34A Control Rod Calibration Form 34A

Date Started: _____

Checker Name(s) for entire form: _____

_____

_____

Rod Position Indications

As Found	**DOWN** light lit		**UP** light lit	
	Rod Indication	Multitrend	Rod Indication	Multitrend
Safety Rod				
Shim Rod				
Reg Rod				

As Left	**DOWN** light lit (0.0-0.5%)		**UP** light lit (99.5-100.5%)	
	Rod Indication	Multitrend	Rod Indication	Multitrend
Safety Rod				
Shim Rod				
Reg Rod				

_____ _____
Operator Signature Date

Control Rod Withdrawal and Insertion Times

	Withdrawal Time (sec)	Insertion Time (sec)
Safety Rod		
Shim Rod		
Reg Rod		

_____ _____
Operator Signature Date

Control Rod Drop Times

Safety Rod: _____ msec Shim Rod: _____ msec Reg Rod: _____ msec

Rod drop times are less than 1 second for full motion: [____]

_____ _____
Operator Signature Date

Reg Rod Calibration

No operations above 5 watts for 48 hours: [____]

Startup Checklist Complete: [____]

Rod Position Indication is accurate with ±0.5% of full motion: [____]

Period Timer Calibrated at 30% and 81.5% of Linear Channel: [____]

Voltage Reading with Linear at 30% _____ VDC
80% _____ VDC

Period Timer Connected to Linear Channel: [____]

Initial data when stable at 5 Watts for at least 2 minutes.	Safety Rod	Shim Rod	Reg Rod (at bottom)

Note: These pulls aim for a 10 second stable period. The transient period will be much shorter.

Target Reg Rod After Pull	Actual Reg Rod After Pull	Period (ms)
33		
51		
69		
UP Light		

_____ _____
Operator Signature Date

Safety Rod Calibration

Is it a different day than the Reg Rod Calibration? [____]

If yes, complete the following:

No operations above 5 watts for 48 hours: [____]

Startup Checklist Complete: [____]

Rod Position Indication is accurate with ±0.5% of full motion: [____]

Period Timer Calibrated at 30% and 81.5% of Linear Channel: [____]

Voltage Reading with Linear at 30% _____ VDC
80% _____ VDC

Period Timer Connected to Linear Channel: [____]

Initial data when stable at 5 Watts for at least 2 minutes.	Safety Rod	Shim Rod (at top)	Reg Rod (at top)

Note: These pulls aim for a 10 second stable period. The transient period will be much shorter.

Target Safety Rod After Pull	Actual Safety Rod After Pull	Period (ms)
47		
55		
62		
70		
80		
UP Light		

_____ _____
Operator Signature Date

Shim Rod Calibration

Is it a different day than the Reg Rod Calibration? [____]

If yes, complete the following:

No operations above 5 watts for 48 hours: [____]

Startup Checklist Complete: [____]

Rod Position Indication is accurate with ±0.5% of full motion: [____]

Period Timer Calibrated at 30% and 81.5% of Linear Channel: [____]

Voltage Reading with Linear at 30% _____ VDC
80% _____ VDC

Period Timer Connected to Linear Channel: [____]

Initial data when stable at 5 Watts for at least 2 minutes.	Safety Rod (at top)	Shim Rod	Reg Rod (at top)

Note: These pulls aim for a 10 second stable period. The transient period will be much shorter.

Target Shim Rod After Pull	Actual Shim Rod After Pull	Period (ms)
47		
55		
62		
70		
80		
UP Light		

_____ _____
Operator Signature Date

Concluding Rod Worth Analysis

Data entered in rodcal.py and checked: [____]

Rod Worths printed and taped in back of Main Logbook: [____]

Maximum reactivity addition rate: _____ (< $0.16/sec) [____]

Core Excess: _____ (< $3.00) [____]

Shutdown Margin: _____ (> $1.00) [____]

Shutdown Margin with most reactive control rod stuck out: _____ (> $0.50) [____]

_____ _____

Checker Signature Date

Banked Rod Height Measurement

Power	Banked Rod Height	Core Excess
5 W		
1 kW		
25 kW		
50 kW		
75 kW		
100 kW		
125 kW		
150 kW		
175 kW		
200 kW		
225 kW		
230 kW		

Data entered in spreadsheet and checked: [____]

Banked heights printed and taped in back of Main Logbook: [____]

_____ _____

Operator Signature Date

Reviewed by: _____ _____

Operations Supervisor Date