Jan's injection failure scenarios are for the left-hand side. Need to check stored beam for both protons and heavy ions, for collision and injection optics and for the worst polarity combinations of the IR bumps.

Studied for V6.503 optics, with the n1 assumptions of

Orbit tol.	Beta-beat	D_x	Delta-p
3mm (4mm Inj)	0.2	0.27	1.5 (0.86) x 10^{-3}

Emittance etc for ions taken from the design report

	n1	Protons	Protons	Ions	Ions
	Location [m]	Inj.	Col.	Inj.	Col.
	-112.768	19.9	62.5	20.5	14.2
2.5m shift	-110.268	15.8	50.6	16.3	11.1
	+112.768	18.5	52.3	19.0	11.6
2.5m shift	+110.268	17.0	46.7	17.5	9.5
		0 XA +1 Sep.	+1 XA 0 Sep.	0 XA +1 Sep.	-1 XA 0 Sep.

XA: 80 urad (with 70urad Spect.)

Without separation bump and -ve polarity crossing angle

Displacement	Left side	Right side
2.5m	14.2 -> 11.1	11.6 -> 9.5
2.0m	14.2 -> 11.7	11.6 -> 10.0
1.5m	14.2 -> 12.3	11.6 -> 10.5

With -ve separation bump and -ve polarity crossing angle

Displacement	Left side	Right side
2.5m	13.8 -> 11.5	11.3 -> 9.2
2.0m	13.8 -> 12.1	11.3 -> 9.7
1.5m	13.8 -> 12.7	11.3 -> 10.1

Conclusion

Smallest n1 occurs for collision optics with ions, for the case a negative polarity crossing angle and negative separation bump (if applied).

This smallest n1 is 9.2 for a **2.5m** displacement on the **right-hand side**.
A gain in n1 is made is only a 2.0m or 1.5m displacement is made.