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Revised Data for NuScale modular reactor - Prepared on Jan 15, 2013							8/29/2013		
Parameter Group	Description	Units	Revised Data	Reference	Previous Data	Comments	Parameter	Unit	Notes
Reactor	power	MW(t)	160	Ref[12]	150	important variable	160	MW	
Normal operational values	core mass flow rate	kg/s	{{						
	core bypass flow rate								
	containment pressure	kPa							
	reactor pressure vessel pressure	Mpa							
	core inlet temperatures during normal operation	K							
	core outlet temperatures during normal operation	K							}} ^{3(a)-(c)}
Core/fuel/control rods									
	number of fuel assemblies		37	Ref[12]; Ref[7], pp17	same		same		
	fuel rods per assembly		17×17	Ref[12]	same		same		
	rod pitch	cm	{{						
	rod diameter	mm							
	number of control rod clusters								
	number of control rod assemblies								
	number of control rods per assembly								
	number of instrument tube per assembly								
	number of spacer grids								
	pellet outside diameter	inch							
	clad thickness	inch							
	material for control rods								
	absorber material diameter	inch							
	control rod outside diameter	inch							
	control rod length								
	axial peaking factor								
	assembly average radial peaking factor								}} ^{3(a)-(c)}
	fuel pellets		UO2	Ref[12]			same		
	clad material		Zirc-4	Ref[12]			same		
	U-235 enrichment		<4.95%	Ref[12]			same		
	active fuel length	cm	{{						
	length of plenum	cm							
	length of the fuel rods	cm							
	length of fuel assembly	cm							
RPV	inside diameter of the reactor pressure vessel	m							
	height of the RPV	m							
	inner diameter of the core barrel	m							
	Note: Elevations relative to bottom of pool (datum)								
	inside diameter of RPV lower head	m							
	bottom of core plate	m							
	top of core plate	m							
	thickness of core plate	m							
	bottom of active fuel	m							
	top of active fuel	m							
	bottom of upper core plate	m							}} ^{3(a)-(c)}

DHRS heat exchanger design						significantly revised		
	number of DHR		2		2		same	
	heat exchange type	-	straight tube	Ref[12]			same	
	number of heat exchange tubes	-	{{					
	tube diameter (outer)	inch						
	tube length	feet						
	tube thickness							
	tube orientation	-						
	steam header diameter (outer)	inch						
	condenser header diameter (outer)	inch						
	bottom of the condenser header							
	diameter of steam line to DHR from the main steam line to the DHR steam header OD	inch						
	diameter of steam line to DHR from the main steam line to the DHR steam header ID	inch						
	diameter of condensate line ID	inch						
	elevation of the connection between the condensate line and the containment							
DHR isolation valves (DHRIVs)								}} ^{3(a)-(c)}
	number of DHR		2	Ref[7], Figure 3-1, pp13			same	
	number of valves		2 per DHR	Ref[12]			same	
	location of the valves		{{					
	diameter of the valves							
DHRS system piping								
	length of DHRS inlet piping	inch						
	diameter of DHRS inlet piping ID	inch						
	length of DHRS exit piping	inch						
	diameter of DHRS exit piping	inch						
Activation set-points for the DHRIVs								
Others								
	reactor vent valve (RVV) diameter	inch						}} ^{3(a)-(c)}
	shutdown accumulator system (SAS)			Ref[12]		information NOT provided	no SAS	
	reactor pressure vessel (RPV) head vent system	{{						
	number of steam generator (SG) tubes							
	steam generator tube length increased							
	reactor protection system (RPS) logic and set-points updated							
Containment	lower containment inner diameter							
	upper containment inner diameter							}} ^{3(a)-(c)}
	{{							

Component	Parameter	Values
RPV pressure vessel (RPV) and internals	{{{	
Reactor core		
Core (COR package)		
Steam generators		
Decay heat removal		
Containment vessel and pool		}}}(a)-(c)

{{

}}(a)-(c)

DHR Activation Setpoints
{{{ }}(a)-(c)

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- 7 NuScale Power, LLC, "NuScale Plant Design Overview," NP-ER-0000-1198.
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- 9 Fay, T., "Inspections, Tests, Analyses, and Acceptance Criteria," *Presentation to NRC*, July, 2012, Agencywide Document Access and Management System (ADAMS) Accession No. ML12194A589.
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- 12 NuScale Power, LLC, "NuScale Power Response to NRC MELCOR Model Questions," NP-RI-0912-1907, September, 2012.