Plant Operating Range Analyzed by the Best-Estimate Large-Break LOCA Analysis for D. C. Cook Unit 2

PARAMETER		ANALYZED VALUE OR RANGE
1.0	**Plant Physical Description**	
a)	Dimensions	Nominal
b)	Pressurizer location	On an intact loop[4]
c)	Hot assembly location	Anywhere in core[1]
d)	Hot assembly type[2]	17xl7 V5 Fuel with ZIRLO® cladding or **Optimized ZIRLO™** cladding, non-IFBA or IFBA
e)	Steam generator tube plugging level[5]	≤10%
f)	Fuel assembly type[2]	17xl7 V5 Fuel with ZIRLO® cladding or **Optimized ZIRLO™** cladding, non-IFBA or IFBA
2.0	**Plant Initial Operating Conditions**	
2.1	**Reactor Power**	
a)	Maximum Core power	3479.8 MWt
b)	Peak heat flux hot channel factor (F_Q)[2][5]	≤ 2.335

Plant Operating Range Analyzed by the Best-Estimate Large-Break LOCA Analysis for D. C. Cook Unit 2

	PARAMETER	ANALYZED VALUE OR RANGE
c)	Peak hot rod enthalpy rise hot channel factor ($F_{\Delta H}$)[2][5]	≤ 1.644
d)	Hot assembly radial peaking factor (P_{HA})[2]	≤ 1.644 / 1.04
e)	Hot assembly heat flux hot channel factor (F_{QHA})	≤ 2.335 / 1.04
f)	Axial power distribution (P_{BOT}, P_{MID})[2]	Figure 14.3.1-2
g)	Low power region relative power (P_{LOW})[2]	$0.20 \le P_{LOW} \le 0.70$
h)	Hot assembly burn up	≤ 75,000 MWD / MTU, lead rod[1][3]
i)	MTC	≤ 0 at hot full power (HFP)
j)	Typical cycle length	18 months
k)	Minimum core average burn up[2]	≥10,000 MWD / MTU
l)	Maximum steady state depletion, F_Q[2]	1.90
2.2	**Fluid Conditions**	
a)	T_{AVG}[5]	$547.6 - 5.6°F \le T_{AVG} \le 578.1 + 4.1°F$
b)	Pressurizer pressure	2,100 - 63 psia ≤ P_{RCS} ≤ 2,100 + 63 psia 2,250 - 63 psia ≤ P_{RCS} ≤ 2,250 + 63 psia
c)	Minimum thermal design flow	88,500 gpm / loop

Plant Operating Range Analyzed by the Best-Estimate Large-Break LOCA Analysis for D. C. Cook Unit 2

PARAMETER		ANALYZED VALUE OR RANGE
d)	Upper head design	T_{HOT}
e)	Pressurizer level (at hot full power)	59.8% of span (High T_{AVG}) 40.0% of span (Low T_{AVG})
f)	Accumulator temperature(5)	60ºF ≤ T_{ACC} ≤ 120ºF
g)	Accumulator pressure	599.7 psia ≤ P_{ACC} ≤ 672.7 psia
h)	Accumulator liquid volume	921 ft^3 ≤ V_{ACC} ≤ 971 ft^3
i)	Minimum accumulator boron	2228 ppm
3.0	**Accident Boundary Conditions**	
a)	Minimum safety injection flow	Table 14.3.1-4a and 14.3.1-4b
b)	Safety injection temperature(5)	70ºF ≤ SI Temp ≤ 105ºF
c)	Safety injection delay(5)	27 seconds (with offsite power) 54 seconds (with LOOP)
d)	Containment modeling	See Figures 14.3.1-3 thru 14.3.1-9 and raw data in Tables 14.3.1-2, 14.3.1-3, & 14.3.1-7
e)	Initial containment pressure	See Table 14.3.1-2
f)	Containment spray initiation delay	See Table 14.3.1-2

Plant Operating Range Analyzed by the Best-Estimate Large-Break LOCA Analysis for D. C. Cook Unit 2

	PARAMETER	ANALYZED VALUE OR RANGE
g)	Deck Fan initiation delay	See Table 14.3.1-2
h)	Single failure	Loss of one ECCS train

Notes:

1. *44 peripheral locations will not physically be lead power assembly.*
2. *In the Westinghouse Reload Safety Analysis Checklist (RSAC) process, this parameter is identified as a key safety analysis parameter that could be impacted by a fuel reload.*
3. *The fuel temperature and rod internal pressure data is only provided up to 62,000 MWD / MTU. In addition, the hot assembly / hot rod will not have a burn up this high in ASTRUM analyses.*
4. *Analyzing the pressurizer as being located on an intact loop is limiting per Westinghouse methodology.*
5. *Parameter values affected by evaluation described in Section 14.3.1.5.1*