

		Obstacles to Completing Usable, Endorsed Standard	
Scope		Examples of Technical Methods Gaps	Process Obstacles
LPSD	Internal Events	<ul style="list-style-type: none"> • Human reliability is a dominant contributor, but no consensus methods exist. • The recent draft Standard contains requirements for which there are no published methods. • There is no recent generic data for POS-specific initiating events required by the current draft Standard. • There is no generic data source for POS-specific equipment unreliability/unavailability data, as required by the draft Standard. 	<ul style="list-style-type: none"> • The industry is not pursuing any regulatory applications subject to RG 1.200 that would require a LPSD PRA. Therefore, there is no end-user need at this time. • The scope of the current draft Standard excludes internal fires due to lack of available methods. Issuance of a partial Standard does not seem beneficial and further demonstrates the lack of need for such a Standard. • There are no publicly available industry reference studies. • The only NRC reference studies (NUREG/CR-4133, -4134) have a very limited scope, are primarily simplistic, screening studies that would not meet the current state of PRA practice, and are based on outdated outage management practices and experience. • The external hazards requirements in the at-power PRA Standard have not been sufficiently exercised. In fact, the few applications that have been performed have identified many needed enhancements. Extending these requirements to LPSD should only occur when the at-power requirements are clear. • There are only limited LPSD analyses for new reactors. Like NRC reference studies, they are very limited in scope and level of detail. • A systematic assessment of technical gaps for current and new reactors is needed. • Methods, suitable to meet the risk-informed decision-making needs, need to be developed. • Sufficient pilots must be undertaken to address the requirements for representative plants and conditions. • Methods and Standard requirements need to be updated based on the insights from the pilots. • A pilot regulatory application needs to be undertaken, as was done with RG 1.200, Rev. 0.
	Internal Floods	<ul style="list-style-type: none"> • There is no generic data source on the likelihood of flooding events specific to non-power conditions. This is particularly true with respect to maintenance-induced floods. • There is no reference method for addressing the flood propagation in the diverse plant configurations that exist across POSs/outages. 	
	Internal Fires	<ul style="list-style-type: none"> • The Standard does not address internal fires • There are no published methods and data sources to address LPSD fire. 	
	Other Hazards	<ul style="list-style-type: none"> • The methods for external events PRA have not been widely applied, even for at-power conditions, much less LPSD. • The methods for seismic LPSD are largely untested. • The seismic response of key structures would be expected to be different during certain outage conditions, e.g., cavity flooded. This has not been addressed in past reference studies and would require significant investment. 	

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Level 2	At-Power	<ul style="list-style-type: none"> The NRC-sponsored SOARCA project provides significant new insights into the realistic Level 2 PRA response of plants at-power. This report has not been publicly released. Given that it changes the state-of-the-art and, more importantly, produces quite different insights from past Level 2 PRAs, it seems prudent to wait on the Level 2 PRA Standard so that this can be addressed. The PRA Policy Statement encourages the consideration of state-of-the-art methods. 	<ul style="list-style-type: none"> See LPSD. For current reactors, there is no regulatory application subject to RG 1.200 that requires a Level 2 PRA. For new reactors, there is no definition of the risk metrics to be used in regulatory applications. The current draft Standard requires significant revision in order to be ready for piloting.
	LPSD	<ul style="list-style-type: none"> SOARCA did not appear to address outage conditions directly, but the results and insights should be considered in the LPSD Level 2 PRA methods. 	
Level 3	At-Power	<ul style="list-style-type: none"> See comment on SOARCA under Level 2 at-power (above). 	<ul style="list-style-type: none"> See LPSD. There is no regulatory application subject to RG 1.200 that requires a Level 3 PRA. The current draft Standard requires significant revision in order to be ready for piloting.
	LPSD	<ul style="list-style-type: none"> See comment on SOARCA under Level 2 LPSD (above). 	