

*File: Site Criteria*

MAXIMUM CREDIBLE ACCIDENTS FOR REACTORS

VBWR - GE Vallecitos Boiling Water Reactor

The "maximum credible accident" for the VBWR is a static failure of the reactor vessel without an accompanying nuclear explosion or metal-water reaction. The enclosure pressure from this accident would be 42 psig and design pressure of the enclosure is 45 psig.

EBWR - ANL

The "maximum accident" considered is a major rupture of the reactor vessel that results in loss of water from the vessel. Zirconium will oxidize and expose hot uranium to room air. The fission products will then be released to the air of the containment vessel.

PWR - Pressurized Water Reactor

The "worst case" is a loss of coolant accident where a 15 in. ZD main coolant reactor vessel inlet pipe splits or ruptures at a point near the inlet nozzle at the bottom of the pressure vessel. No cooling of the core occurs during the period from 15 to 26 seconds.

PRDC Enrico Fermi Reactor

The "worst reasonable accident" consists of the liberation of the pressurized hot water present in the reactor and primary recirculation loop during normal operation, a nuclear excursion that would melt all the uranium oxide in the core and a chemical reaction of 25% of the zirconium in the fuel cladding with water

RCPA- Elk River

The "maximum credible accident: assures that one of the 12 inch inlet nozzles rupture and drains the water from the vessel. An estimated 21.2% of the fuel pins would melt with a ~~resultant~~ resultant release of fission products in the containment.

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Consolidated Edison Reactor 50-3

The "maximum credible accident" results from a mechanical rupture of the primary system equal in area to the cross sectional area of the largest primary loop pipe. Primary water is flashed to the containment vessel plus steam and water from the steam side of the boiler. As a result 25% of the steel cladding on fuel elements react with the water with a resultant release of fission products.

HTGR - Philadelphia Electric

The "maximum hazard described" is the ~~an~~ simultaneous release of all helium contained in the primary coolant circuit and the release of steam and hot water from the once-through boiler. The design pressure of the containment is based on this accident.

EER-II

The "maximum credible nuclear accident; is that the core loses its general structure and some boiling of uranium occurs. The reactor goes beyond prompt critical followed by a sudden surge of power resulting in high pressures and a violent disassembly.

ETR - Idaho

The "maximum credible accident in the startup accident which results in the steam blanketing the fuel elements.

GCRE - Gas Cooled Reactor Experiment

The "maximum credible accident is considered to be the ~~an~~ flooding accident, which adds reactivity to the system. Nearly all fuel elements are melted and about 1/4 is vaporized releasing fission products and explosion.

GE Critical (Vallecitos Valley)

The "maximum credible accident envisages the continuous introduction of water

into the core at the fastest pump ~~speed~~ speed when the core is loaded with all the available fuel rods

LMFR - Liquid Metal Fuel Reactor Experiment

For the "maximum credible accident; it is assumed that a large amount of excess reactivity is inserted into the core, control rods do not insert and dump valves do not open. Outlet nozzle would rupture and fuel contained above the outlet nozzle would spill into containment vessel. Complete vaporization and release of 20 percent of gross hazardous isotopes is assumed.