Table 16.6-5

Shutdown PRA Core Damage Sequences

Event Tree / Initiating Events	Mode	Core damage sequences
Loss of PSWS	5	M5-LPSW-6 M5-LPSW-7 M5-LPSW-10 M5-LPSW-11 M5-LPSW-12
Loss of RWCU/SDC	5	M5-LRWC-9 M5-LRWC-10 M5-LRWC-14 M5-LRWC-15 M5-LRWC-16
Loss of Pref Power	5	M5-LOP-9 M5-LOP-10 M5-LOP-14 M5-LOP-15 M5-LOP-16
Loss of PSWS	5 open	M5O-LPSW-6 M5O-LPSW-7 M5O-LPSW-10 M5O-LPSW-11 M5O-LPSW-12
Loss of RWCU/SDC	5 open	M5O-LRWC-9 M5O-LRWC-10 M5O-LRWC-14 M5O-LRWC-15 M5O-LRWC-16
Loss of Pref Power	5 open	M5O-LOP-9 M5O-LOP-10 M5O-LOP-14 M5O-LOP-15 M5O-LOP-16
Loss of PSWS	6 Unflooded	M6U-LPSW-4
Loss of RWCU/SDC	6 Unflooded	M6U-G31-6
Loss of Pref Power	6 Unflooded	M6U-LOP-6
LOCA - RWCU/SDC below TAF	5	M5-LOCA-R5 M5-LOCA-R6
		M5-LOCA-R7
LOCA - Other than FW or GDCS	5	M5-LOCA-OT5
		M5-LOCA-OT6
LOCA - FW Line A	5	M5-LOCA-F3
LOCA - Instrument Line below TAF	5	M5-LOCA-I5 M5-LOCA-I6

Table 16.6-5

Shutdown PRA Core Damage Sequences

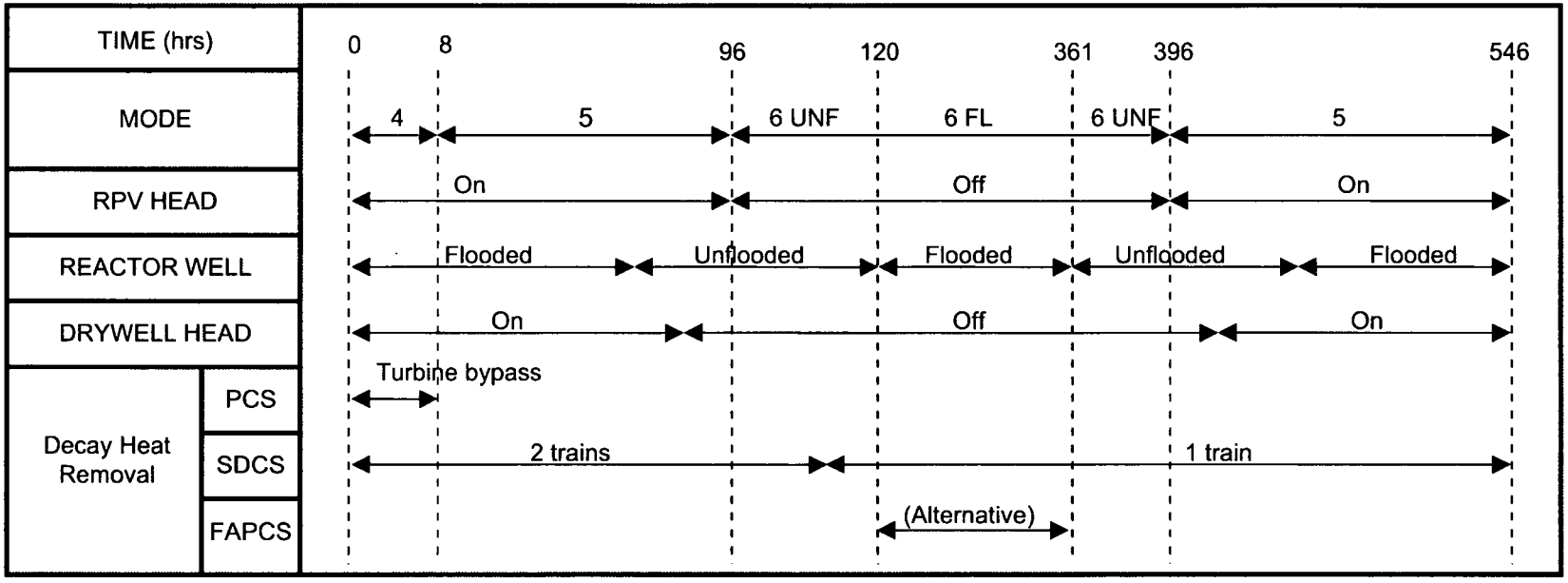
Event Tree / Initiating Events	Mode	Core damage sequences
		M5-LOCA-I7
LOCA - GDCS	5	M5-LOCA-G5 M5-LOCA-G6
LOCA - RWCU/SDC below TAF	5 open	M5O-LOCA-R5 M5O-LOCA-R6
		M5O-LOCA-R7
LOCA - Other than FW or GDCS	5 open	M5O-LOCA-OT5
		M5O-LOCA-OT6
LOCA - FW Line A	5 open	M5O-LOCA-F3
LOCA - Instrument Line below TAF	5 open	M5O-LOCA-I5 M5O-LOCA-I6
		M5O-LOCA-I7
LOCA - GDCS	5 open	M5O-LOCA-G5 M5O-LOCA-G6
LOCA - RWCU/SDC below TAF	6 Unflooded	M6U-LOCA-R5 M6U-LOCA-R6
LOCA - Other than FW or GDCS	6 Unflooded	M6U-LOCA-OT5
LOCA - FW Line A	6 Unflooded	M6U-LOCA-F3
LOCA - Instrument Line below TAF	6 Unflooded	M6U-LOCA-I5 M6U-LOCA-I6
LOCA - GDCS	6 Unflooded	M6U-LOCA-G5
LOCA - Instrument Line below TAF	6 Flooded	M6F-LOCA-I2
LOCA - RWCU/SDC below TAF	6 Flooded	M6F-LOCA-R2

Table 16.6-6

Shutdown PRA Core Damage Sequences

#	Probability	% of CDF	Sequence	Cutsets	
1	2.93E-09	313.340%	M6F-LOCA-I2	%M6F_LOCA_I	DWH-2
2	2.35E-09	60.2056.50%	M5-LOCA-I6	%M5-LOCA-I	DWH-2
3	8.92E-10	70.4066.00%	M6F-LOCA-R2	%M6F_LOCA_R	DWH-1
4	7.33E-10	78.7073.80%	M6U-LCOA-I6	%M6U_LOCA-I	DWH-2
5	7.13E-10	86.9081.40%	M5-LOCA-R6	%M5-LOCA-RW	DWH-1
6	5.86E-10	93.5087.70%	M5O-LOCA-I6	%M5O_LOCA_I	DWH-2
7	2.23E-10	96.1090.10%	M6U-LCOA-R6	%M6U_LOCA-RW	DWH-1
8	1.78E-10	98.1092.00%	M5O-LOCA-R6	%M5O_LOCA_R	DWH-1

Note: All the dominant cutsets in the internal events shutdown model are from LOCA events below the TAF. All these sequences have only one cutset; the initiating event combined with failure to close the lower drywell hatch.



Note: Node 5 Open is assumed to occur the last 24 hours of Mode 5 before refueling (hours 72-96), and the first 24 hours of Mode 5 following refueling (hours 396-420).

Figure 16.2-1. ESBWR Refuel Outage Plan for Shutdown PRA

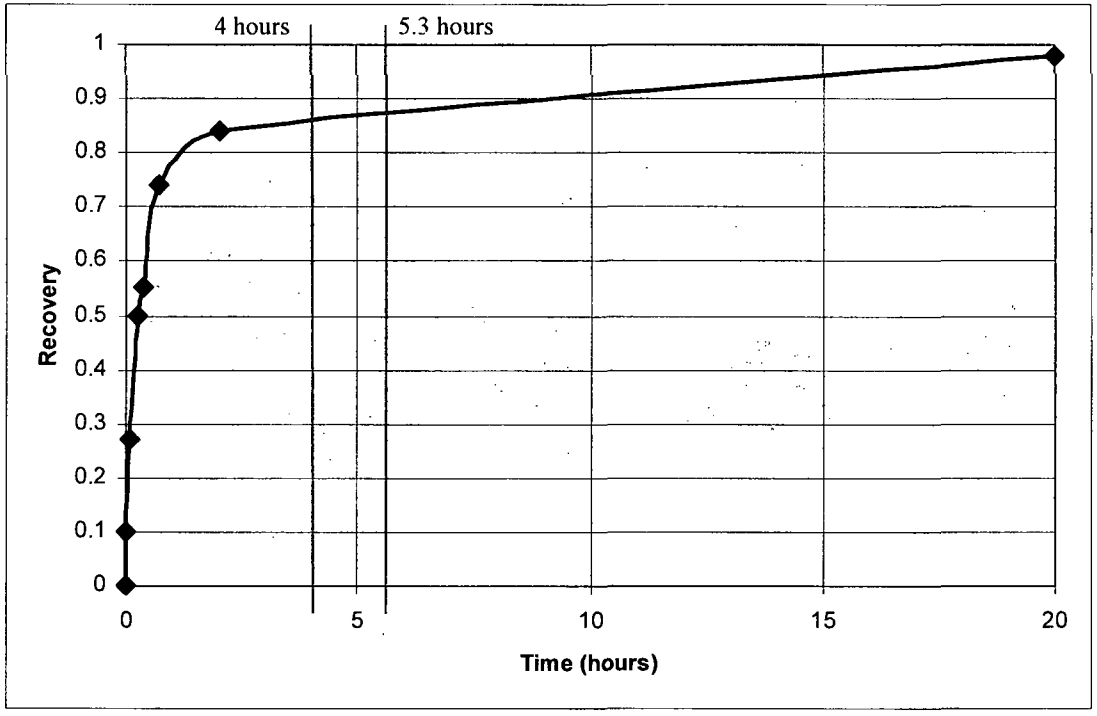


Figure 16.3-1. RWCU/SDCS Recovery Probability (Cumulative)

Figure 16.3-2. "Plant-Centered" LOPP Recovery Probability (Cumulative) (Deleted)

Figure 16.3-3. "External" LOOP Recovery Probability (Cumulative) (Deleted)

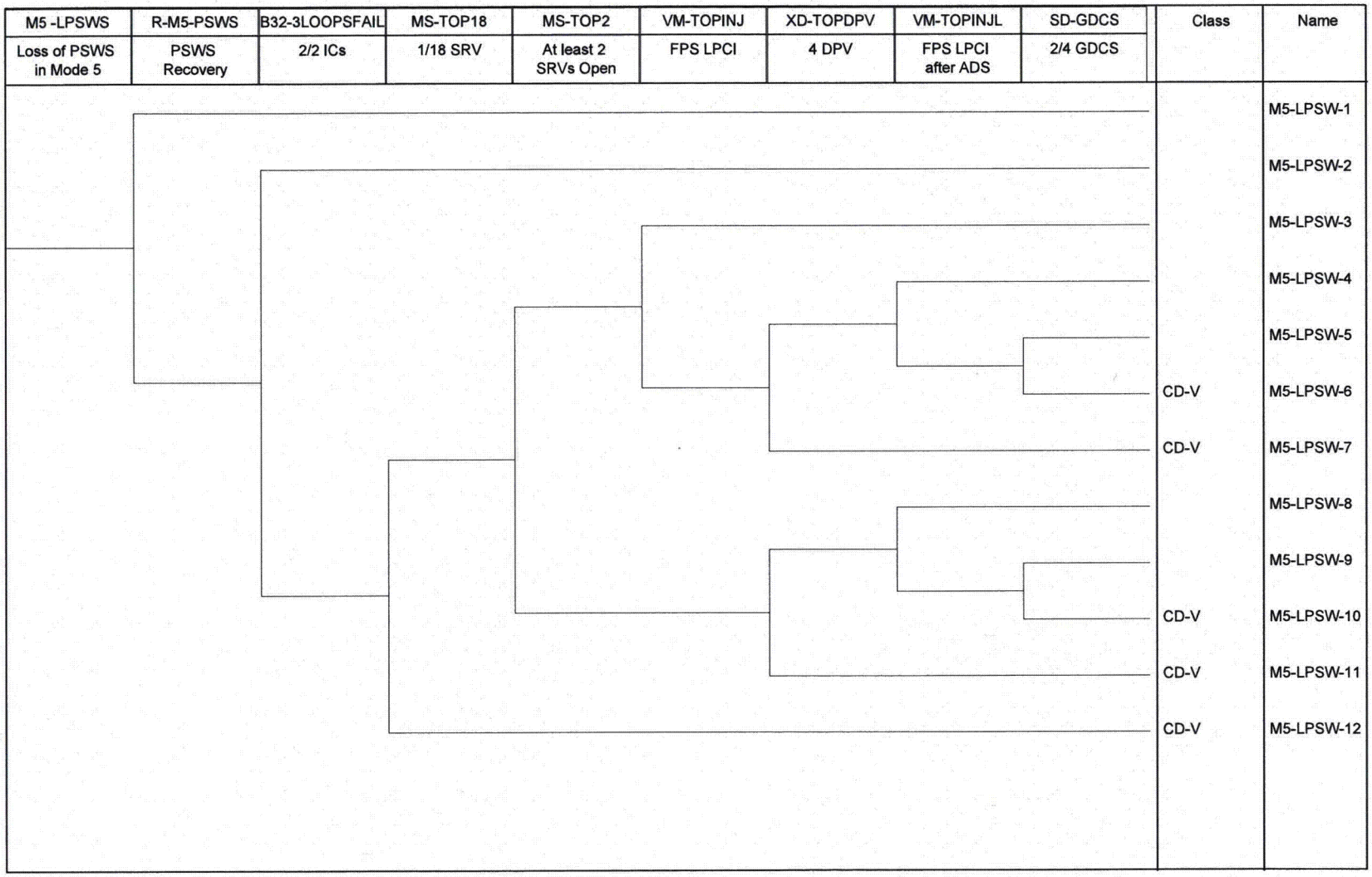


Figure 16.4-1. Loss of all Service Water PSWS/RCCWS (Mode 5)

~~**Figure 16.4-1a. Loss of Both RWCU/SDCS Trains (Mode 5) RWCU5A (Deleted)**~~

~~**Figure 16.4-1b. Loss of Both RWCU/SDCS Trains (Mode 5) RWCU5B (Deleted)**~~

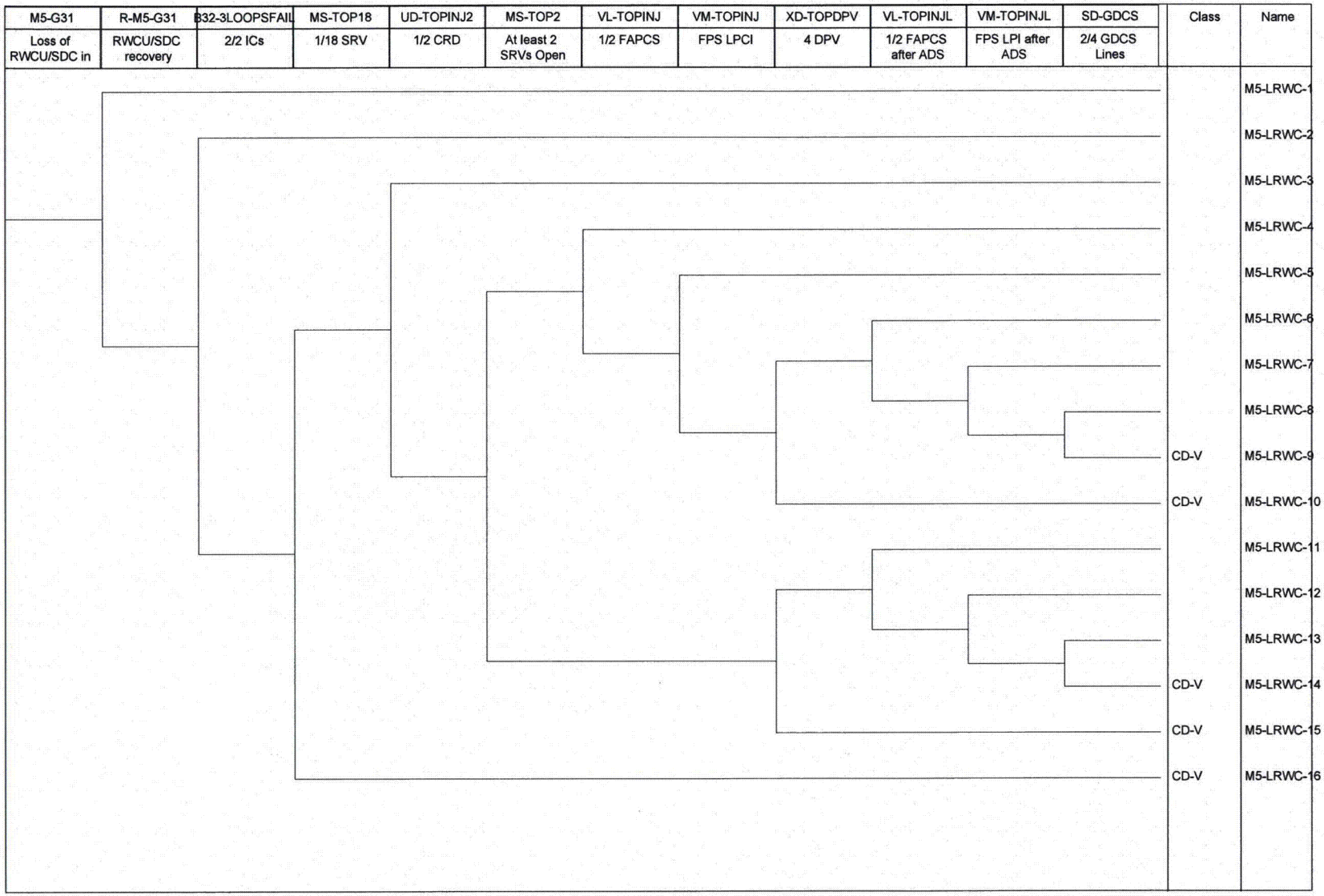


Figure 16.4-2. Loss of Both RWCU/SDCS Trains (Mode 5)

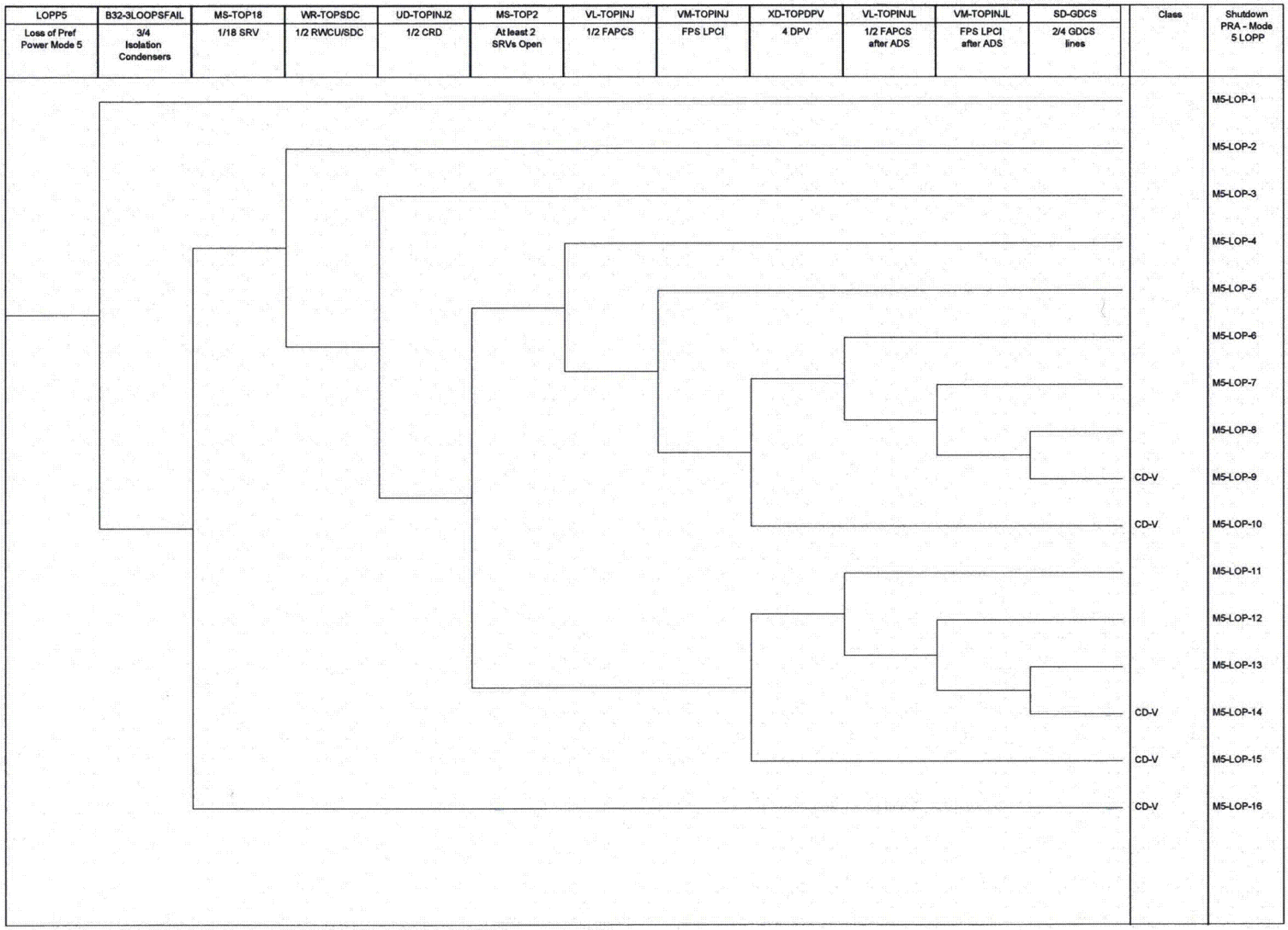


Figure 16.4-3. Loss of Preferred Power (Mode 5)

~~**Figure 16.4-3a. Loss of Preferred Power (Mode 5) LOPP5A (Deleted)**~~

~~**Figure 16.4-3b. Loss of Preferred Power (Mode 5) LOPP5B (Deleted)**~~

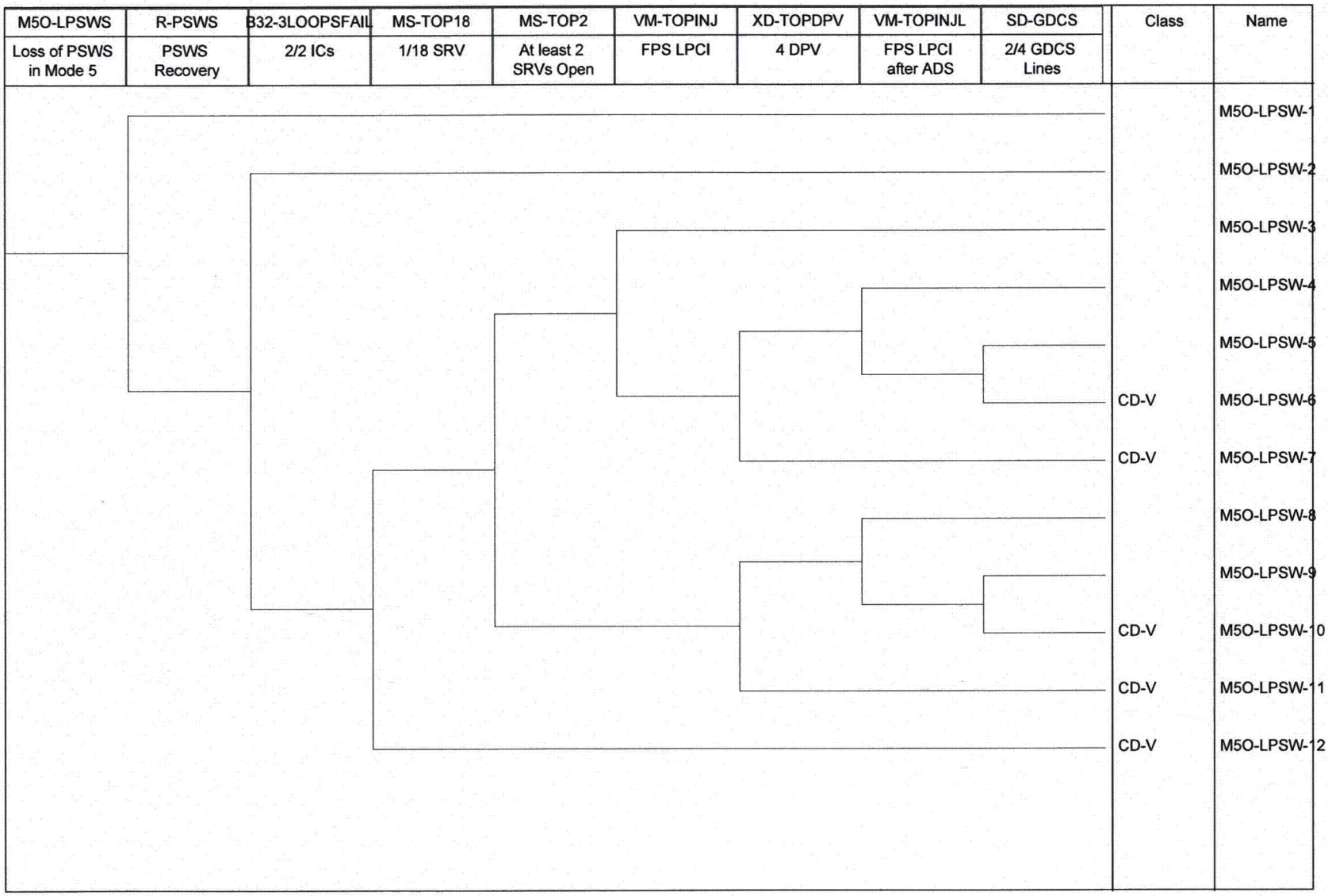


Figure 16.4-4. Loss of all Service Water PSWS/RCCWS (Mode 5 Open)

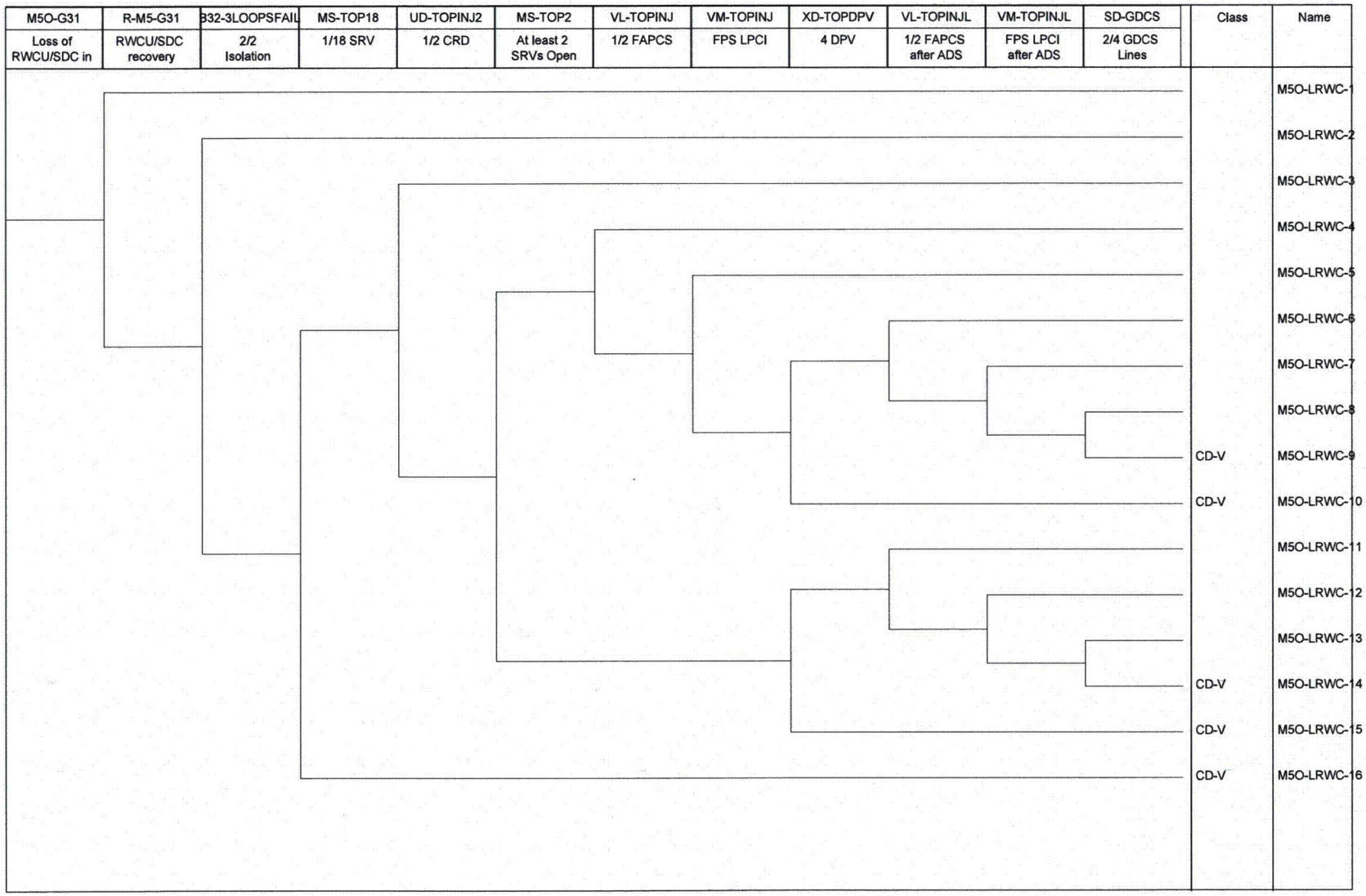


Figure 16.4-5. Loss of Both RWCU/SDCS Trains (Mode 5 Open)

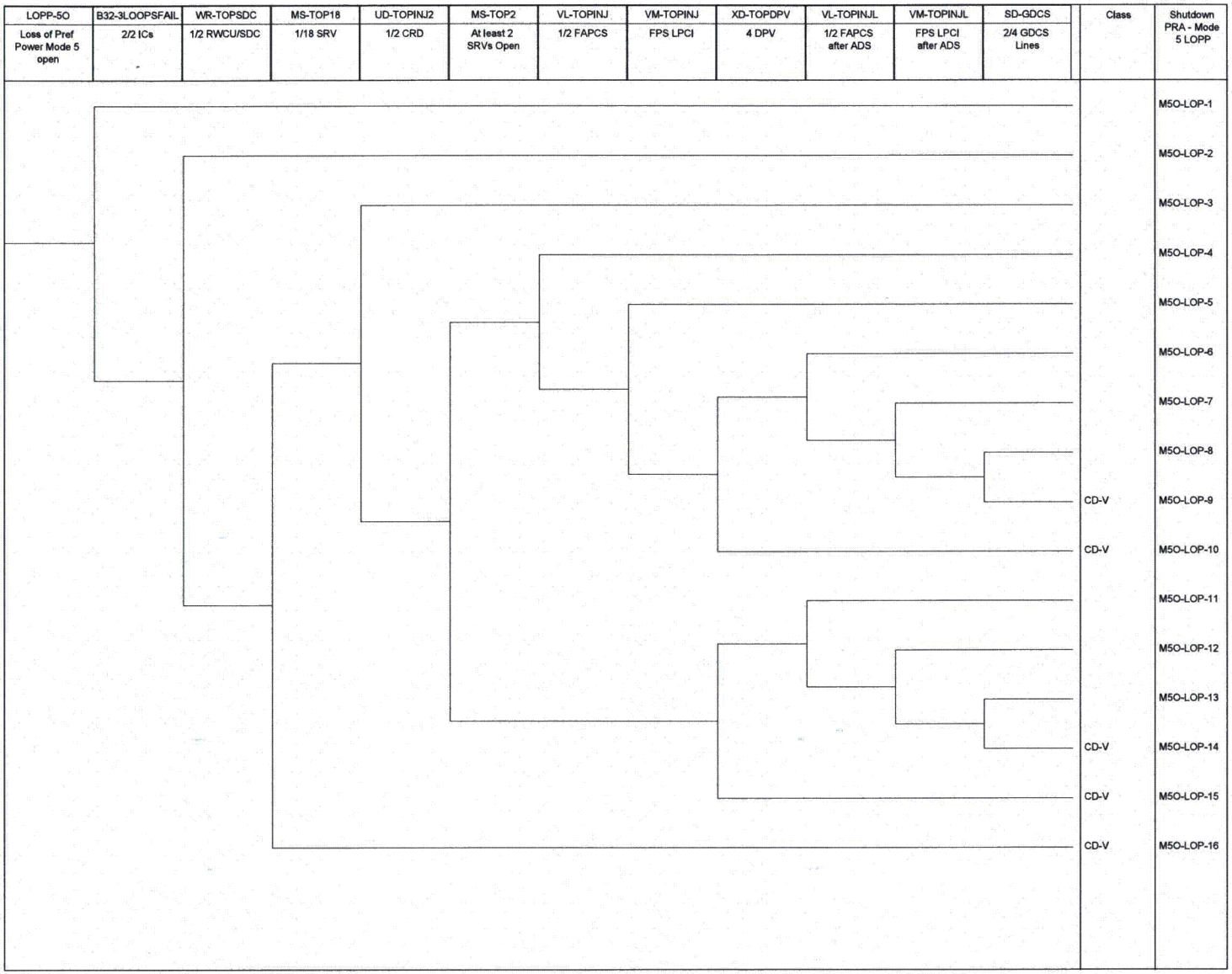


Figure 16.4-6. Loss of Preferred Power (Mode 5 Open)

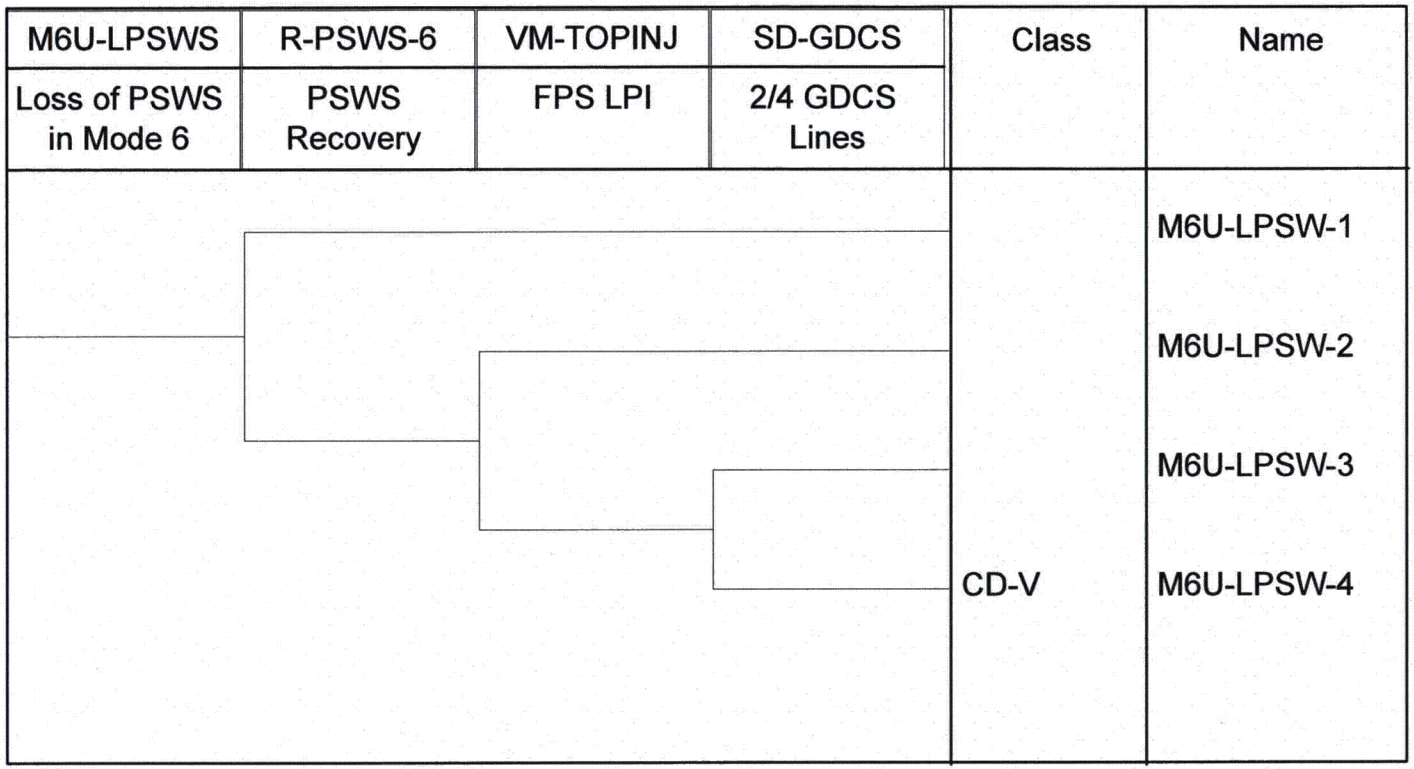


Figure 16.4-7. Loss of all Service Water PSWS/RCCWS (Mode 6 Unflooded)

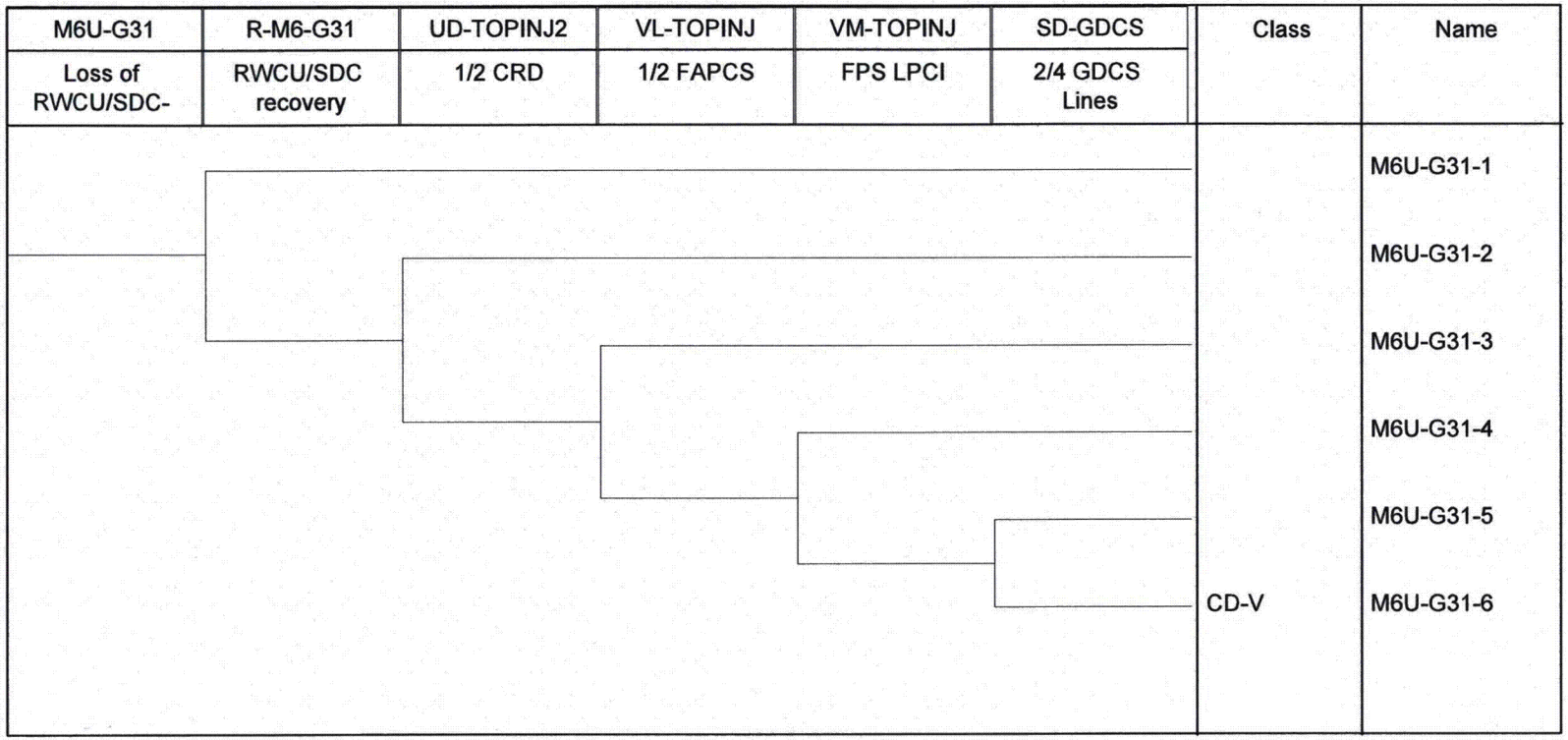


Figure 16.4-8. Loss of Both RWCU/SDCS Trains (Mode 6 Unflooded)

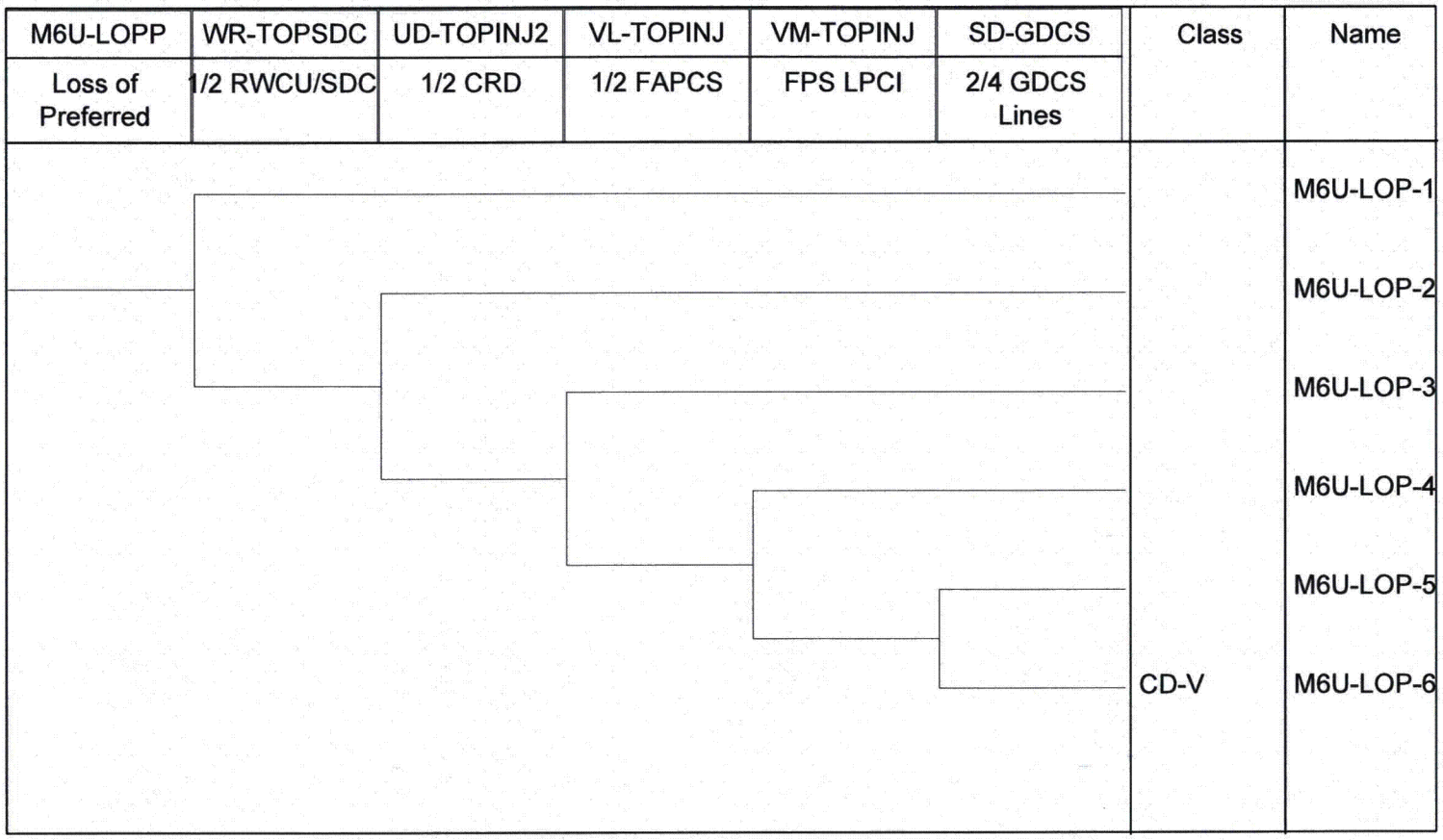


Figure 16.4-9. Loss of Preferred Power (Mode 6 Unflooded)

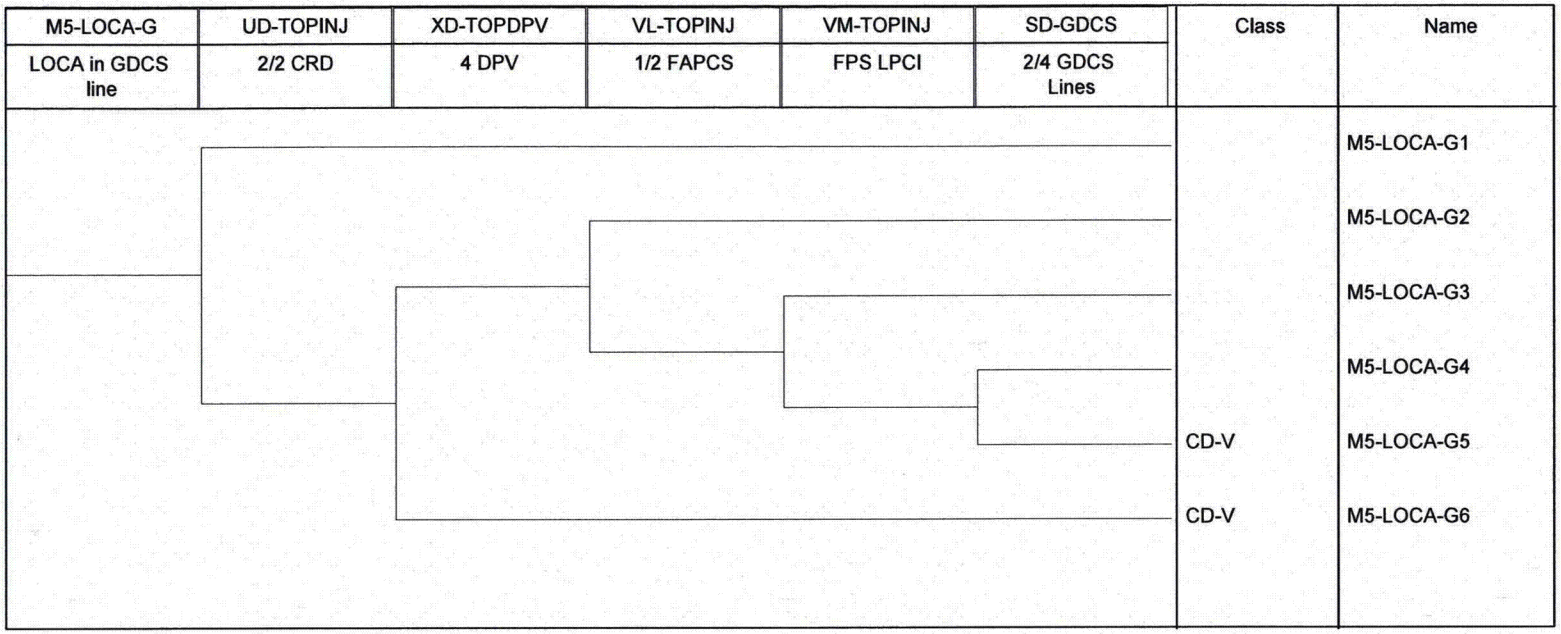


Figure 16.4-10. GDCS LOCA (Mode 5)

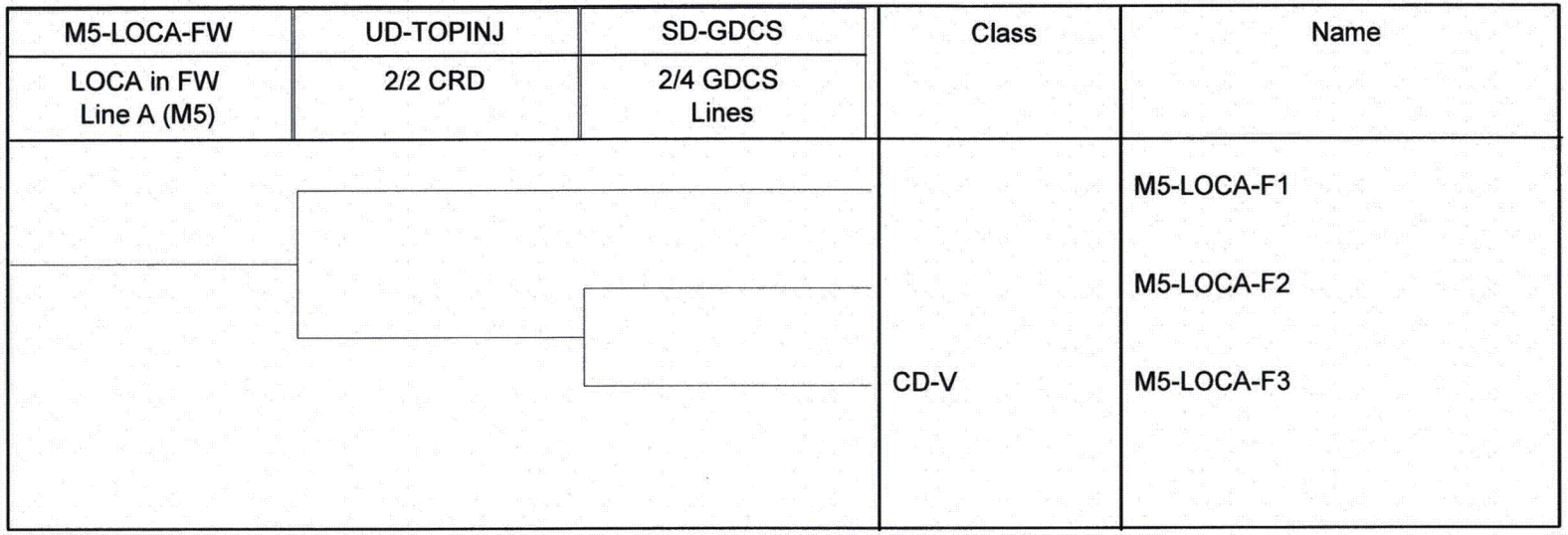


Figure 16.4-11. LOCA in Feedwater line (Mode 5)

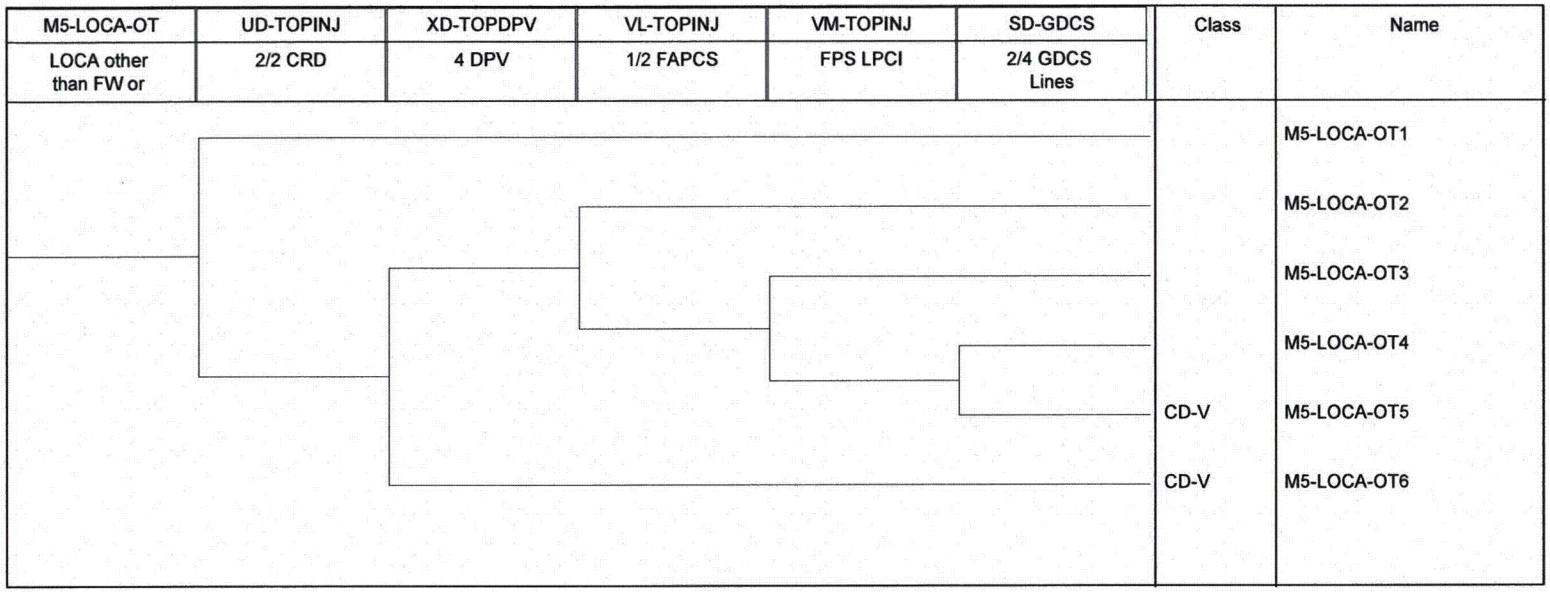


Figure 16.4-12. LOCA other than FW or GDCS (Mode 5)

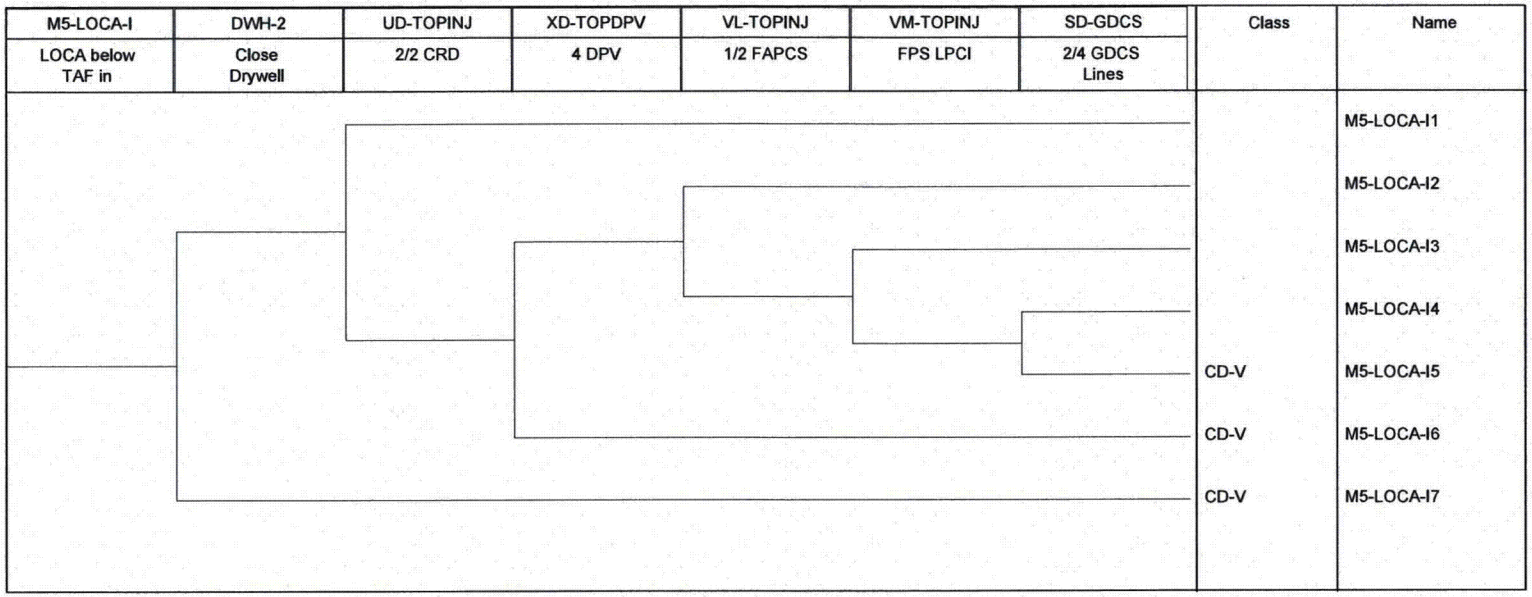


Figure 16.4-13. LOCA below TAF in Instrument line (Mode 5)

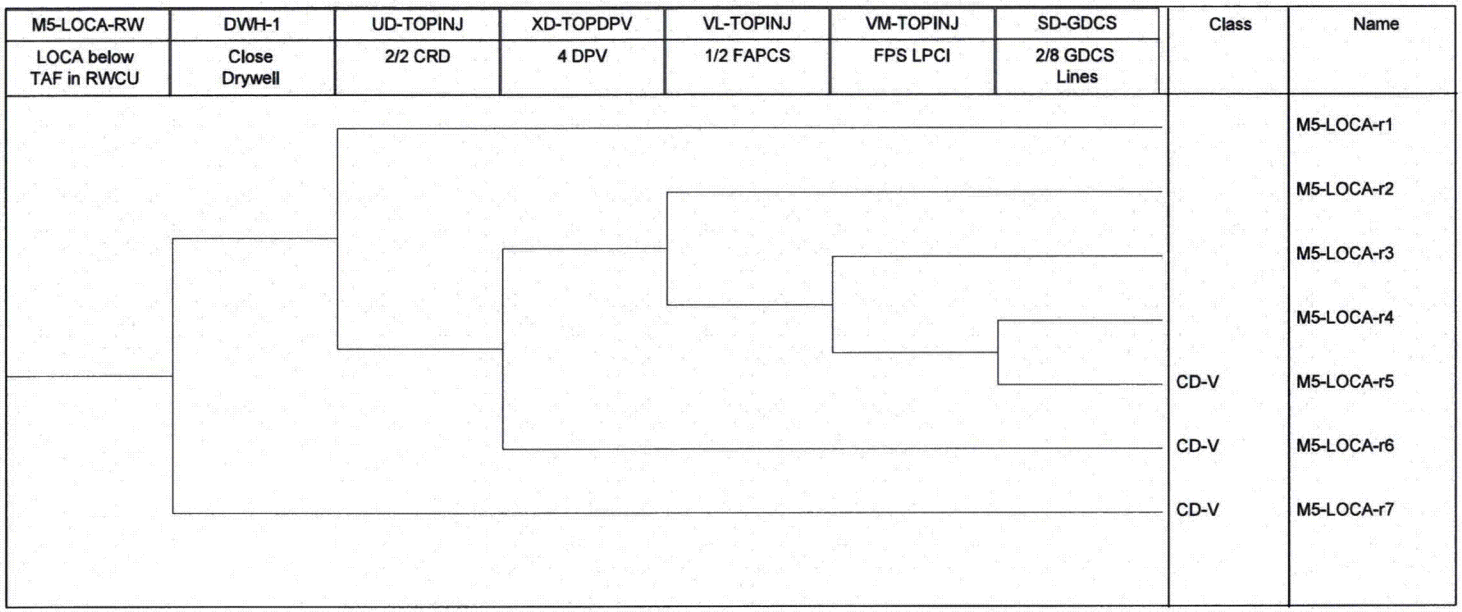


Figure 16.4-14. LOCA Below TAF in RWCU Drain Line (Mode 5)

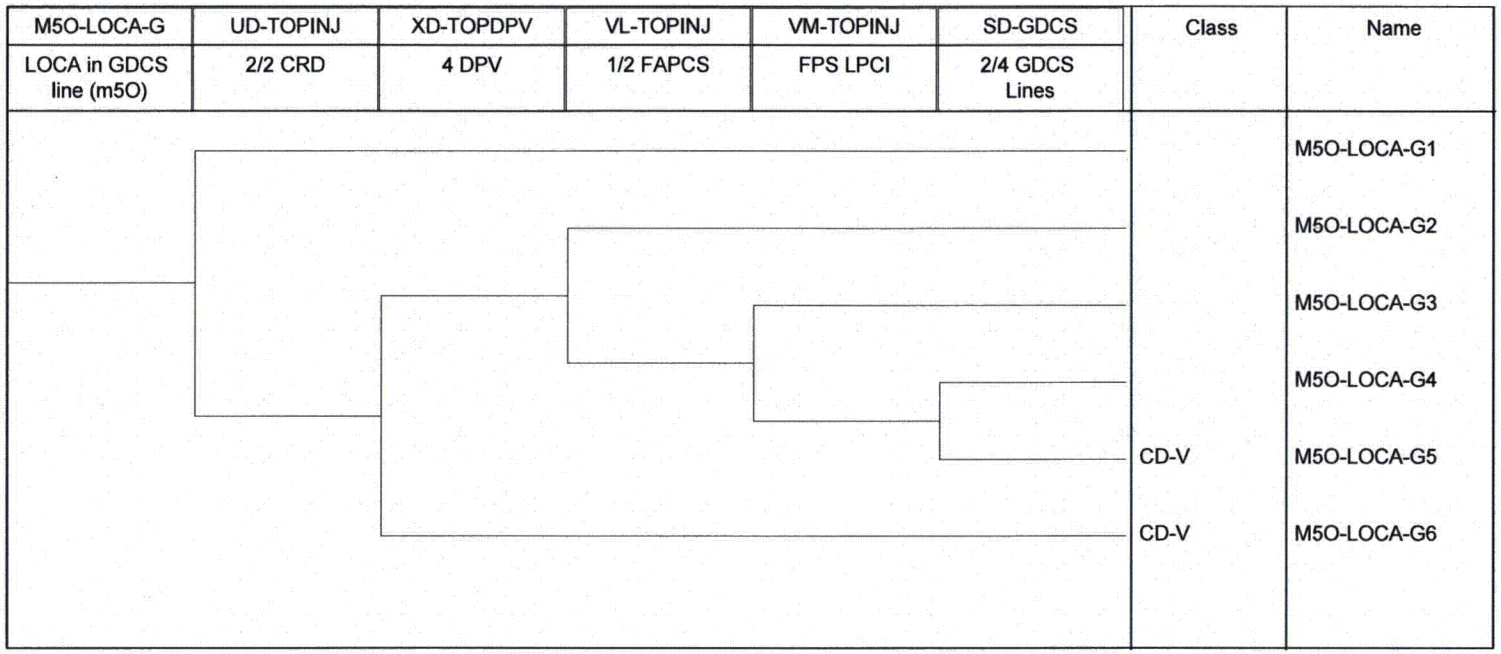


Figure 16.4-15. LOCA in GDCS line (Mode 5 Open)

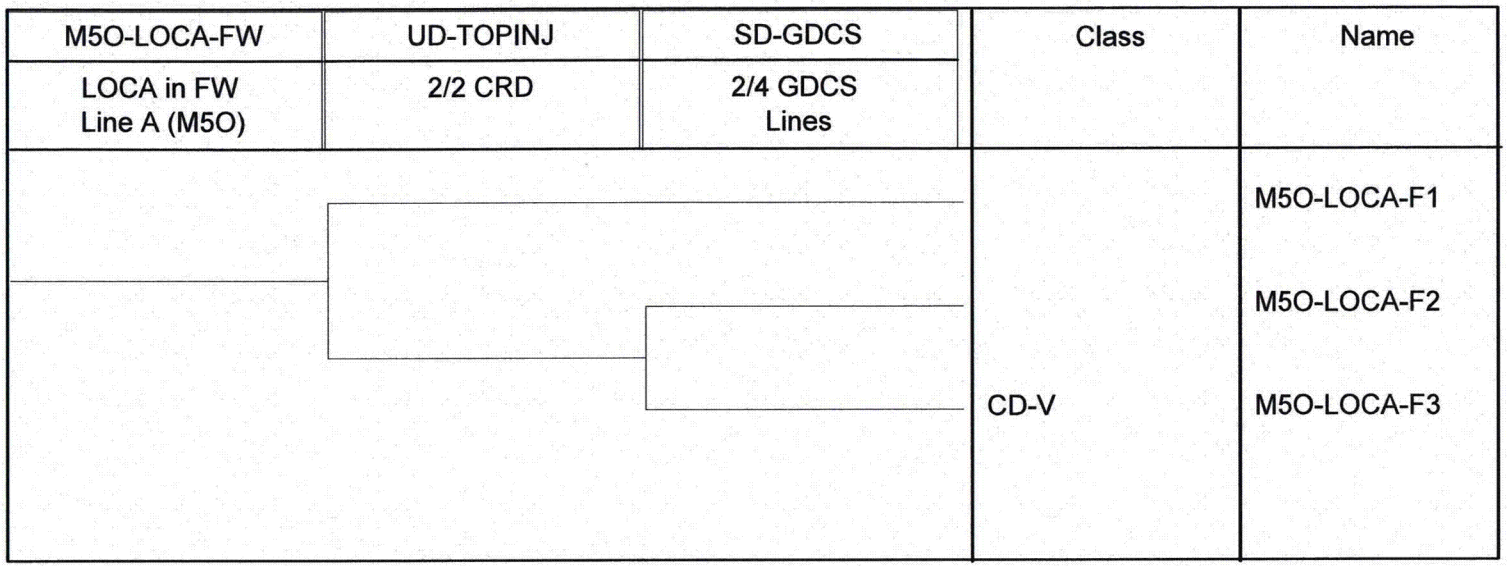


Figure 16.4-16. LOCA in Feedwater line (Mode 5 Open)

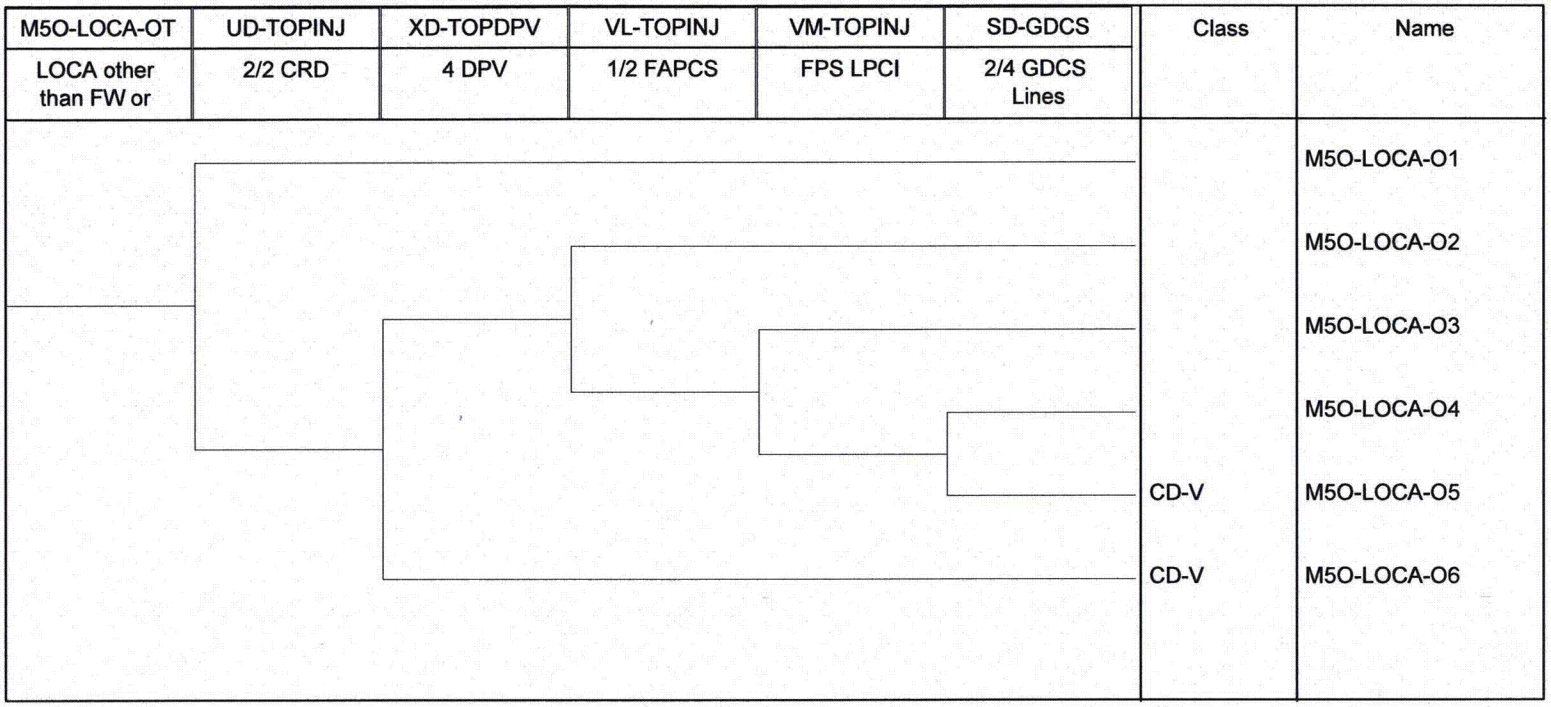


Figure 16.4-17. LOCA in Line Other than Feedwater or GDCS (Mode 5 Open)

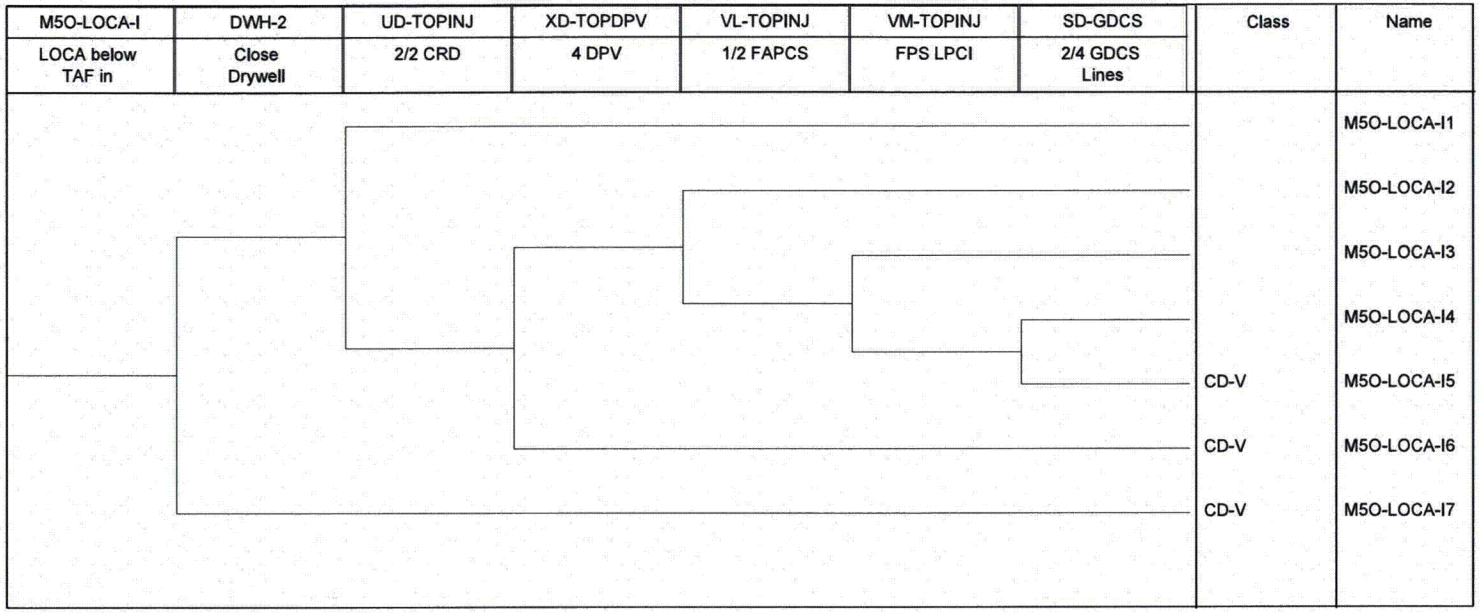


Figure 16.4-18. LOCA Below TAF in Instrument Line (Mode 5 Open)

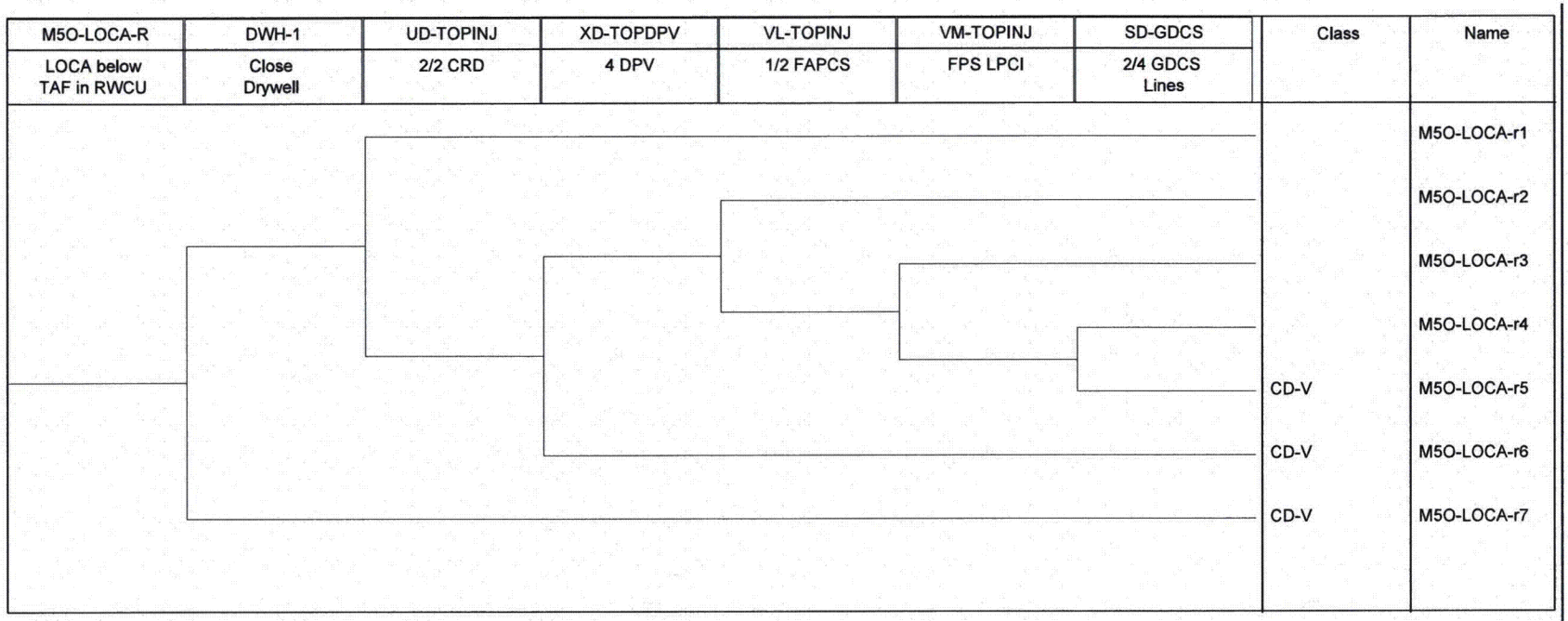


Figure 16.4-19. LOCA Below TAF in RWCU Drain Line (Mode 5 Open)

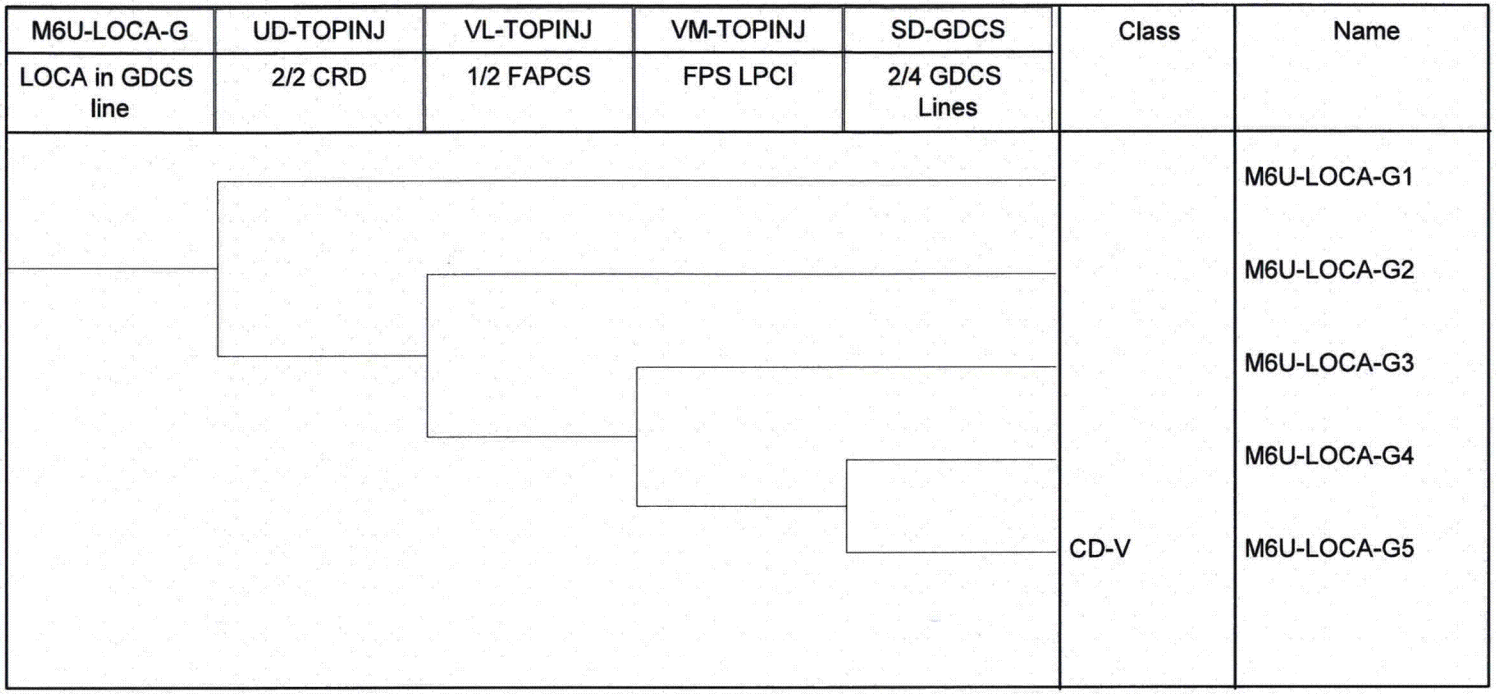


Figure 16.4-20. LOCA in GDCS line (Mode 6 Unflooded)

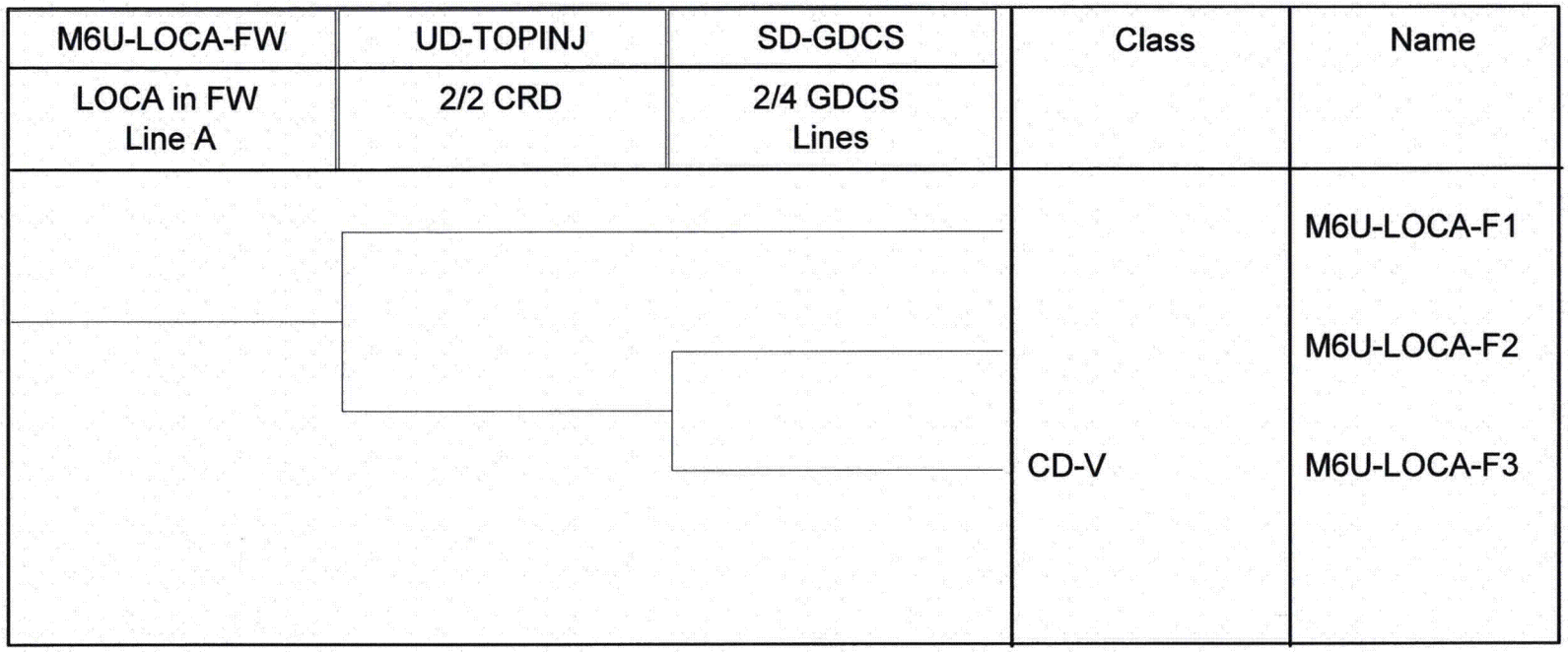


Figure 16.4-21. LOCA in Feedwater line (Mode 6 Unflooded)

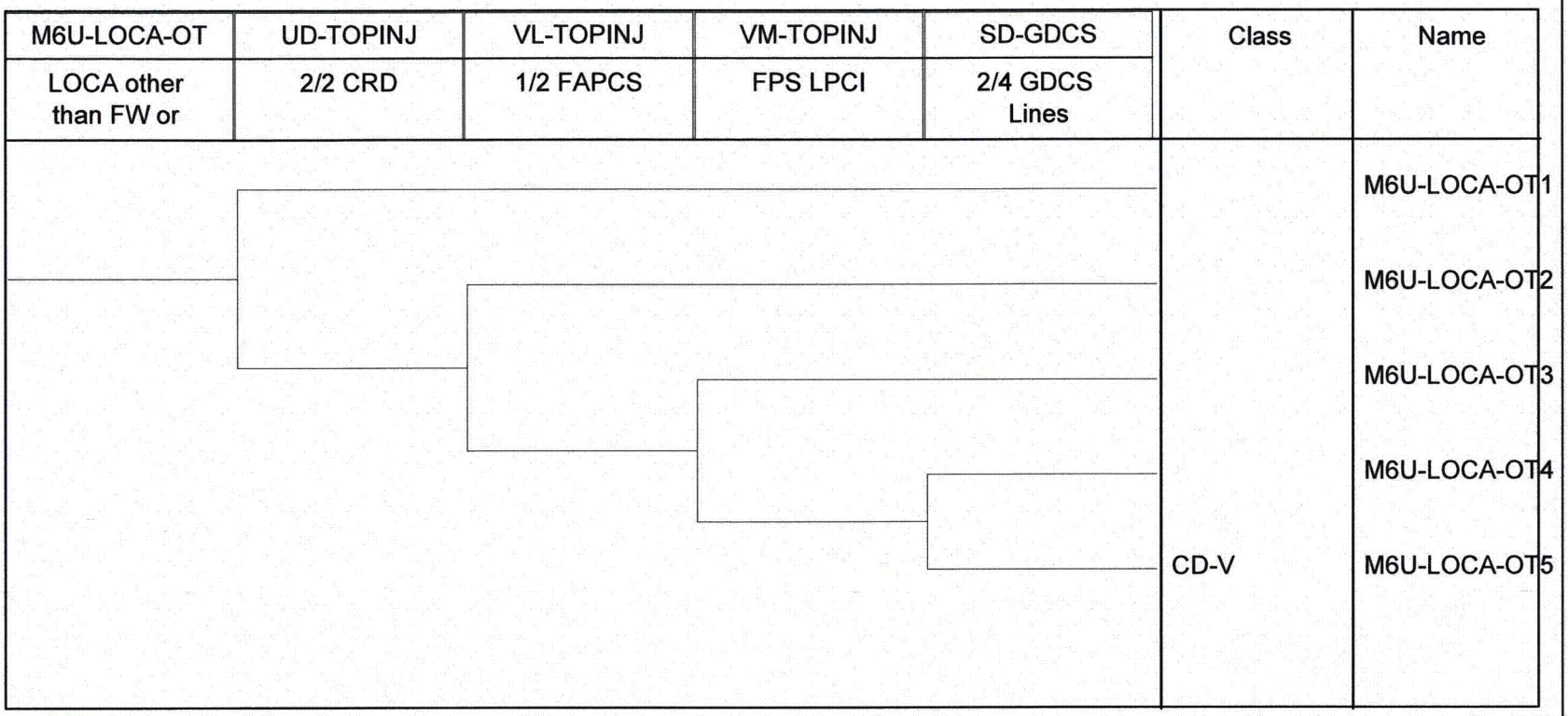


Figure 16.4-22. LOCA in line other than Feedwater or GDCS (Mode 6 Unflooded)

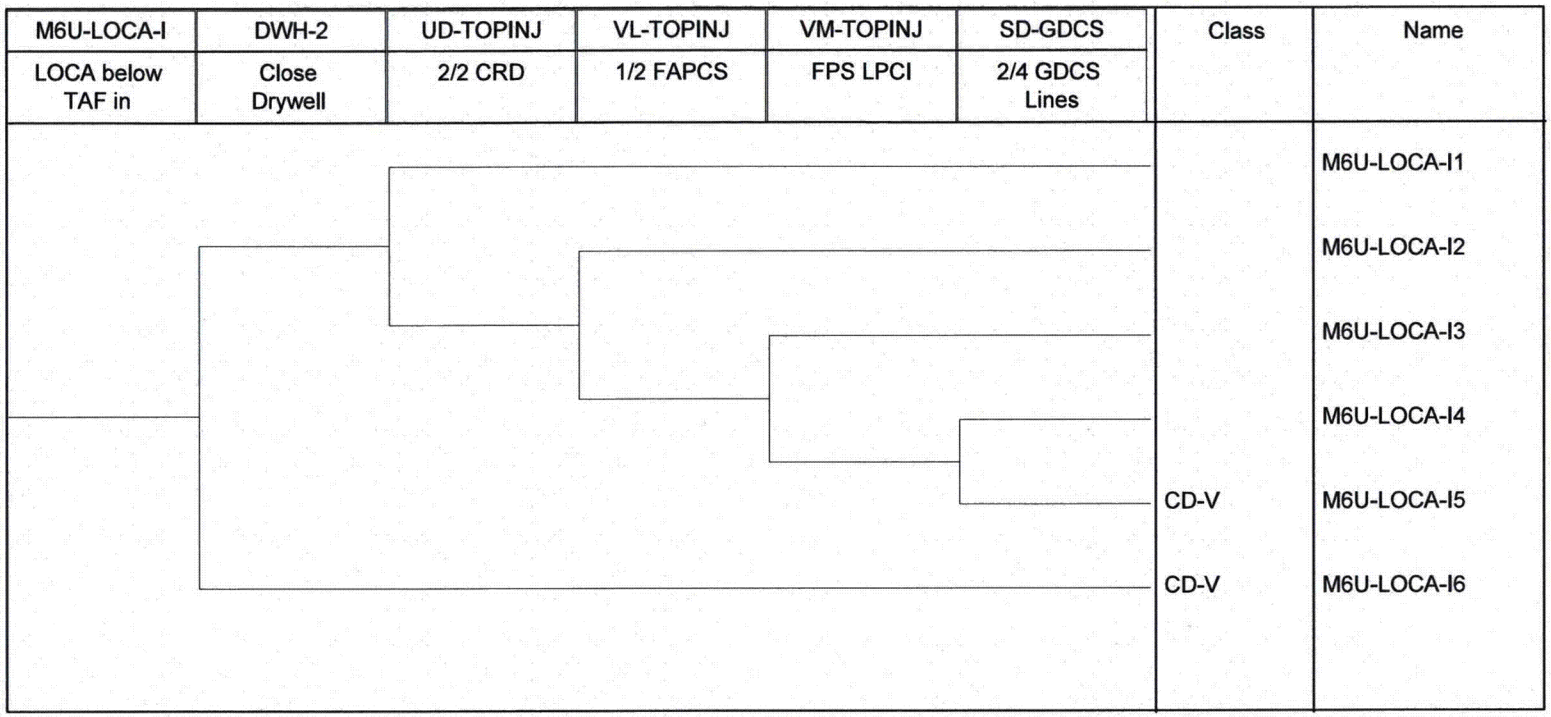


Figure 16.4-23. LOCA below TAF in Instrument line (Mode 6 Unflooded)

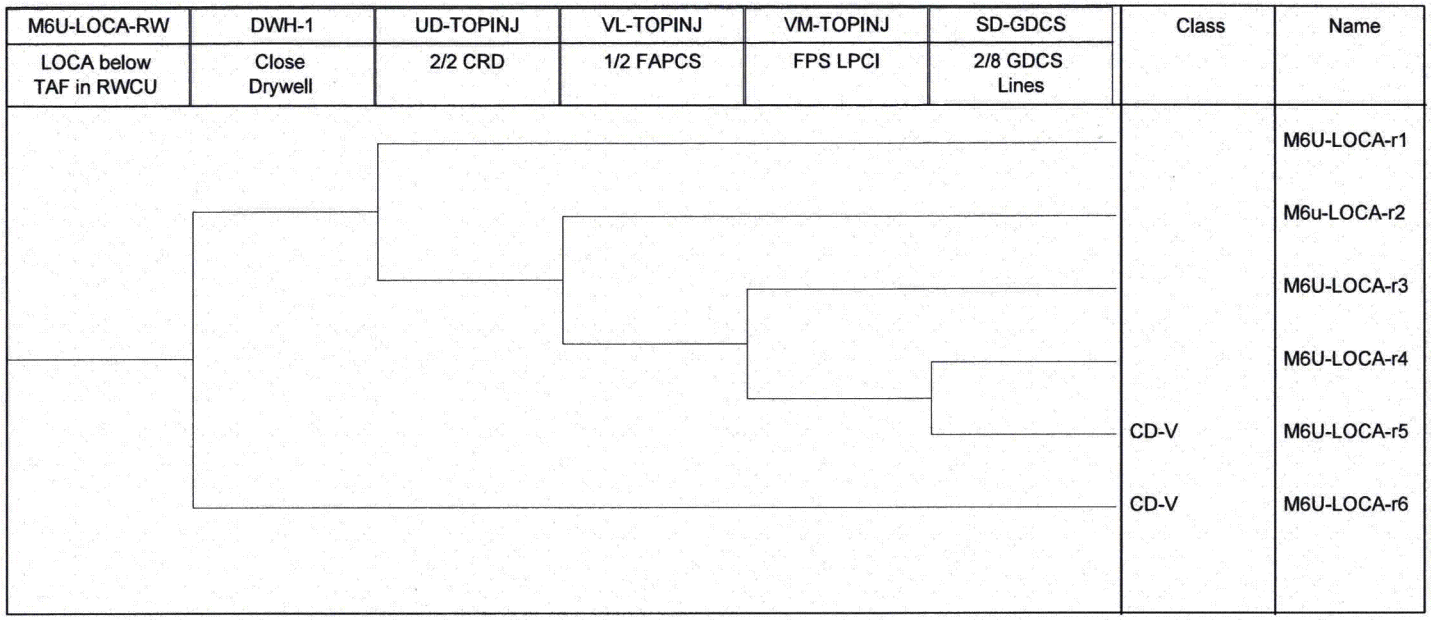
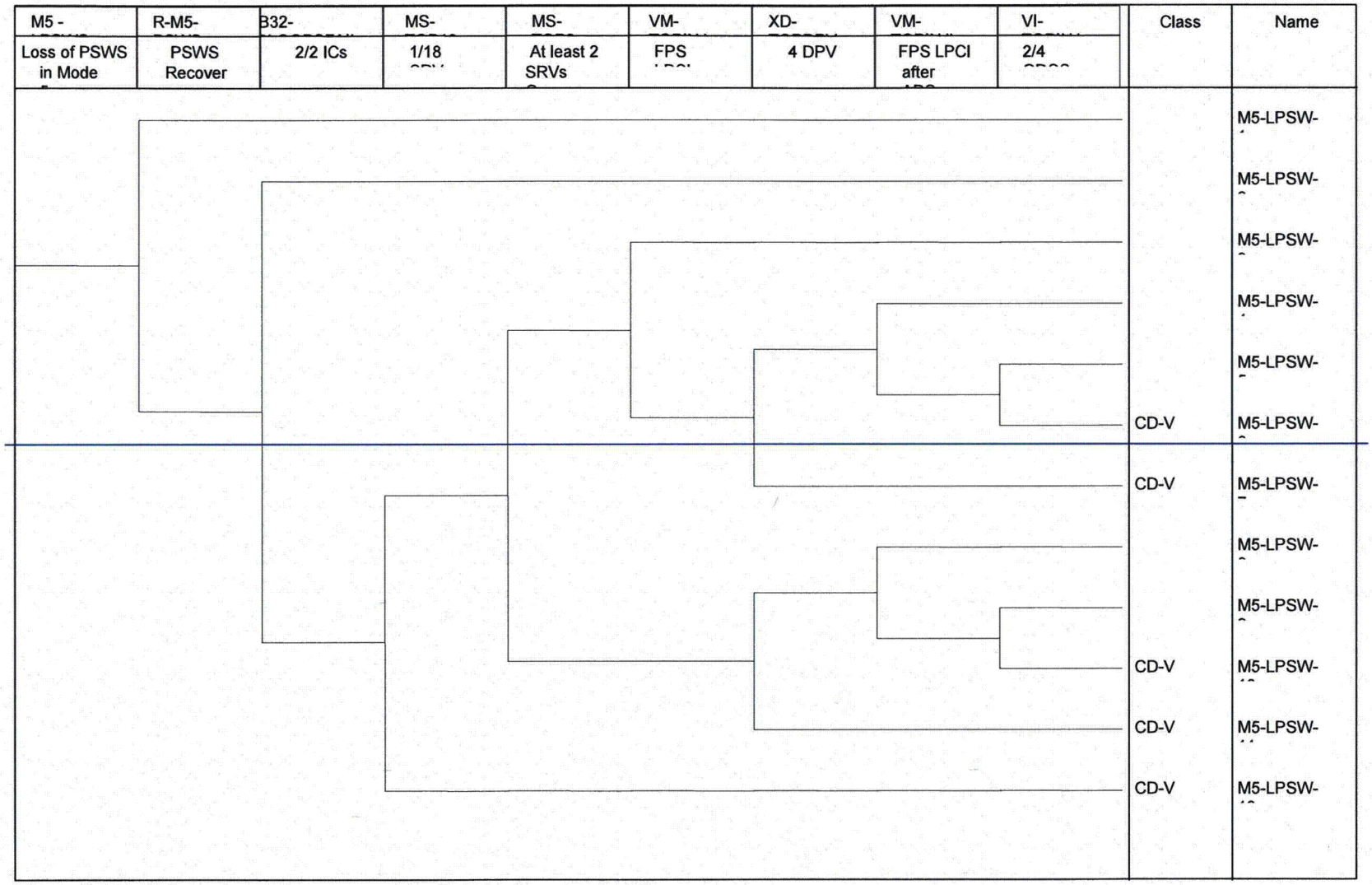
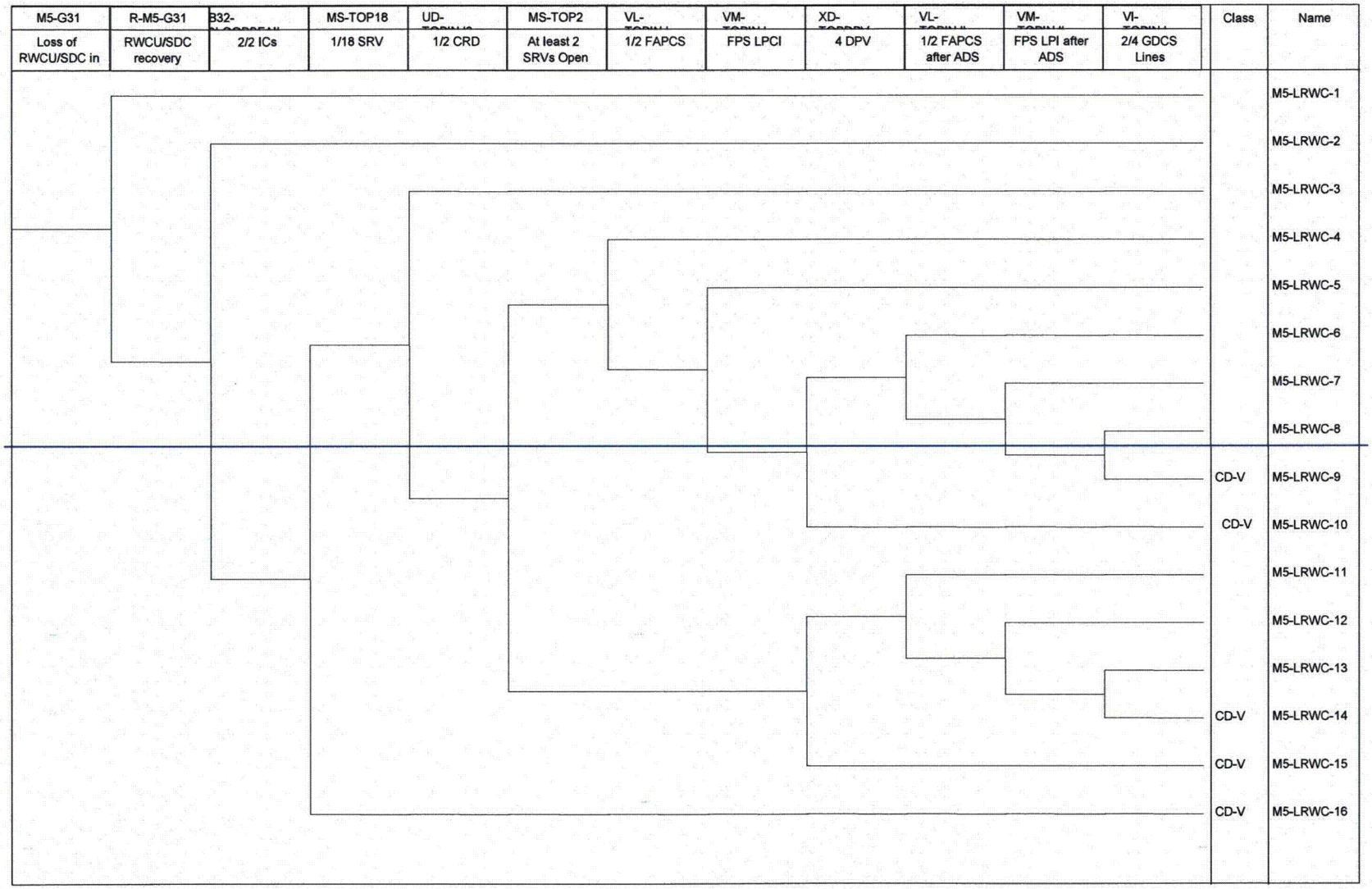


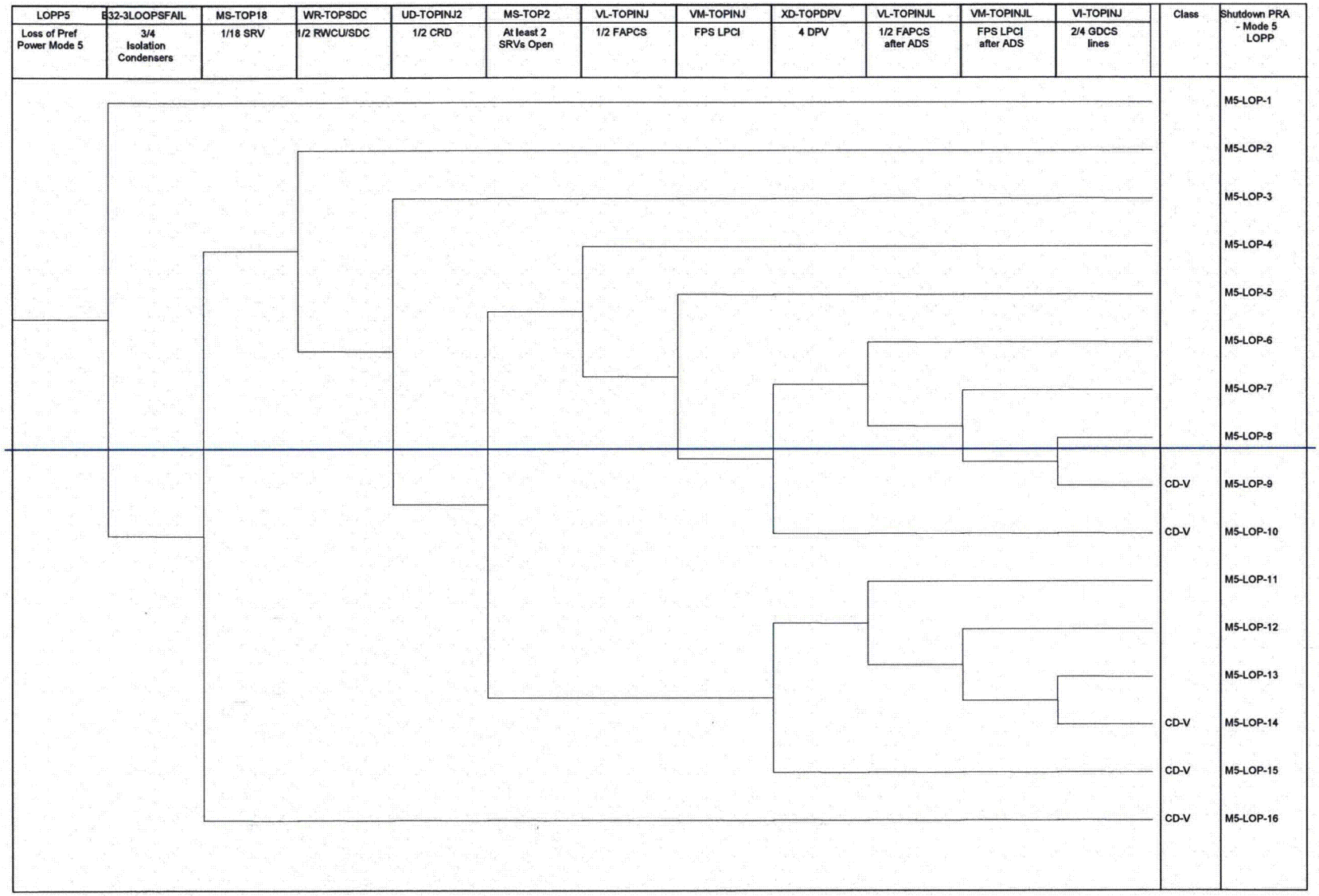
Figure 16.4-24. LOCA below TAF in RWCU drain line (Mode 6 Unflooded)



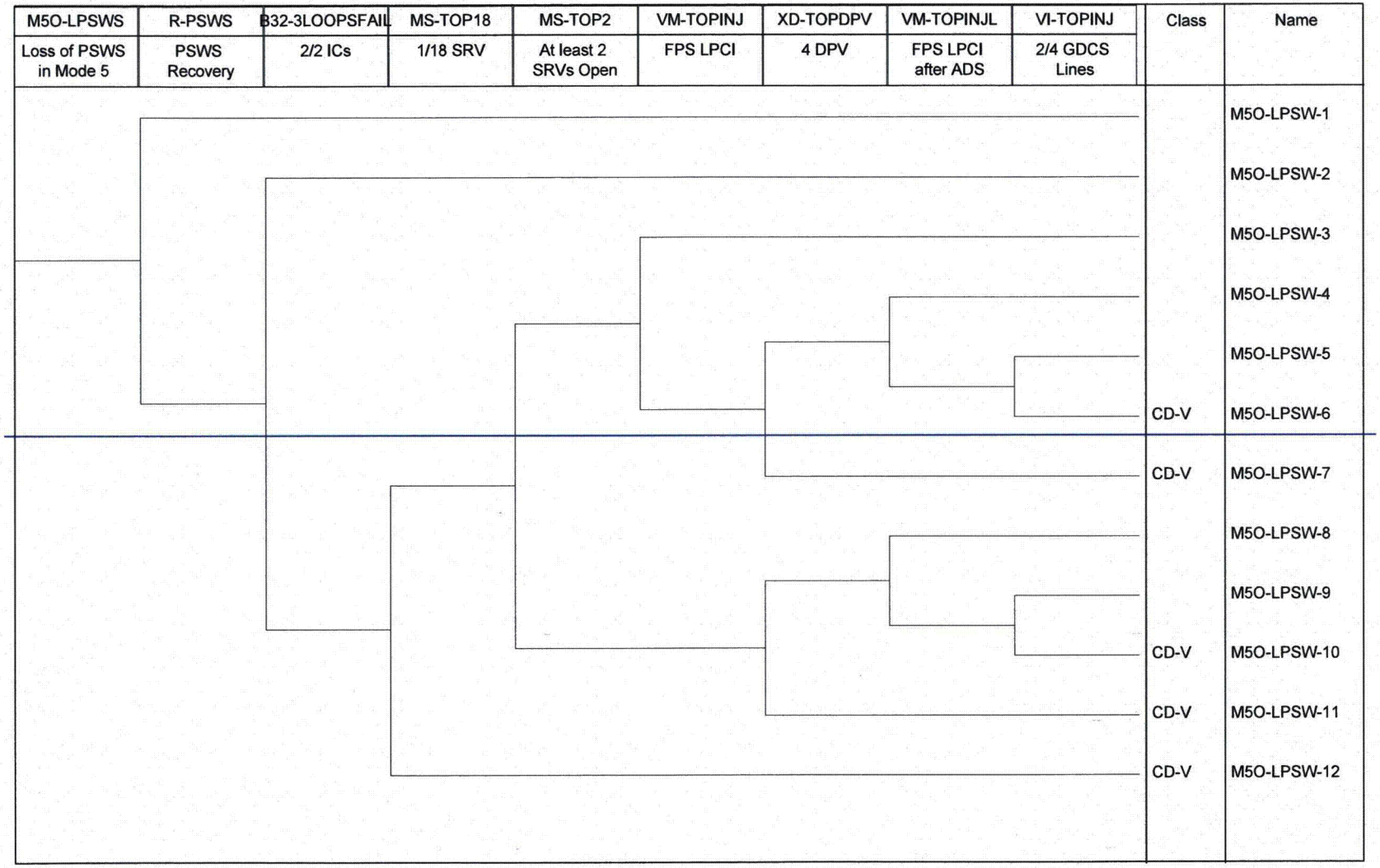
~~Figure 16.4-1. Loss of all Service Water PSWS/RCCWS (Mode 5)~~



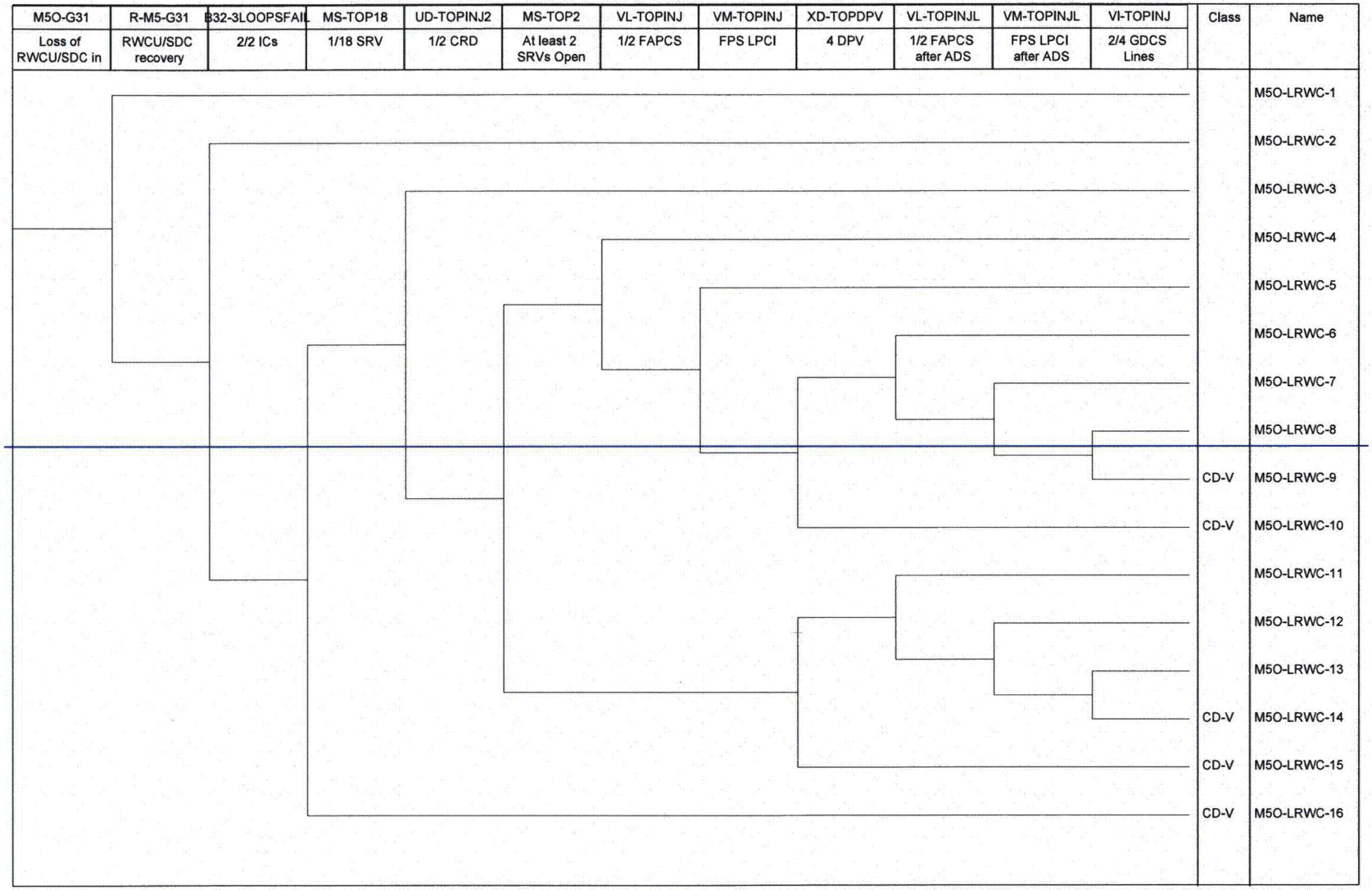
~~Figure 16.4-2. Loss of Both RWCU/SDCS Trains (Mode 5)~~



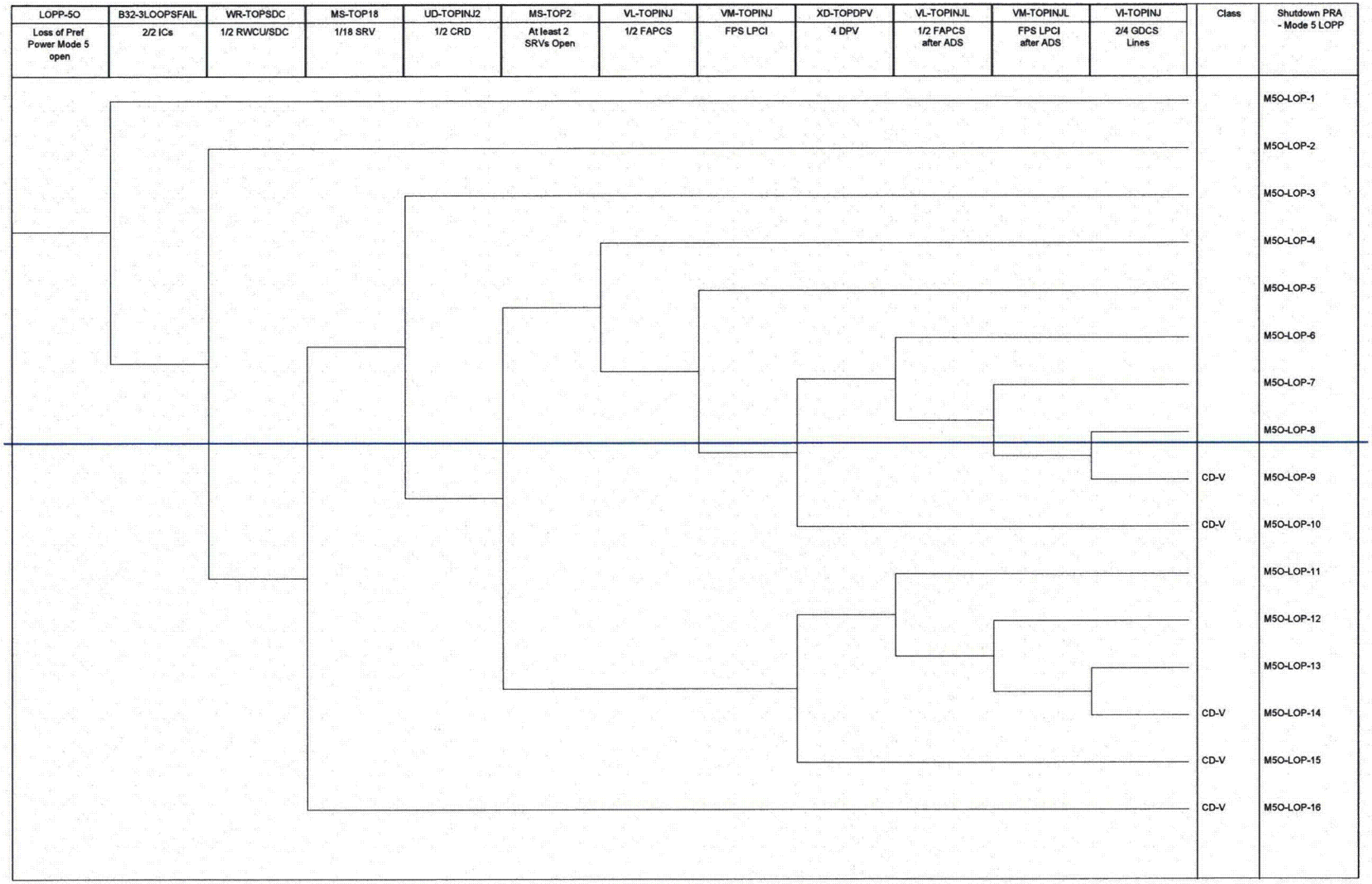
~~Figure 16.4-3. Loss of Preferred Power (Mode 5)~~



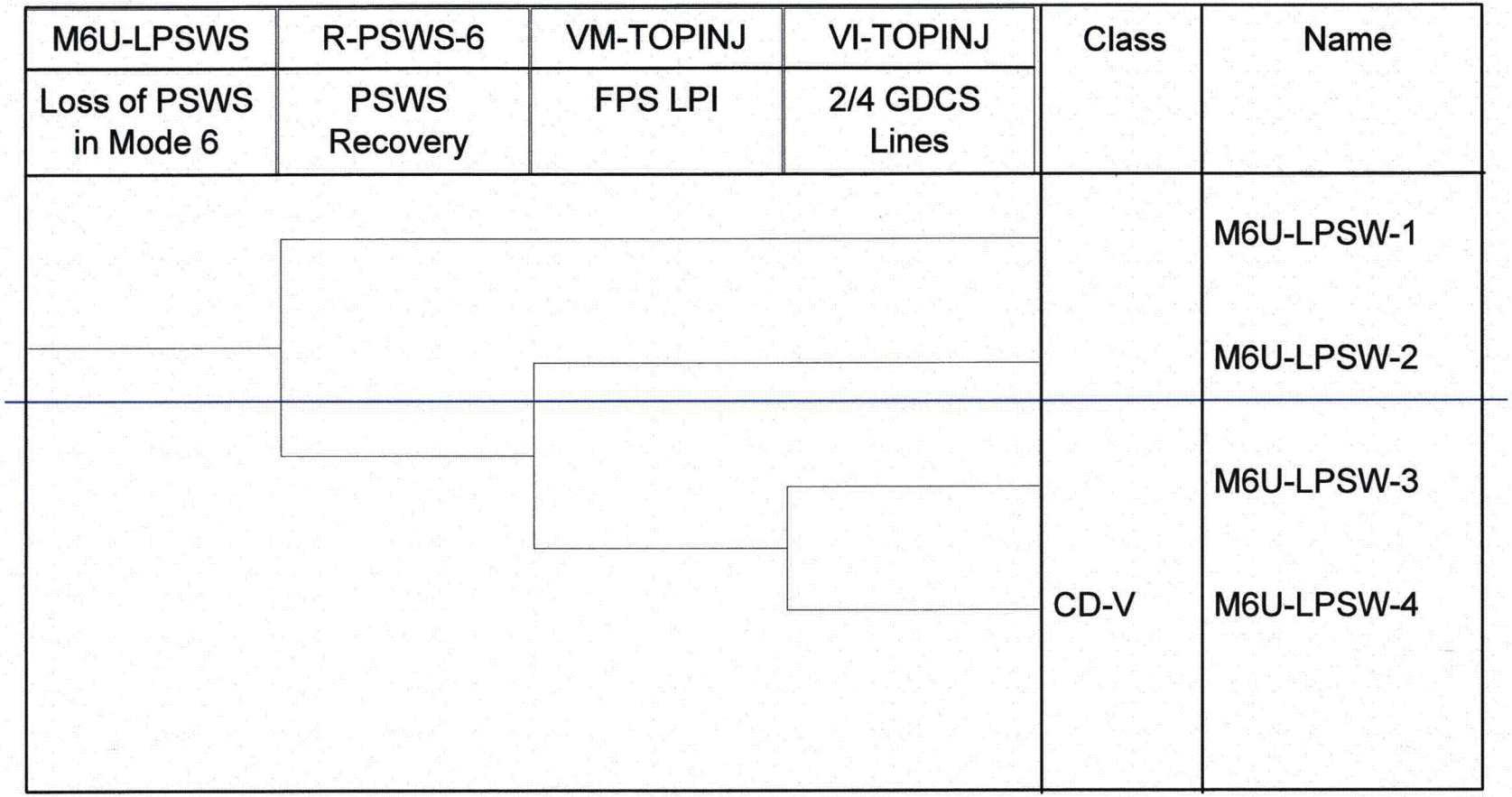
~~Figure 16.4-4. Loss of all Service Water PSWS/RCCWS (Mode 5 Open)~~



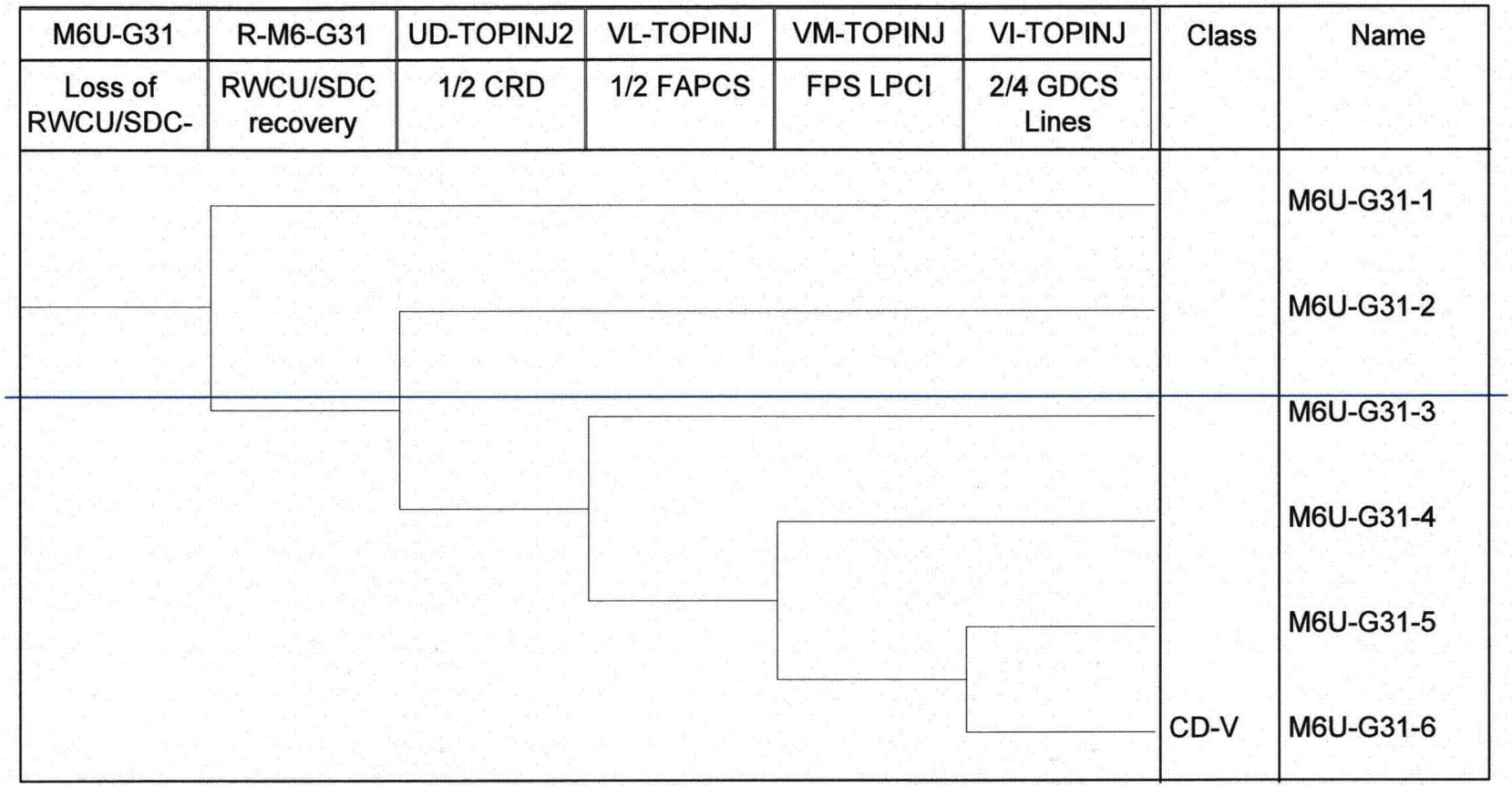
~~Figure 16.4-5. Loss of Both RWCU/SDCS Trains (Mode 5 Open)~~



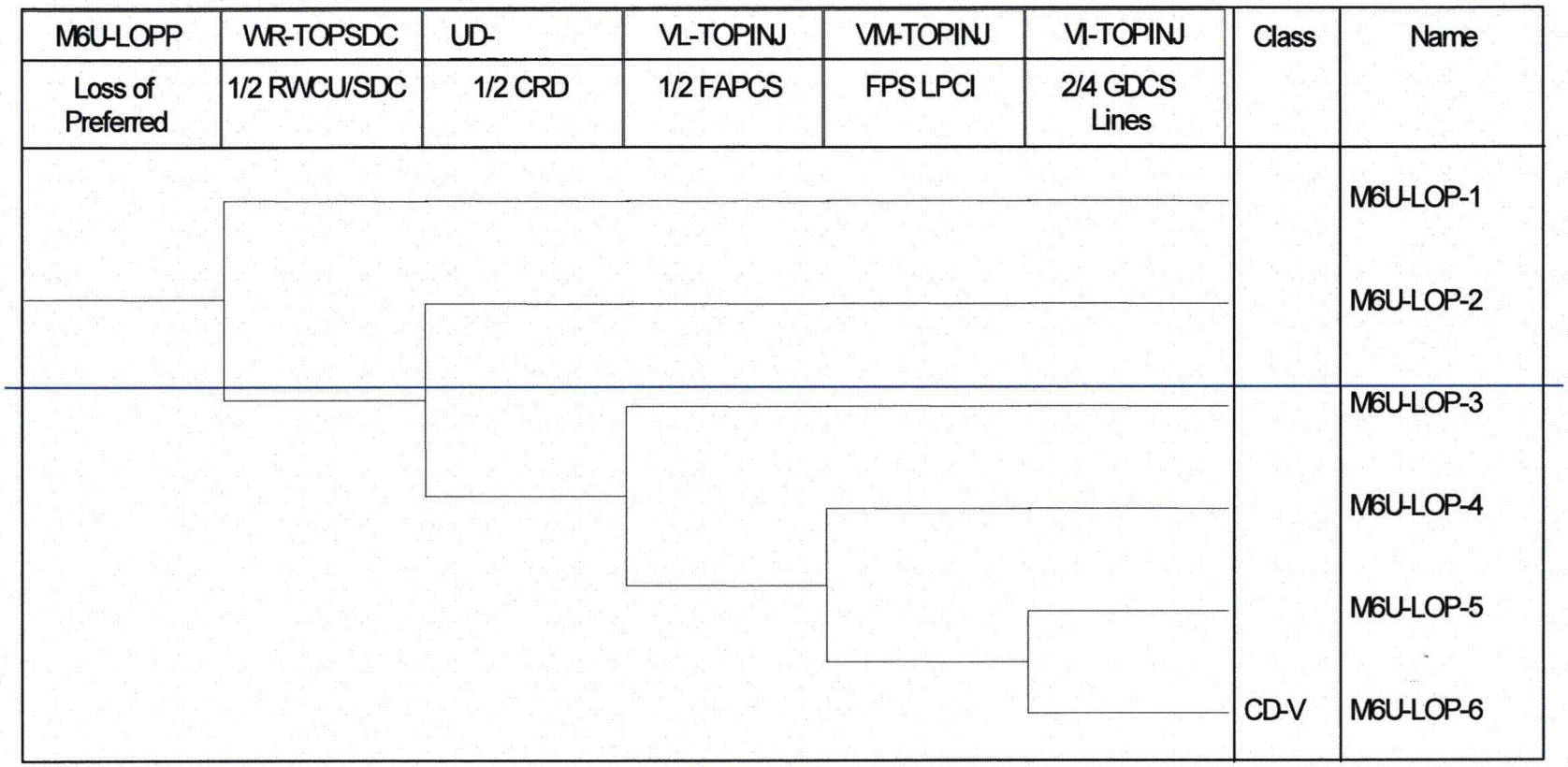
~~Figure 16.4-6. Loss of Preferred Power (Mode 5 Open)~~



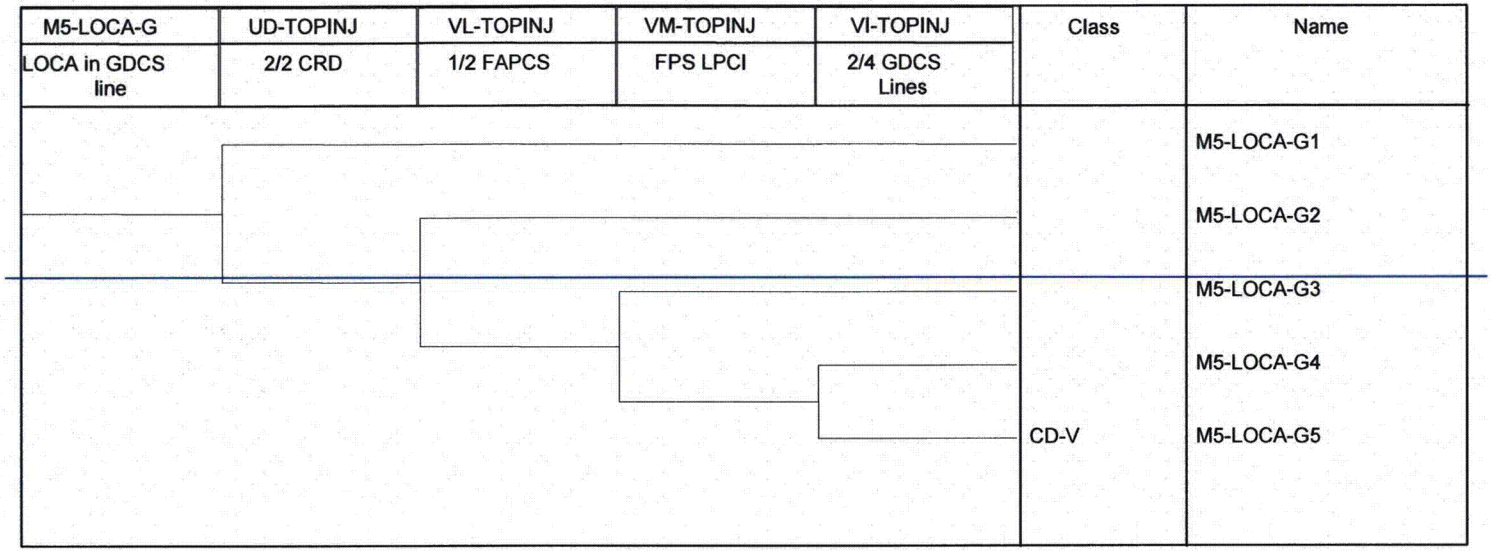
~~Figure 16.4-7. Loss of all Service Water PSWS/RCCWS (Mode 6 Unflooded)~~



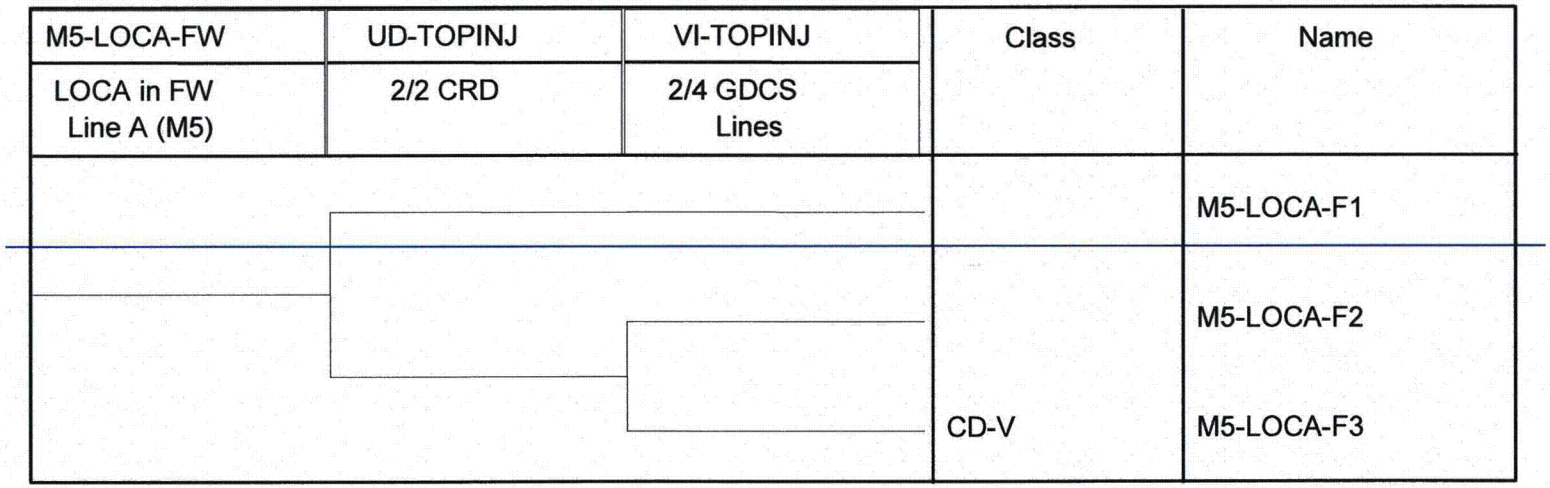
~~Figure 16.4-8. Loss of Both RWCU/SDCS Trains (Mode 6 Unflooded)~~



~~Figure 16.4-9. Loss of Preferred Power (Mode 6 Unflooded)~~



~~Figure 16.4-10. LOCA in GDCS line (Mode 5)~~



~~Figure 16.4-11. LOCA in Feedwater line (Mode 5)~~

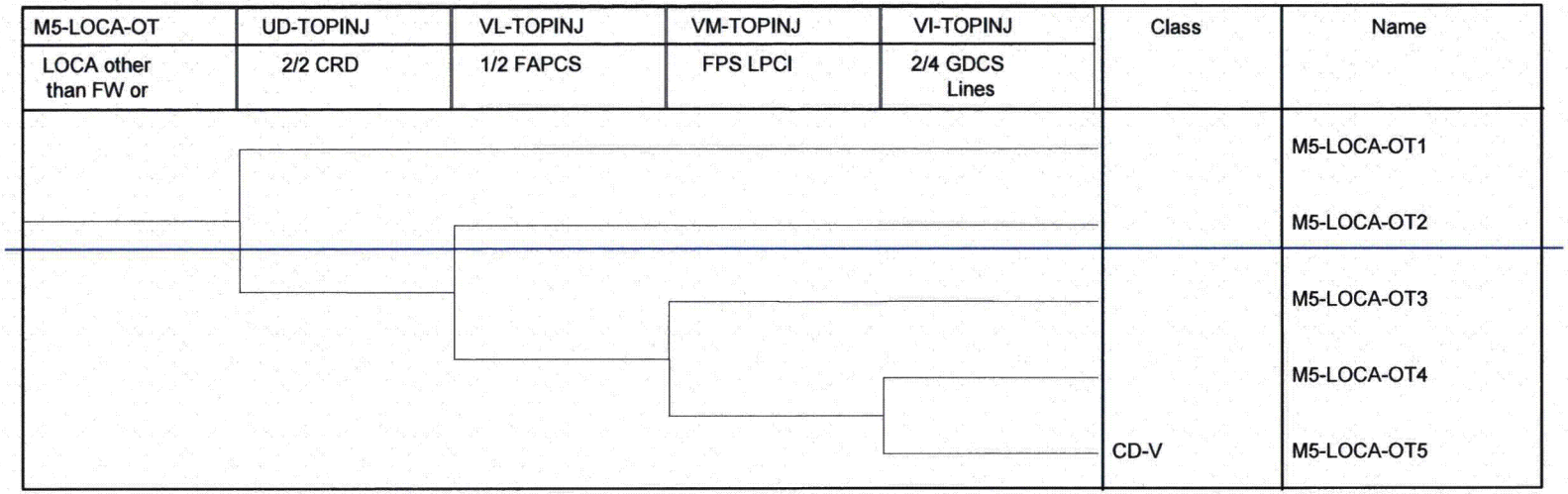


Figure 16.4-12. LOCA other than FW or GDCS (Mode 5)

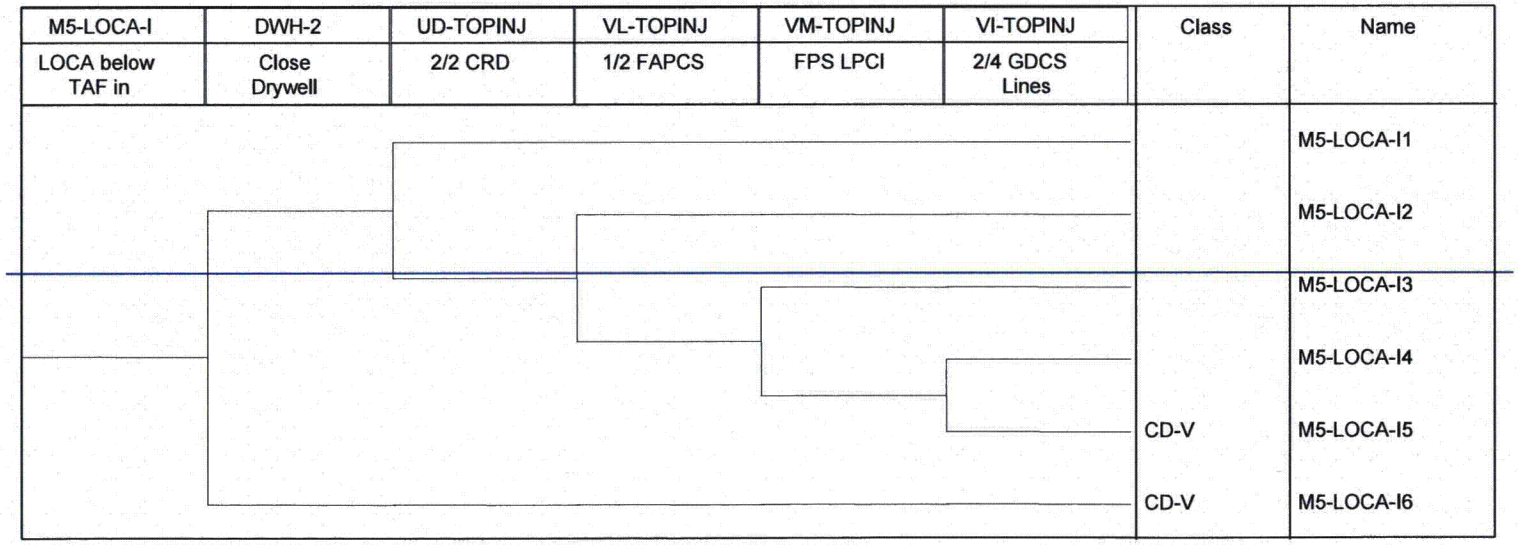
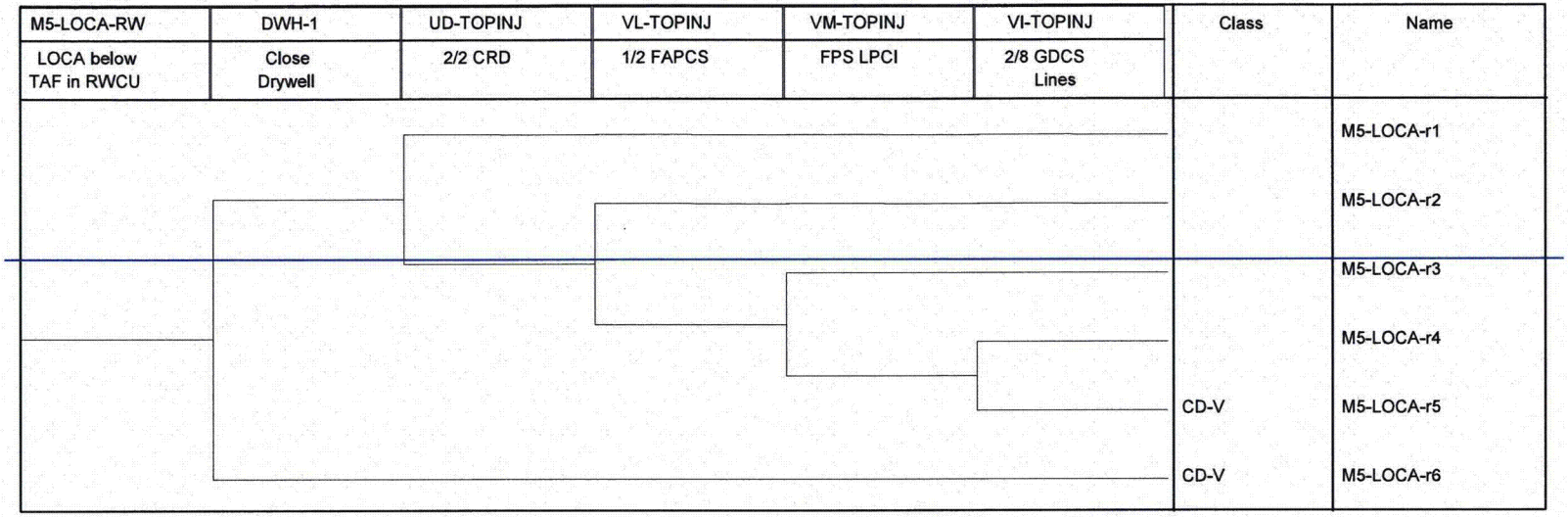
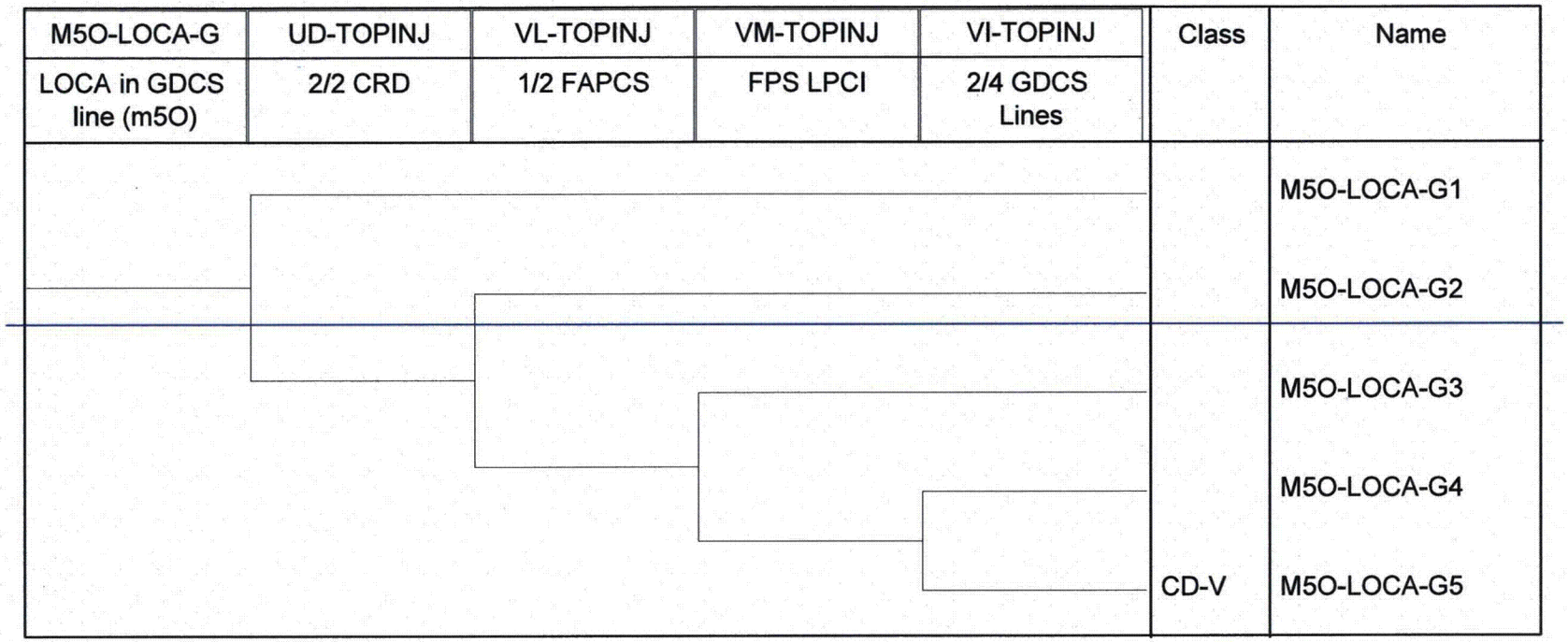


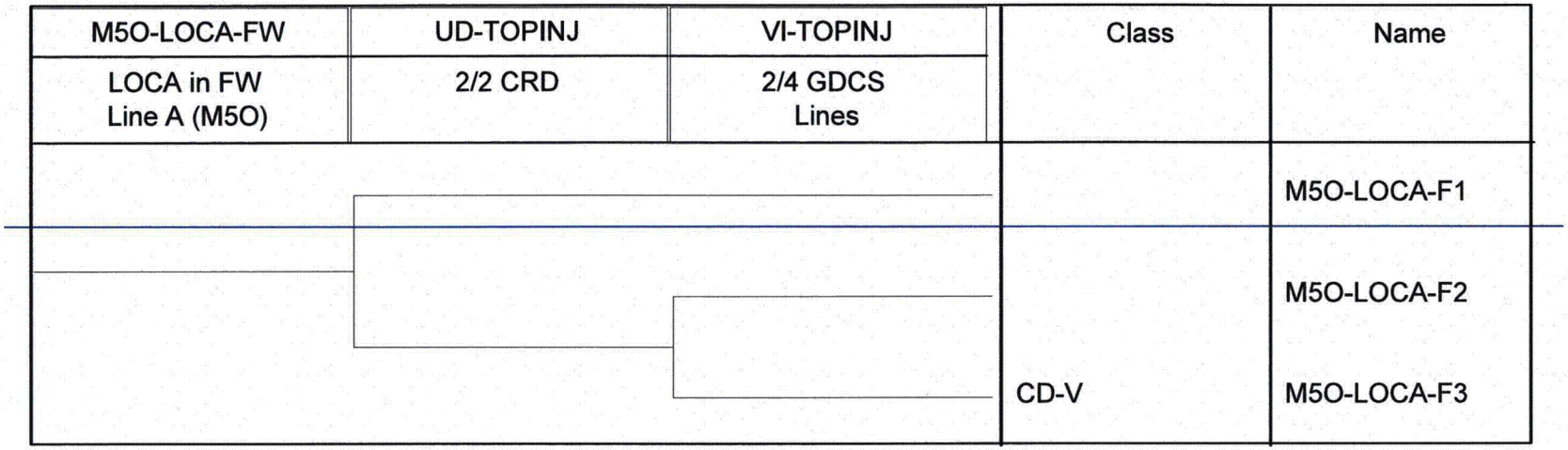
Figure 16.4-13. LOCA below TAF in Instrument line (Mode 5)



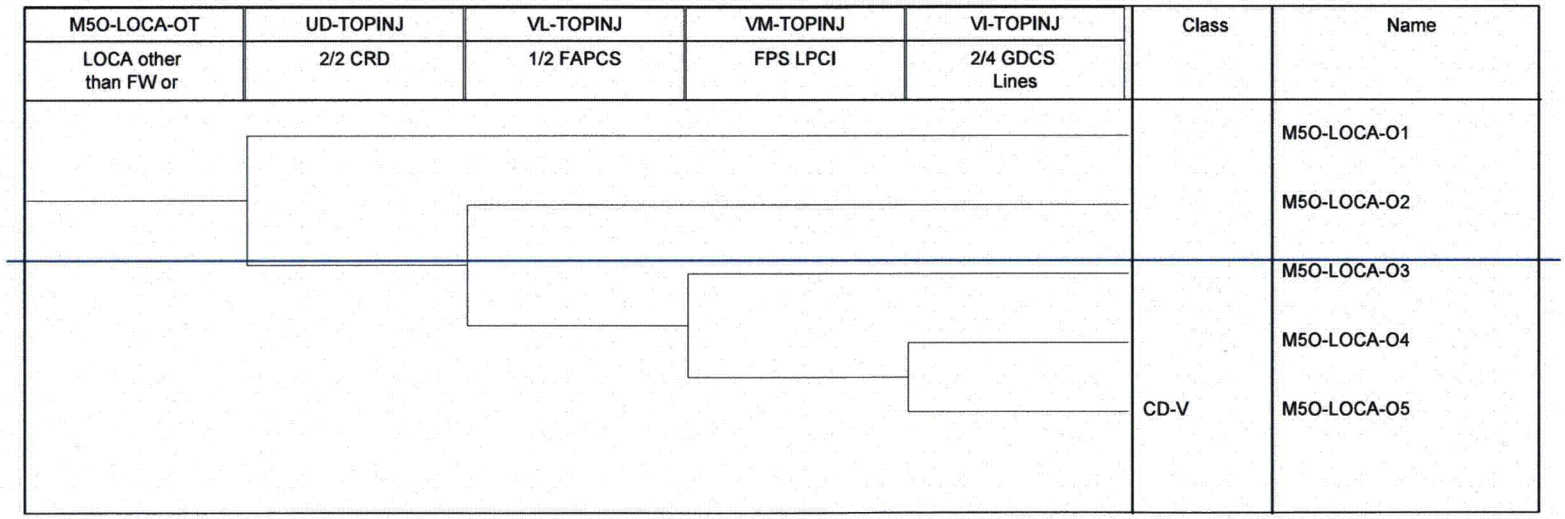
~~Figure 16.4-14. LOCA below TAF in RWCU drain line (Mode 5)~~



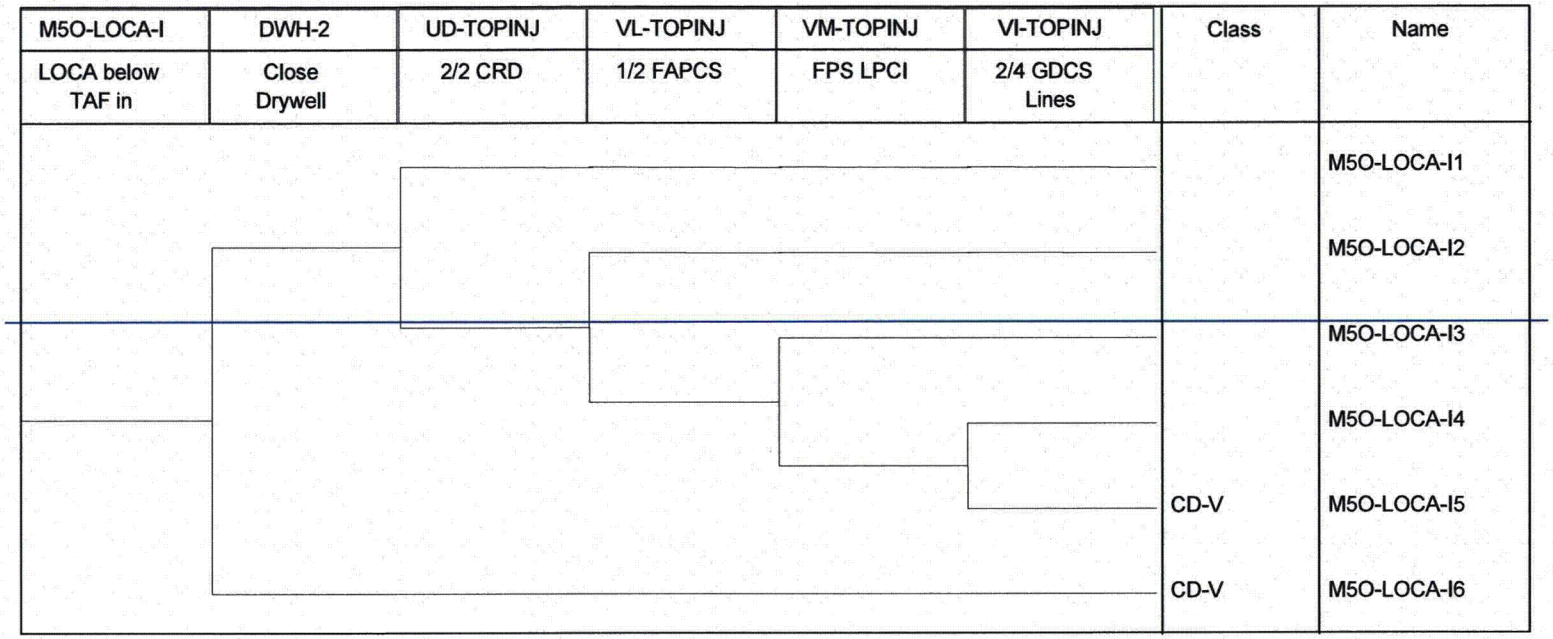
~~Figure 16.4-15. LOCA in GDCS line (Mode 5 Open)~~



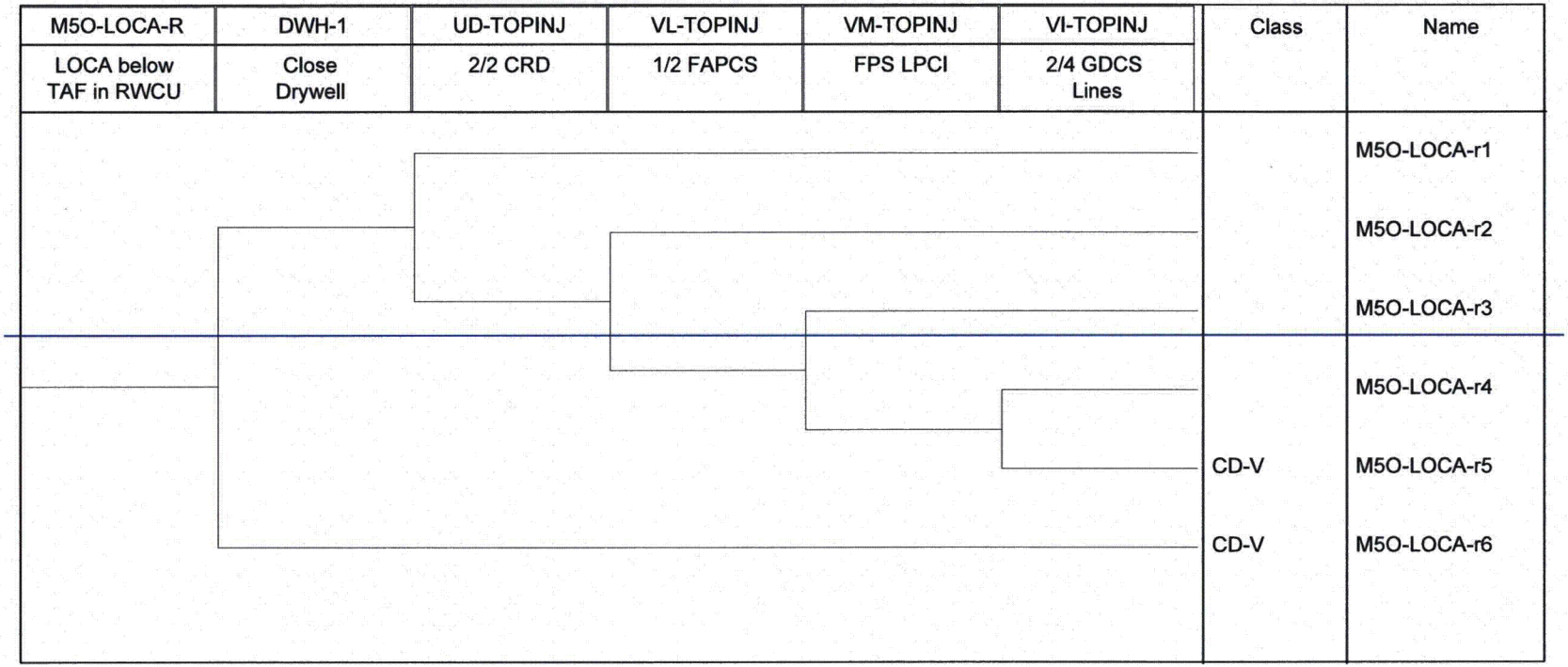
~~Figure 16.4-16. LOCA in Feedwater line (Mode 5 Open)~~



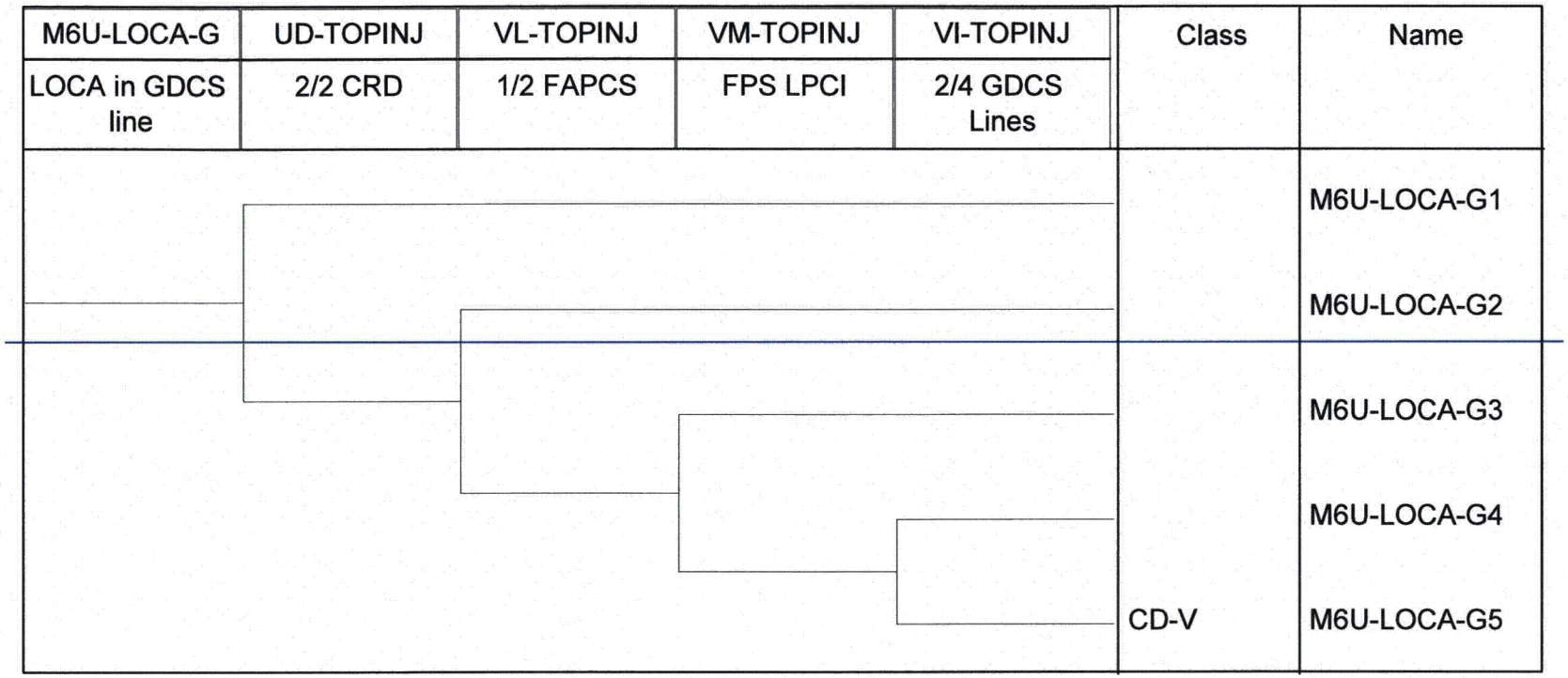
~~Figure 16.4-17. LOCA in line other than Feedwater or GDCS (Mode 5 Open)~~



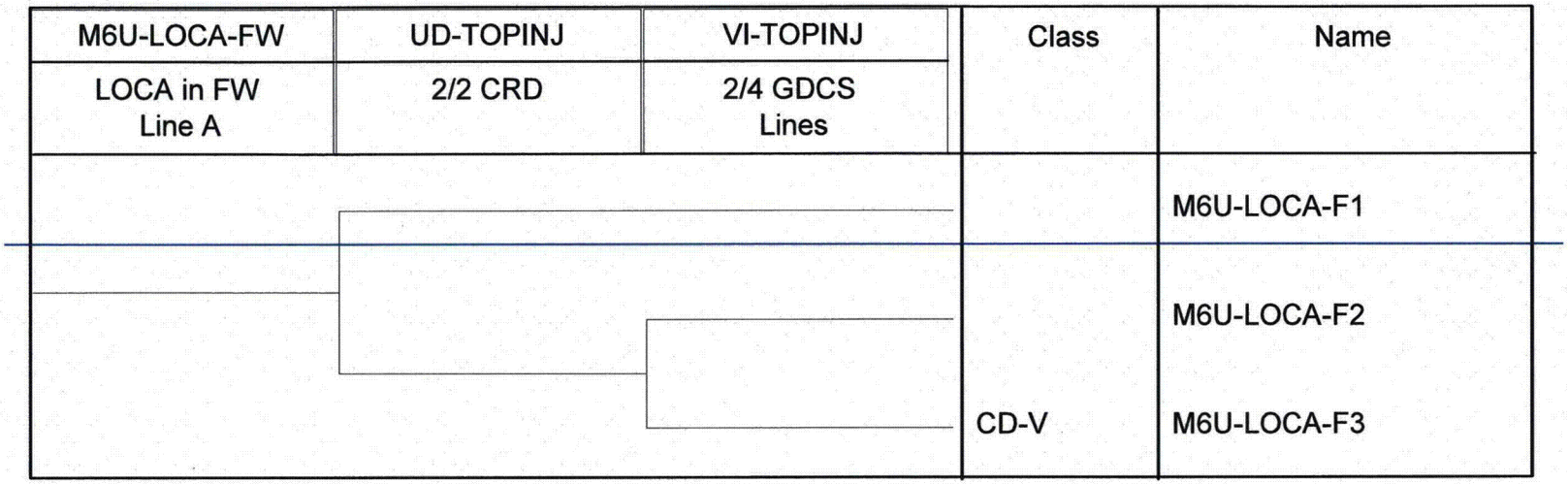
~~Figure 16.4-18. LOCA below TAF in Instrument line (Mode 5 Open)~~



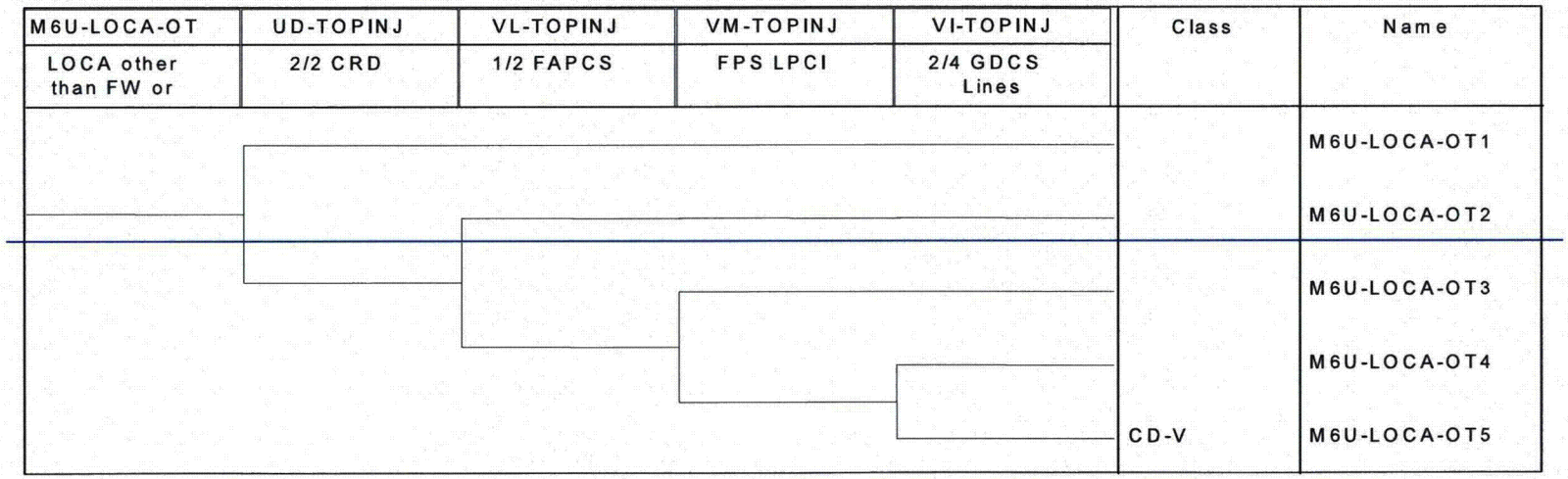
~~**Figure 16.4-19. LOCA below TAF in RWCU drain line (Mode 5 Open)**~~



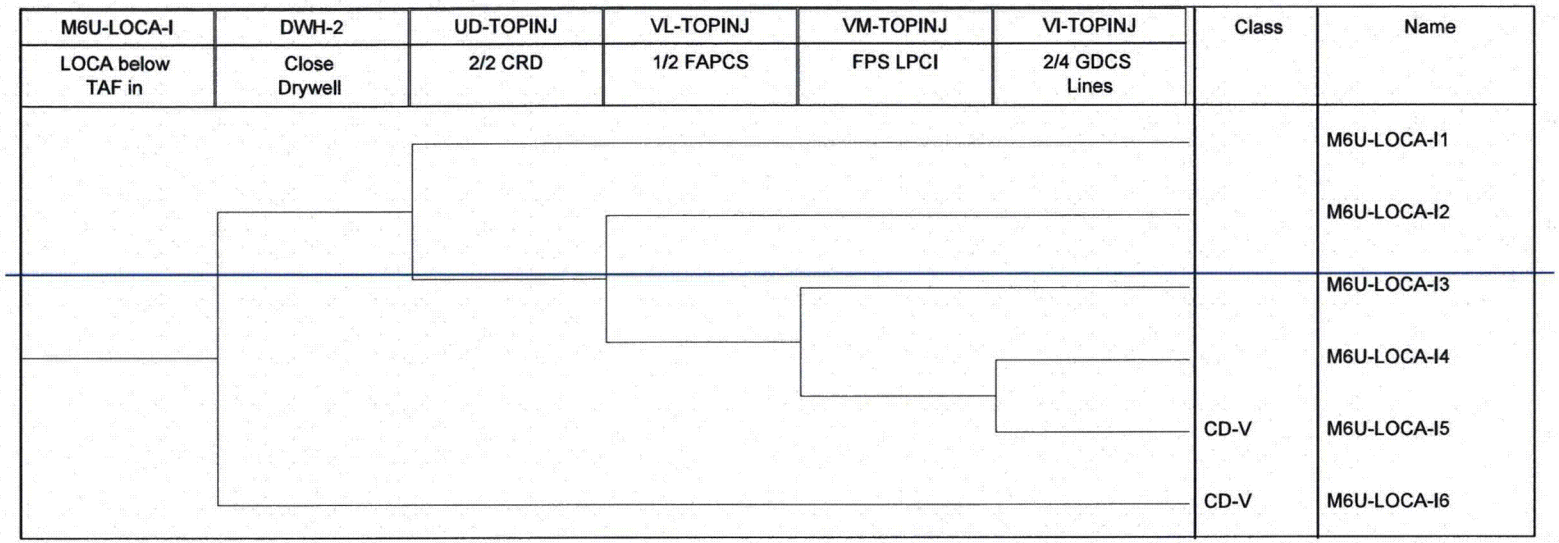
~~Figure 16.4-20. LOCA in GDCS line (Mode 6 Unflooded)~~



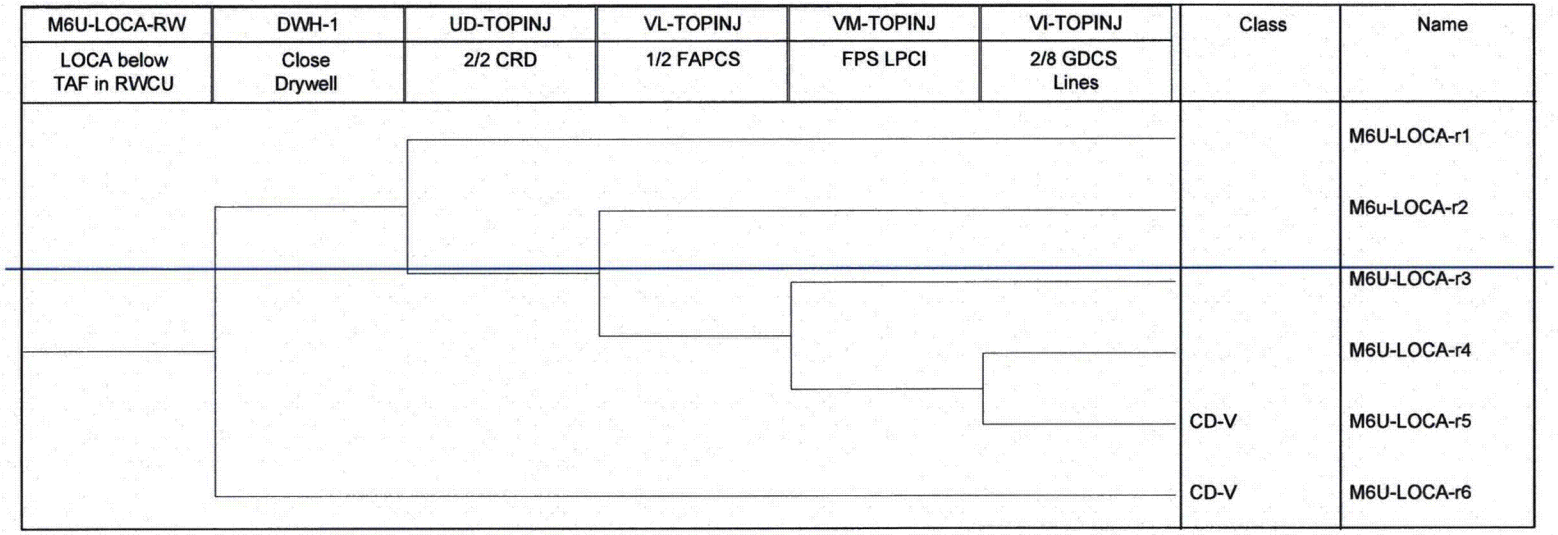
~~Figure 16.4-21. LOCA in Feedwater line (Mode 6 Unflooded)~~



~~Figure 16.4-22. LOCA in line other than Feedwater or GDCS (Mode 6 Unflooded)~~



~~Figure 16.4-23. LOCA below TAF in Instrument line (Mode 6 Unflooded)~~



~~**Figure 16.4-24. LOCA below TAF in RWCU drain line (Mode 6 Unflooded)**~~

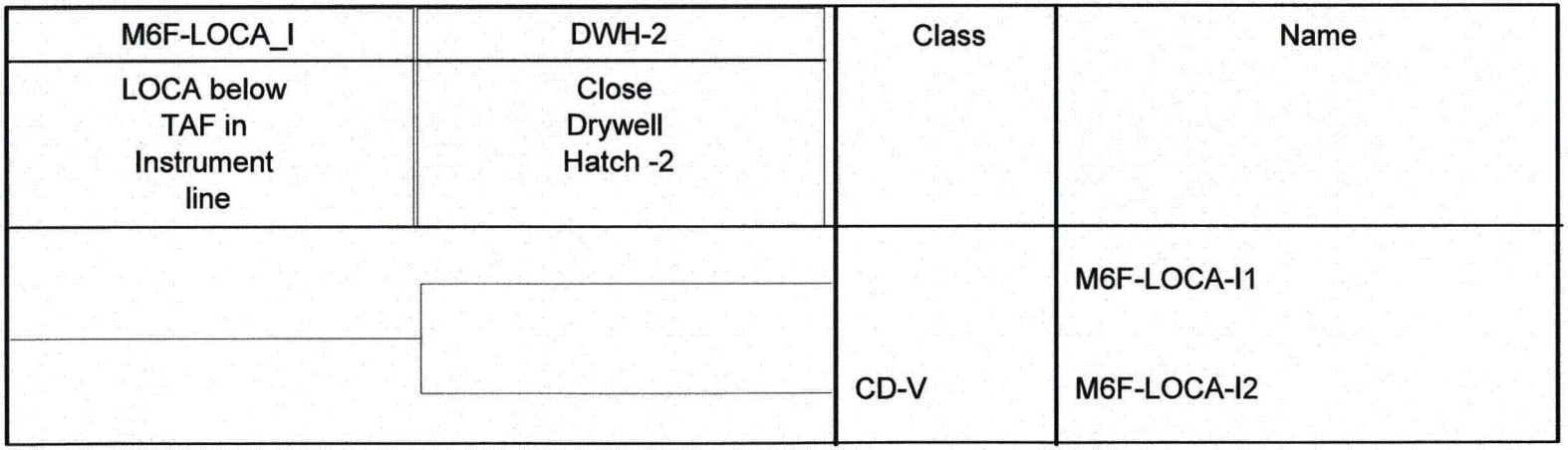


Figure 16.4-25. LOCA below TAF in Instrument line (Mode 6 Flooded)

M6F-LOCA_R	DWH-1	Class	Name
LOCA below TAF in RWCU/SDC drainlines	Close Drywell Hatch -1		
			M6F-LOCA-R1
		CD-V	M6F-LOCA-R2

Figure 16.4-26. LOCA below TAF in RWCU drain line (Mode 6 Flooded)

~~**Figure 16.4-2. Loss of Both RWCU/SDCS Trains (Mode 6-Unflooded) RWCU6 (Deleted)**~~

~~**Figure 16.4-4. Loss of Preferred Power (Mode 6-Unflooded) LOPP6 (Deleted)**~~

~~**Figure 16.4-5a. Loss of RCCWS/PSWS (Mode 5) SW5A (Deleted)**~~

~~**Figure 16.4-5b. Loss of RCCWS/PSWS (Mode 5) SW5B (Deleted)**~~

~~**Figure 16.4-6. Loss of RCCWS/PSWS (Mode 6-Unflooded) SW6 (Deleted)**~~

~~**Figure 16.4-7. LOCA in GDCS Line (Mode 6-Unflooded) LGDCS (Deleted)**~~

~~**Figure 16.4-8. LOCA in FW-A (Mode 6-Unflooded) LFWA (Deleted)**~~

~~**Figure 16.4-9. LOCA Other Than FW or GDCS (Mode 6-Unflooded) LOTHER (Deleted)**~~

~~**Figure 16.4-10. LOCA Below TAF in RWCU Drain Lines (Mode 6-Unflooded) LBTAF1 (Deleted)**~~

~~**Figure 16.4-11. LOCA Below TAF in Instrument Lines (Mode 6-Unflooded) LBTAF2 (Deleted)**~~

~~**Figure 16.4-12. LOCA Below TAF in RWCU/SDC Drain Lines (Mode 6-Flooded) LBTAF1F (Deleted)**~~

~~**Figure 16.4-13. LOCA Below TAF in Instrument Lines (Mode 6-Flooded) LBTAF2F (Deleted)**~~