

6.2 SAFETY DESIGN BASIS

1. To provide adequate cooling of the reactor core under abnormal and accident conditions, various cooling systems shall be provided of such number, diversity, reliability, and redundancy that only a highly improbable combination of events could result in inadequate cooling of the core.
2. In the event of a loss-of-coolant accident, the Emergency Core Cooling Systems shall remove the residual stored heat and heat from radioactive decay from the reactor core at such a rate that fuel clad melting is prevented and any core mechanical deformation does not limit effective cooling of the reactor core.
3. The Emergency Core Cooling Systems shall provide for continuity of core cooling over the complete range of postulated break sizes in the nuclear system process barrier.
4. Emergency Core Cooling Systems shall be initiated automatically by conditions which sense the potential inadequacy of core cooling to limit the degree to which safety is dependent upon operator judgment in a time of stress.
5. Operation of the Emergency Core Cooling Systems shall be initiated regardless of the availability of offsite power supplies and the normal generating system of the plant. The system shall be able to accommodate any combination of real or spurious accident signals from one of the other two units (real coincident with a spurious signal, real followed by a spurious signal, and spurious followed by a real accident signal).
6. Action taken to affect containment integrity shall not negate the ability to achieve core cooling.
7. To provide assurance that the Emergency Core Cooling Systems shall operate effectively, each component required to operate in a loss-of-coolant accident shall be testable during normal operation of the nuclear system. The inboard isolation check valves can only be tested during cold shutdown (MODE 4 or 5).
8. The components of the Emergency Core Cooling Systems within the reactor vessel shall be designed to withstand the transient mechanical loadings during a loss-of-coolant accident, so that the required core cooling flow is not restricted.

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9. The equipment of the Emergency Core Cooling Systems shall withstand the physical effects of a loss-of-coolant accident so that the core can be effectively cooled. These effects are missiles, fluid jets, high temperature, pressure, humidity, and radiation.
10. The Emergency Core Cooling Systems shall be capable of withstanding earthquake ground motions without impairment of their functions.
11. To provide a reliable supply of water for the Emergency Core Cooling Systems, the qualified source of liquid for cooling the reactor core after a loss-of-coolant accident shall be a stored source located within the primary containment. The source shall be located in the primary containment in such a manner that a closed cooling water path is established during operation of the Emergency Core Cooling Systems.