

## **19H Seismic Capacity Analysis**

The information in this appendix of the reference ABWR DCD, including all subsections, tables and figures, is incorporated by reference with the following departure.

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### **19H.4.3 Components**

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Refer to changes in Table 19H-1.

Table 19H-1 Seismic Capacity Summary

Structure/Component	Failure Mode	Fragility <sup>1</sup>		
		Capacity <sup>2</sup> Am (g)	Combined <sup>3</sup> Uncertainty	HCPLF (g)
Electric equipment (chatter) function req'd during event function req'd after event	Relay chattering <sup>4</sup> Relay chattering <sup>4</sup>			
Switchgear/Motor control centers Manual valves <sup>3 5</sup> HVAC ducting Air handling units/Room A.C. Piping <sup>3 5</sup> Diesel-driven pumps <sup>3 5</sup>	Functional/Structural <sup>4 5</sup> Internal damage Support Blade rubbing Support Support			

- 1 Fragility not part of DCD. Refer to SSAR.
- 2 Capacities are in terms of median peak ground acceleration.
- 3 Combined uncertainties are composite logarithmic standard deviations of uncertainty and randomness components.
- 4 The potential for relay chatter was treated in the following manner. Only the scram safety function is required during a seismic event. This function is fail-safe, so relay chatter would cause a safe state failure (scram) even if relays were employed. For the ABWR, the scram actuating devices are solid state power switches with no failure mode similar to relay chatter. The scram function is supplemented by an alternate scram method (energizing the air header dump valves) to provide diversity. This method uses relay actuation, but no credit was taken for this capability in the seismic analysis. Therefore, there is no potential for relay chatter to prevent safety actions during a seismic event.  
  
Switchgear and motor control centers do include relays whose failure could prevent safety actions after the seismic event. It was assumed that the indicated capacity of this equipment was more representative than the specific relay chatter value since switchgear and motor control centers are normally qualified with the auxiliary relays in place. Also, the type of auxiliary relays used tend to be the most rugged of relay types and would have a higher capacity. The ~~multiplexer~~ I&C output devices for ECCS and RHR operation ~~have been~~ are assumed to be solid state devices (rather than relays), so the relay chatter failure mode does not apply.
- 5 Except for ACIWA (fire water) components (Table 19I-1).