

# **San Antonio Bay Estuarine Waterkeeper Challenges Four New Nuclear Reactors and Forever Radioactive Waste in Calhoun County**

## *First Intervention Against SMRs in the U.S.*

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LONG MOTT, Texas – This week, San Antonio Bay Estuarine Waterkeeper (Waterkeeper) intervened to stop four proposed experimental nuclear power reactors targeted for Long Mott, Texas – a community in coastal Calhoun County – the first intervention against the construction of a Small Modular Reactor (SMR) in the United States. None have been built.

Waterkeeper, representing local fisherpeople and community members on the Texas Gulf Coast, is calling on the U.S. Nuclear Regulatory Commission (NRC) to reject the construction permit application for four pebble-bed nuclear reactors (Long Mott Generating Station, LMG) submitted by Dow/Union Carbide subsidiary Long Mott Energy (LME) primarily for providing power and steam to the plastics company and very little electric power sold to the grid.

Waterkeeper, represented by Marisa Perales of Perales, Allmon & Ice, P.C., is charging that these first-of-a-kind-in-the-U.S. nuclear reactors, whose design has not even been approved by the NRC, are too dangerous and that LME has not sufficiently demonstrated its financial qualifications to build the reactors. Furthermore, the facility is not designed to withstand the increasingly more frequent and severe storms that climate change is causing.

“Waterkeeper is intervening against the permit to protect the community from radioactive air and water, to avoid becoming a guinea pig for four experimental atomic reactors, to avert wasting money and resources, and to avoid becoming a de-facto permanent high-level radioactive waste dump,” **said Diane Wilson, executive director of San Antonio Bay Estuarine Waterkeeper and 2023 Goldman Environmental Prize winner.**

The group objects to LME’s Xe-100 construction permit request in part because the reactors have no physical containment to capture radioactive releases during accidents. Temperatures in

the reactor could get so hot during certain accidents that significant amounts of radiation could be released from the fuel balls, overcoming the "fictional" containment, which the company claims is an inherent property of the fuel itself.

"The Xe-100's lack of a physical containment structure is a major safety flaw," said **Dr. Edwin Lyman, physicist and director of nuclear power safety at the Union of Concerned Scientists**. "The Long Mott application shows that if the coolant gas leaks out of the reactor the fuel particles could become damaged and release significant amounts of radiation. The reactor is simply not meltdown-proof, as its advocates claim."

Each of the four reactors would have approximately 220,000 tennis-ball-sized fuel balls made of coated uranium particles contained in graphite pebbles, which will rub against each other (like in a huge gumball machine) as part of the design. This could cause cracks or breaks that could release radioactivity, and radioactive dust will build up in the reactors. In addition, radioactive gases that form during normal operation will be released from the balls and into the environment.

The Long Mott Generating Station (LMG) will routinely release radioactive emissions under normal operations into the air and water. Legal levels are not safe levels. Once in the environment, fish and other animals and plants absorb and concentrate the radioactive elements. They concentrate or bioaccumulate in bone, muscle, and other organs, causing higher doses in bigger fish and humans who eat the fish.

Long Mott Energy is not financially qualified to build the reactors to nuclear safety standards. The application does not provide the required amount of detail and evidence that LME, the newly-formed, limited liability subsidiary Dow created to build the nuclear reactors, will gain access to the amount it would cost to build it. The company also overestimates the amount of taxpayer subsidies the federal government has committed to help Dow pay for the reactors.

In the reactors, the fuel balls will become enormously more radioactive than when they first enter. They will become high-level radioactive waste (irradiated or 'spent' fuel), which can give a lethal dose in a few minutes if unshielded. The waste will be dangerous from the start of operations when it starts being generated and will last for millions of years. One of the hundreds of fission products created when the uranium atoms split is iodine-129, which has a 36-million-year half-life, thus remains dangerous for 360 to 720 million years. There is still no location or technology that can isolate such long-lasting waste for the millennia it remains hazardous. Virtually every nuclear reactor community in the country is still storing nearly all of the irradiated fuel created at its location.

Texas and the community should assume that all of the waste will be kept on site indefinitely. Neither LME nor the NRC has even estimated if or how long the waste from pebble bed nuclear reactors can be stored and how dangerous the site will be as soon as the reactors start and for the thousands of centuries the waste stays radioactive.

There have only been a few attempts to build pebble bed reactors in the world. The AVR in Germany had numerous problems. South Africa chose not to proceed with the PBMR it was planning. Information from China is scant.

Diane Wilson stated that "Waterkeeper has very little trust that LME and Dow/Union Carbide will do the right thing to ensure the safety of our community."

In 1991, there was an explosion at Union Carbide Seadrift, which killed one person and injured several others. The Occupational Safety and Health Administration (OSHA) released documents showing that previous audits had warned of outstanding problems with the facility.

Wilson continued, "LME relies heavily on Dow/Union Carbide's credentials in its application, but Dow/Union Carbide's inability to ensure safety and prevent the discharge of plastic pellets into the Bays, which it is currently doing, gives little confidence that it has the technical expertise to manage a nuclear reactor safely, much less prevent an accident on its own plant from causing a disaster at the nuclear reactor. If it can't even stop regular discharges of visible plastic pellets, how can it be trusted to stop emissions of invisible radiation and other pollutants from a nuclear facility, even during normal operations? There is an uneasy concern about the construction of nuclear reactors so close to a company with this kind of history."

The group calls on the NRC to reject the LME application for nuclear power construction on the Texas Gulf Coast.

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