



## EnCore® Fuel

We're changing nuclear energy...again.

Westinghouse EnCore® fuel is a game-changing accident-tolerant fuel solution that is intended to provide design-basis altering safety and significant economic benefits, as well as greater uranium efficiency.

As the leading supplier of nuclear fuel globally, Westinghouse has access to a world-class network of research, design and manufacturing partners. We are collaborating to deliver EnCore fuel on an aggressive, accelerated schedule.

Learn more about how Westinghouse EnCore fuel is changing nuclear energy at [bit.ly/WestinghouseEnCoreFuel](https://bit.ly/WestinghouseEnCoreFuel)



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## Westinghouse EnCore® Fuel:



Provides significantly **increased safety** margins in severe accident scenarios



The suite of EnCore fuel products offers **economic benefits**



Accelerated **delivery timeline**



Superior design provides enhanced **fuel cycle and plant economics**



World's **largest supplier** of nuclear fuel with world-class partner network

## Enhancing Safety with Westinghouse EnCore Fuel

On Dec. 2, 1957, Westinghouse changed the world when Shippingport, the first commercial nuclear power station in the U.S., came online. Today, Westinghouse is changing nuclear energy again, building on our legacy of innovation with our revolutionary new accident-tolerant fuel design (ATF), EnCore fuel.

The EnCore fuel program will be delivered in two phases. The initial EnCore fuel product is comprised of coated cladding fuel rods loaded with ADOPT™ fuel pellets. The combination of this advanced rod coating with Westinghouse's proven ADOPT pellets can provide utilities with increased pellet uranium loading, improved fuel utilization, increased loss-of-coolant accident (LOCA) margins, enhanced debris fretting resistance and higher burnup.

The second phase of the EnCore fuel program features silicon-carbide (SiC) cladding and either uranium silicide ( $U_3Si_2$ ), uranium

nitride (UN) or high thermal conductivity uranium dioxide ( $UO_2$ ) pellets. This is intended to offer significant safety benefits in beyond-design-basis accident scenarios, enabled by SiC's extremely high melting point and the high thermal conductivity of the advanced fuels.

While current Westinghouse fuel designs have operated extremely well under normal plant conditions and design-basis accident scenarios, existing nuclear fuel designs can be challenged during beyond-design-basis severe-accident scenarios. In the event of such conditions, the long-term loss of coolant and the resulting high temperatures of the fuel can lead to the degradation of the fuel cladding and the early release of fission products. EnCore fuel is "game-changing" for the nuclear industry, significantly increasing safety margins in severe-accident scenarios. Additionally, EnCore fuel offers flexibility for fuel management

and provides a platform for utilities seeking higher rod burnup through higher enrichment.

Having fuel that maintains its integrity in severe-accident conditions? ***This changes nuclear energy ... again.***

The pursuit of accident-tolerant fuel is being carried out by an international, multidisciplinary, world-class network of research, design and manufacturing partners. Leveraging the breadth and depth of our resources, combined with U.S. Department of Energy awards, as well as utility funding, we are collaborating with respected industry partners to deliver EnCore fuel to the market. In the spring of 2019, we became one of the first companies to insert lead test rods with accident tolerant fuel manufactured into lead test assemblies into a commercial nuclear reactor.



Westinghouse