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REPORT A SAFETY CONCERN

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Fuel Fabrication

Fuel fabrication facilities convert enriched uranium into fuel for nuclear reactors. Fabrication also can involve mixed oxide (MOX) fuel, which is a combination of uranium and plutonium. NRC regulates several different types of nuclear fuel fabrication operations.

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See [Locations of Fuel Cycle Facilities](#) for a list of fuel cycle facilities licensed by NRC.

Low-Enriched Uranium Fuel Fabrication Facilities

Fuel fabrication for [light water reactors \(LWR\)](#) (regular commercial power reactors) typically begins with the receipt of low-enriched uranium, in the chemical form of uranium hexafluoride (UF_6), from an [enrichment plant](#). The UF_6 , in solid form in containers, is heated to gaseous form, and then the UF_6 gas is chemically processed to form uranium dioxide (UO_2) powder. This powder is then pressed into pellets, sintered into ceramic form, loaded into Zircaloy tubes, and constructed into fuel assemblies. Depending on the type of light water reactor—whether it's a [boiling-water reactor](#) or a [pressurized-water reactor](#)—a fuel assembly may contain up to 264 fuel rods and have dimensions of 5 to 9 inches square by about 12 to 14 feet long.

Three fuel fabrication plants processing low-enriched uranium are currently licensed by the NRC: [Global Nuclear Fuel-Americas](#) in Wilmington, North Carolina; [Westinghouse Columbia Fuel Fabrication Facility](#) in Columbia, South Carolina; and [Framatome, Inc.](#), in Richland, Washington. These facilities are also called [Category 3 Fuel Facilities](#).

AREVA Lynchburg was a fuel fabrication facility that had operated under NRC purview and was located in

