TOPIC OF THE WEEK

MAY'18 (23 to 31)

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Topic: Floating Nuclear Plant

Russia launches world's first floating nuclear power plant

Russia on May 19, 2018 launched 'Akademik Lomonosov', the world's first floating nuclear power plant at the St Petersburg shipyard.

The 'Akademik Lomonosov' is to be the first of a fleet of floating nuclear power stations to be stationed in the Russian Arctic. Russia's main objective behind the development is to meet its growing electricity needs in its drive to develop oil resources in remote Arctic regions.

History

Called the Academik Lomonosov, the two-reactor 70-megawatt floating power plant has been 11 years in the making. Russia started work on it way back in 2007 at a cost of $232 million. The plant is owned by the state-run nuclear energy corporation Rosatom. Currently, the ship, which must be towed and cannot navigate on its own, has left St. Petersburg on a route that will take it around

Norway to a Russian town called Murmansk, where it will be supplied with nuclear fuel. From there it will head to the Arctic to its new home of the Russian city of Pevek, where 100,000 people live and work. Other countries such as the U.S. and China have worked on floating nuclear power plants before, but Russia is the first to christen one.

Key Details

- The 'Akademik Lomonosov' is to be the first of a fleet of floating nuclear power stations to be stationed in the Russian Arctic.
- The 144-by-30-metre (472-by-98-foot) power plant holds two reactors with two 35 megawatt nuclear reactors (70-megawatt) that are similar to those used to power icebreaker ships.
- The power plant has no propulsion of its own. It will be towed up North to avoid the steep cost of shipping it by land piece by piece to remote areas.
- The plant is capable of producing enough electricity to power a town of 200,000 residents, far more than the 5,000 living in Pevek.

Significance

The floating reactor can help save 50,000 tonnes of carbon dioxide emissions per year.

It is set to replace an ageing nuclear reactor and a coal-fired power plant, both of which are both located in Chukotka.

While, according to project in-charge Vitaly Trutnev, the power plant has the latest security systems and should be one of the safest nuclear installations in the world, environmental activists think otherwise.

Activists at the environmental group Greenpeace have called for international monitoring on the issue. The activists fear that the nuclear plant could become a 'nuclear Titanic' or a 'Chernobyl on ice' 32 years after the Soviet nuclear disaster. Besides Russia, China is also building a floating nuclear power plant.

About Soviet Nuclear Disaster

The disaster was a catastrophic nuclear accident that occurred in April 1986 in a nuclear reactor at the Chernobyl Nuclear Power Plant near Pripyat, a town in northern Ukrainian SSR, Soviet Union.

- The disaster began during a systems test on 26 April 1986 at reactor 4 of the Chernobyl plant. There was a sudden and unexpected power surge.
- When operators attempted an emergency shutdown, a much larger spike in power output occurred. This second spike led to a reactor vessel rupture and it was followed by a series of steam blasts.
- The development exposed the graphite moderator of the reactor to air, causing it to ignite.
- The resulting fire sent long plumes of highly radioactive fallout into the atmosphere over an extensive geographical area, including Pripyat. The plumes drifted over large parts of the western Soviet Union and Europe.
- The Chernobyl accident is considered the most disastrous nuclear power plant accident in history, both in terms of cost and casualties.

It is one of only two nuclear energy accidents classified as a level 7 event (the maximum classification) on the International Nuclear Event Scale, the other being the Fukushima Daiichi nuclear disaster in Japan in 2011.

Conclusion

Critics are calling a floating nuclear power plant bound for a Russian town in the Arctic Circle "Chernobyl on ice." While there isn't really enough information to make a specific risk assessment, a floating nuclear reactor in and of itself isn't necessarily a cause for alarm: nuclear reactors have been powering submarines for over 60 years.

If there were a problem out in the middle of the ocean, you would probably never see it on land. Or, you might be able to measure it, but it would be such a minimal impact [on land] because the ocean is so big. But if you have this barge that's anchored providing electricity 24 hours, seven days a week, and you had a spill, then it could get into the environment locally onshore. So you'd have to make sure that that never happens. So the security would be a challenge, as well as how do you handle storms and hurricanes and typhoons?

Suggested Reading:

- ✓ https://www.fastcompany.com/40565519/russia-just-launched-the-worlds-first-floating-nuclear-power-plant
- ✓ https://www.npr.org/sections/thetwo-way/2018/04/30/607088530/russia-launches-floating-nuclear-power-plant-its-headed-to-the-arctic
- ✓ https://www.jagranjosh.com/current-affairs/russia-launches-worlds-first-floating-nuclear-power-plant-1526897733-1?ref=list_ca
- ✓ https://www.arctictoday.com/russias-first-floating-nuclear-power-plant-heads-towards-arctic/