Safety Evaluation and Management of MR Conditional Ancillary Equipment in the MRI Scanning Environment

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MR Safety Event

Door
100G line (tape)
3T scanner

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100G line (tape)
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MR Conditional Equipment

Our Follow-up Questions
- Is the 100G line marked correctly?
- What reference point on the vent/stand is used?
- How much "wiggle room" is there at the "pinch point"?

Fringe fields / Spatial Gradients
At our "pinch point":
- Over ~30 cm (12") 100G increases to 300G
- Confirmed with direct measurement
Our new anesthesia machines:

Safety Margins for Placement

- 300G highest labeled fringe field on our maps
- Spatial gradient steeper here
- Keep to 100-200G (or less)

Closing thoughts

- "MR Conditional" equipment may be technically "MR Unsafe"
- Consider tethers, locks, blocks for in-room location control
- Handling in room only by trained MR personnel
- Build in safety margins when determining in-room "safe zones"