

	INDIANA AND MICHIGAN POWER D. C. COOK NUCLEAR PLANT UPDATED FINAL SAFETY ANALYSIS REPORT	Revision: 19.1 Table: 14.1.0-2 Page: 1 of 4
---	--	--

SUMMARY OF INITIAL CONDITIONS AND COMPUTER CODES USED

REACTIVITY COEFFICIENTS ASSUMED										
Fault Conditions	Computer Codes Utilized	Moderator Temperature (pcm/°F)	Moderator Density (ΔK/gm/cc)	Doppler	DNB Correlation	Revised Thermal Design Procedure	Initial NSSS Thermal Power Output ¹ (MWt)	Reactor Vessel Coolant Flow (GPM)	Vessel Average Temperature (°F)	Pressurizer Pressure (PSIA)
Uncontrolled RCCA Bank Withdrawal from a Subcritical Condition	TWINKLE FACTRAN THINC	See Section 14.1.1.2	N/A ²	³	W-3 ANF WRB-2 and W-3 V-5	No	0	162,840	547.0	2037.0 ⁴
RCCA Misalignment	LOFTRAN THINC	N/A	N/A	N/A	W-3 ANF WRB-2 V-5	Yes	3600	366,400	581.3	2100.0 ⁵

¹ Includes reactor coolant pump heat, if applicable.

² N/A – Not Applicable

³ Zero Power Doppler Power Defect at BOL assumed to be – 1000 pcm.

⁴ Core Pressure

⁵ For transition cycles, pressurizer pressure is 2250 psia.

	INDIANA AND MICHIGAN POWER D. C. COOK NUCLEAR PLANT UPDATED FINAL SAFETY ANALYSIS REPORT	Revision: 19.1 Table: 14.1.0-2 Page: 2 of 4
---	--	--

SUMMARY OF INITIAL CONDITIONS AND COMPUTER CODES USED

		REACTIVITY COEFFICIENTS ASSUMED								
Fault Conditions	Computer Codes Utilized	Moderator Temperature (pcm/°F)	Moderator Density (ΔK/gm/cc)	Doppler	DNB Correlation	Revised Thermal Design Procedure	Initial NSSS Thermal Power Output ¹ (MWt)	Reactor Vessel Coolant Flow (GPM)	Vessel Average Temperature (°F)	Pressurizer Pressure (PSIA)
Uncontrolled Boron Dilution	N/A N/A	N/A N/A	N/A N/A	N/A N/A	N/A N/A	N/A N/A	3600 0	N/A N/A	N/A N/A	N/A N/A
Loss of Forced Reactor Coolant Flow	LOFTRAN FACTRAN THINC	+5	N/A	Max ⁶	W-3 ANF WRB-2 V-5	Yes	3608	366,400	581.3 ⁷	2100.0 ⁽⁵⁾
Locked Rotor (Peak Pressure)	LOFTRAN	+5	N/A	Max ⁽⁶⁾	N/A	N/A	3680	354,000	585.4	2312.6
Locked Rotor (Peak Clad Temp)	LOFTRAN FACTRAN	+5	N/A	Max ⁽⁶⁾	N/A	N/A	3680	354,000	585.4	2037.4

⁶ Maximum Doppler power coefficient (pcm/%power) = -19.4 + 0.002Q, where Q is in MWt (see Figure 14.1.0-1)

⁷ For Transition Cycles, Vessel Average Temperature is 576°F.

	INDIANA AND MICHIGAN POWER D. C. COOK NUCLEAR PLANT UPDATED FINAL SAFETY ANALYSIS REPORT	Revision: 19.1 Table: 14.1.0-2 Page: 3 of 4
---	--	--

SUMMARY OF INITIAL CONDITIONS AND COMPUTER CODES USED

		REACTIVITY COEFFICIENTS ASSUMED								
Fault Conditions	Computer Codes Utilized	Moderator Temperature (pcm/°F)	Moderator Density (ΔK/gm/cc)	Doppler	DNB Correlation	Revised Thermal Design Procedure	Initial NSSS Thermal Power Output ¹ (MWt)	Reactor Vessel Coolant Flow (GPM)	Vessel Average Temperature (°F)	Pressurizer Pressure (PSIA)
Locked Rotor (Rods-in-DNB)	LOFTRAN FACTRAN THINC	+5	N/A	Max ⁽⁶⁾	WRB-2	Yes	3608	366,400	581.3	2100.0
Loss of Normal Feedwater	LOFTRAN	0	N/A	Max ⁽⁶⁾	N/A	N/A	3680	354,000	585.4	2312.6
Loss of Offsite Power (LOOP) to the Station Auxiliaries	LOFTRAN	0	N/A	Max ⁽⁶⁾	N/A	N/A	3680	354,000	541.4	2312.6
Rupture of a Steam Pipe	LOFTRAN THINC	See Figure 14.2.5-1	N/A	See Figure 14.2.5-2	W-3 ANF W-3 V-5	NO	0	354,000	547.0	2100.0

	INDIANA AND MICHIGAN POWER D. C. COOK NUCLEAR PLANT UPDATED FINAL SAFETY ANALYSIS REPORT	Revision: 19.1 Table: 14.1.0-2 Page: 4 of 4
---	--	--

SUMMARY OF INITIAL CONDITIONS AND COMPUTER CODES USED

REACTIVITY COEFFICIENTS ASSUMED										
Fault Conditions	Computer Codes Utilized	Moderator Temperature (pcm/°F)	Moderator Density (ΔK/gm/cc)	Doppler	DNB Correlation	Revised Thermal Design Procedure	Initial NSSS Thermal Power Output ¹ (MWt)	Reactor Vessel Coolant Flow (GPM)	Vessel Average Temperature (°F)	Pressurizer Pressure (PSIA)
Rupture of a Control Rod Drive Mechanism Housing	TWINKLE FACTRAN	See Section 14.2.6	N/A	⁸ ⁹	N/A	N/A	3660 ¹⁰ 0	354, 000 162, 840	585.4 547.0	2037.4 ⁽⁴⁾
Rupture of Feedwater Pipe	LOFTRAN	N/A	.54	Max ⁽⁶⁾	N/A	N/A	3680	354, 000	585.4	2162.6

⁸ Full Power Doppler Power defect at BOL and EOL assumed to be -966 pcm and -893 pcm respectively.

⁹ Zero Power Doppler only Power defect at BOL and EOL assumed to be -965 pcm and -849 pcm, respective.

¹⁰ Core thermal power.