

Range Check Change Proposal – USCRN CCR-48

A. Change for Fan Speed Range (requested by ATDD)

ATDD has informed NCEI that there will be a new aspiration fan model being installed on the Met One shields shortly, as the current stock of fans runs out. We examined cases where fan speeds occur in the database between the requested low range of 55 and the old low range of 80, and found there to be little impact from resetting these cases to a non-flagged state. Therefore, set the range check of the fan speed to accommodate behavior of a new fan model that produces similar volumetric air flow rate with a reduced fan speed indication:

	Current		Proposed	
	Low	High	Low	High
Fan speed	80	160	55	160

B. Changes/Additions to RH Instrument Variable Ranges (requested by NCEI)

The current calibration intercepts for the TRH device range from -39.72°C to -40.16°C, so when instrument voltage goes to zero, values colder than -39.7°C are suspect, and values even more negative indicate instrument failure. On the warm side, the instrument is rated to 60.0°C, which is also higher than the global surface air temperature record. For RH, 0% is not possible with a functioning instrument, with any value below 0.1% is unreliable. The instrument cannot report a value higher than 100%, so the upper range limit was adjusted to this value. STD ranges were based on the extreme fluctuation days at Valles Caldera. Updated/additional range checks added to database/ingest:

	Current		Proposed	
	Low	High	Low	High
RH05-RH60	0.1	104	0.1	100
RH_STD	0	30	0	15
TRH05-TRH60	NONE	NONE	-39.7	60
TRH_MIN	NONE	NONE	-39.7	60
TRH_MAX	NONE	NONE	-39.7	60
TRH_STD	0	3	0	5
*RH_HR_AVG	0.1	104	0.1	100
*TEMP_HR_AVG	-60	60	-39.7	60

\*These elements are no longer used, and only applied to AVL stations (though there are unflagged zero values in the database for other stations in some streams in 2006, etc., that will become flagged as they should be).