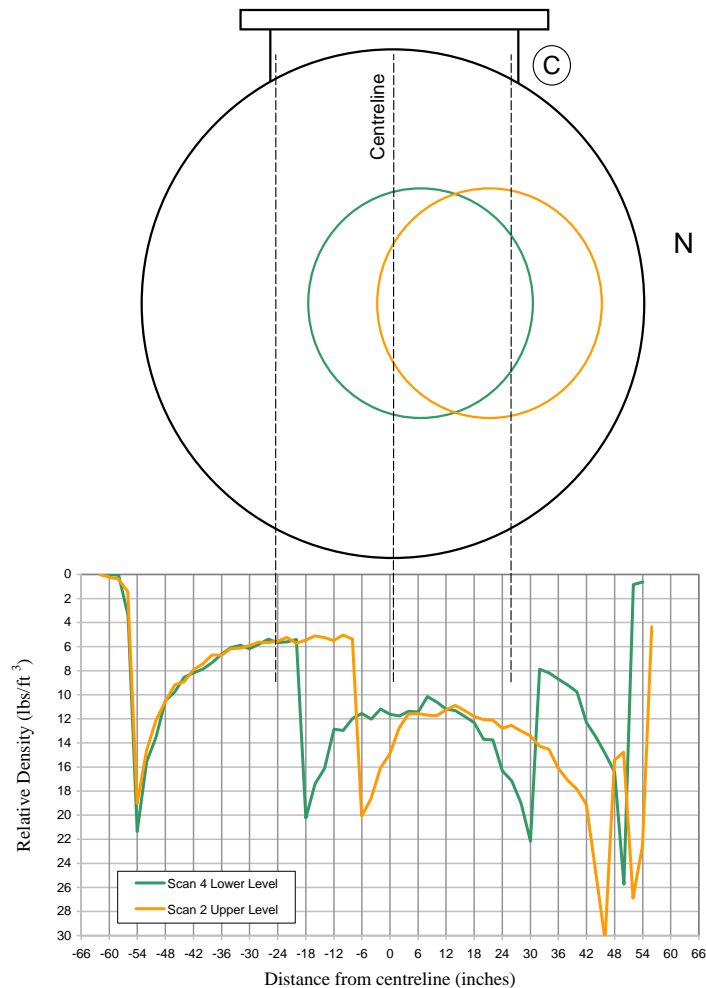


A TowerScan in a Different Plane

Pre Job Info: The customer had seen a very small change in the indicated pressure differential measured on their disengagement drum. In addition, one of the process operators noted an unusual “noise” in the vicinity of the drum, leading the process engineering/operations staff to suspect that the internal riser may have sustained damage. TowerScan was contacted to first confirm if there had been any damage to the internal riser, and if so, to determine the current orientation of the riser as different orientations would have various safety implications.

TowerScan Results: The scans were conducted by erecting a square horizontal framework of scaffolding poles at two different elevations. The source and detector were suspended from the scaffolding frame and then positioned so that they were past the edge of the drum, i.e. there was nothing between the source and detector. The source and detector were then moved in two inch increments, horizontally, to in effect take a cross-sectional cut of the disengagement drum. The source and detector were then repositioned so that the same process could be repeated at 90 degrees to the original orientation. This process was carried out at both the upper and lower elevations.

Horizontal Scans on Reactor-Internal Riser: East - West



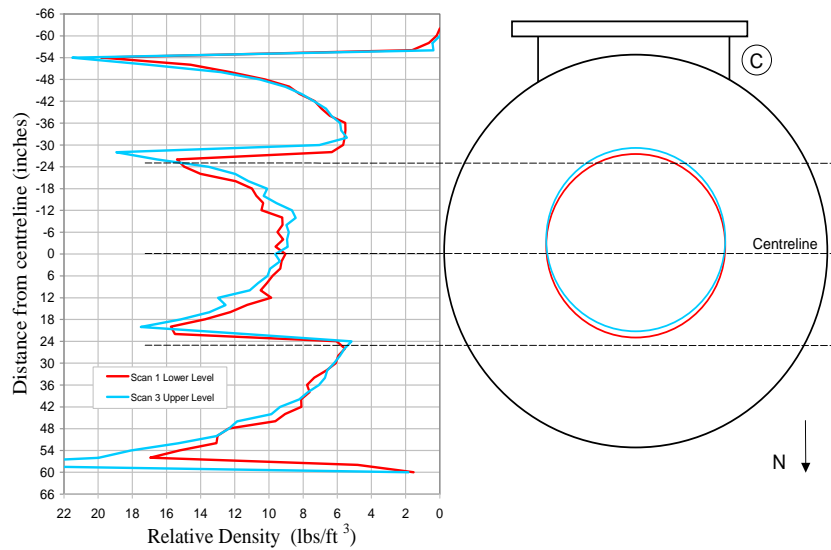
A TowerScan in a Different Plane (Continued)

If the riser was undamaged and in position, the density profiles should essentially be that of a smaller empty pipe (the riser walls), centered on, and superimposed upon a larger empty pipe (the drum walls). The scans indicated that the internal riser had in fact been broken off. The density profiles indicated that the top of the riser was leaning against the west wall of the drum, offset slightly to the south of the east-west centerline. Armed with this knowledge, process operations determined that with additional precautions they could continue operating the unit until the next scheduled shutdown.



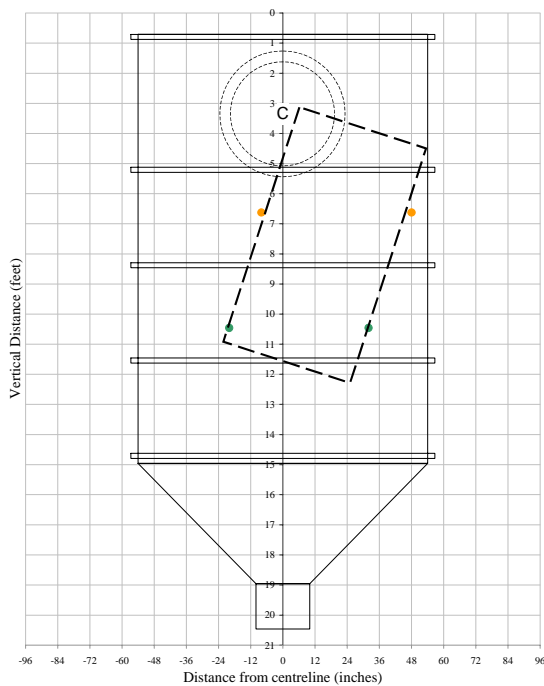
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Horizontal Scans on Reactor-Internal Riser: North - South



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Position of Damaged Internal Riser: North - South Plane



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Position of Damaged Internal Riser: East - West Plane

