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PDII Tech Issues and Solutions

WRR 2 Set Phasors on Stun, Peppermint Twist, Silent Warning

1)

One technical issue mentioned in “Eng Ethics-Therac 25” was that it took several seconds for some settings to change, so when a setting was set, changed, and the beam was turned on, the beam would turn on mid setting transition, leading to the beam activating with settings that were different from what was shown.

One non-technical issue mentioned was the lack of failsafes to prevent extremely large dosages. The electron beam is capable of very high intensity so that it can go through a metal plate and become some safer intensity X-rays, but can also be set to a lower intensity for direct use. There was nothing preventing the beam from operating at it’s highest settings without the plate in place, so when a software bug occurred, there was nothing to stop the full-intensity beam from being activated directly to the patient.

Another non-technical issue was the lack of testing. These issues are repeatable, so they could have been found and addressed, but they simply didn’t consider in testing that the users would learn to give inputs very quickly, or how that could possibly affect the operation of the machine.

2)

One technical issue in “Peppermint Twist” is that there is nothing preventing the soap from being poured out of the bucket rather than into the dishwasher, where something like a special valve could have made this accident near impossible.

One non-technical issue is that the soap is treated very casually, where users, even from the company, don’t use proper safety measures when handling it, leading to users thinking “soap is soap”.

Another similar non-technical issue is the lack of labeling and education. Red text on a bottle of pink liquid doesn’t show up well, so users likely won’t even notice the warnings, and the additional information in the manual was tucked away out of sight and out of mind. This leads to users never knowing the warnings associated with it.

3)

Identify one common theme or consistent issue found throughout the 3 stories.

Between all three stories, engineers didn’t consider how or why their product may be misused by the end users. The Therac 25 engineers hadn’t considered that users would learn to type quickly

and sometimes make mistakes. The Eco-Klene soap was used in unexpected ways when it was transferred out of its container into unlabeled bottles for manual dishwashing use. And the methylmercury-laced seeds were only expected to be used in English-speaking western countries, making the warning labels useless when they were shipped to other parts of the world.