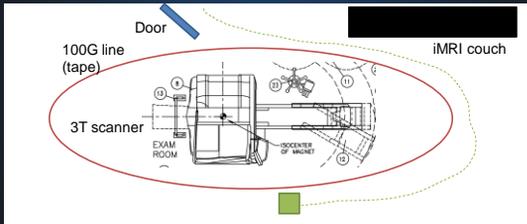


Safety Evaluation and Management of MR Conditional Ancillary Equipment in the MRI Scanning Environment

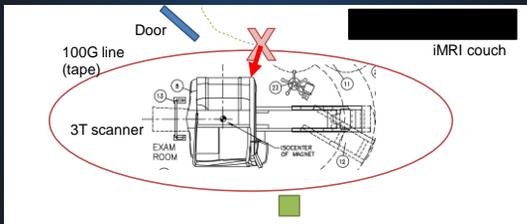
David W. Jordan, Ph.D., DABR, FAAPM
Chief Medical Physicist
Associate Professor of Radiology



MR Safety Event



MR Safety Event



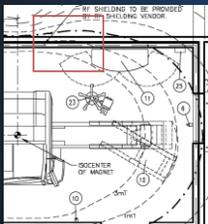
MR Conditional Equipment



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



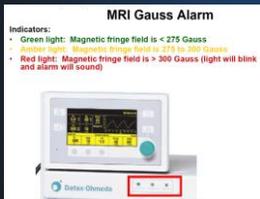
At our “pinch point”:

- 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”
