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NUCLEAR MYTH:

"All reactors described as critical are dangerous."

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REALITY:

Critical is defined by the NRC as "the normal operating condition of a reactor, in which nuclear fuel sustains a fission chain reaction." This means that to sustain power, all operating reactors are critical.

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FAST FACTS ABOUT NUCLEAR:

Nuclear Power Operation and Safety

In the effort to create an easily understandable shorthand for general audiences, it isn't unusual for the media to describe an "out-of-control" nuclear reactor as critical. Though this language succeeds at creating dramatic tension, it couldn't be further from the truth. Criticality, as defined by the Nuclear Regulatory Commission, is "the normal operating condition of a reactor, in which nuclear fuel sustains a fission chain reaction." This means that to sustain power, all operating reactors are critical.

Nuclear power is a safety-focused industry that is highly regulated by the NRC. Starting at construction, reactors are protected by several feet of concrete, encasing a reactor vessel made of about 6 inches of steel. These structures are built to withstand both natural and man-made disasters, including an airplane impact. Plants also practice internal safety measures by constantly reviewing, preparing, and practicing emergency plans, with some plants even creating and running virtual simulations like the ones at D.C. Cook to prepare for best and worst case scenarios. Every safety system in place has several redundant and diverse back-ups, operated by qualified, safety-conscious personnel. This "defense-in-depth" mindset is what keeps nuclear reactors operating safely and efficiently.