access given that the IAEA has a safeguards agreement covering the Zaporizhzhia Nuclear Power Plant with the government of Ukraine, but not with the government of Russia,” the agency said in response to written questions. “In addition, military activity near the plant could impact IAEA's safety and access, therefore the inspection scope and duration may be adjusted due to additional external constraints.”

Tokuhiro of Ontario Tech said the inspection team will likely bring with them radiation-monitoring and telecommunications equipment, which they might want to connect to a satellite or network that is neither under Russian nor Ukrainian control, so they can be assured of independent data.

But the team's main concern will be to search for and address the toll that six months of war has taken on the facility's structure, power sources and safety systems.

“The reactor itself is pretty massive. The piping and wiring, less so,” Tokuhiro said. “In very simple terms, you're going to have pipes and wiring that are not as well protected that would probably be damaged.”

In the past week, the Zaporizhzhia plant was forced to rely on emergency diesel generators when the last of its four external power lines — which both transmit electricity to homes and factories as well as power the plant's safety systems — temporarily lost connection. The three other power lines were damaged earlier in the conflict.

There will also likely be an accounting and inventory of nuclear materials, including spent fuel, said Waller.

In Canadian reactors, for example, there are cameras in place to monitor a plant's dry fuel storage site and seals on the protective casks to ensure that they are not stolen or tampered with. The IAEA also has its own cameras and monitoring devices that provide direct data to the agency's Vienna base.

Part of the inspection would involve ensuring both that IAEA equipment is functioning properly, while another would involve checking data that is stored only at the Zaporizhzhia facility.

Energoatom, Ukraine's nuclear regulator, reported earlier this month that Russian shelling had resulted in damage to three radiation-monitoring sensors next to an outdoor section of the plant where 174 dry fuel storage casks are stored. One of the plant's Ukrainian employees was also hospitalized with shrapnel wounds in the incident.

Waller said that the inspection team will be trying to ensure that the pillars of nuclear security laid out by Grossi early in the conflict are in place or, alternatively, identify which of the pillars has been cracked, toppled or turned to dust by the war.

“You've got a bunch of operators from Ukraine who are under duress and God knows what else,” he said. “You've got a bunch of Russians there that shouldn't even be there. You've got a regulator that doesn't have control of the plant, and the IAEA can't do a thing about it.

“How is their presence at an occupied nuclear plant making us any safer? It's not like they're going to parachute in and fix stuff.”

They may, however, be bringing with them vital supplies, such as replacement sensors for those that have been damaged, and advice on the necessary repairs to be done and how best to continue functioning on the front lines of the biggest European conflict since the Second World War.

For many nervous nuclear experts, the answer to that last question has a simple answer: establish a buffer zone around the Zaporizhzhia plant, a demilitarized area 30 kilometres around the facility where fighting does not occur.

“You shouldn’t have military units for either side near that facility, said Arndt. “It creates enormous challenges for the individual operators of that plant, for competing resources, for all sorts of things.”

For Tokuhiro, the laying of blame by both Ukraine and Russia over damage done to the facility is less important than the urgency of agreeing to create a secure and independently monitored space around the city of Enerhodar — a city that was created for the generation of power but has now been taken hostage by war.

“If you’re a child and you see your mother and father fighting, do you take sides,” Tokuhiro asked, “or do you just want them to stop?”



Allan Woods is a Paris-based staff reporter for the Star. He covers global and national affairs. Follow him on Twitter: [@WoodsAllan](https://twitter.com/WoodsAllan).

REPORT AN ERROR

JOURNALISTIC STANDARDS

ABOUT THE STAR
