
Question 16: What is your Best Practice for inspecting and preventing erosion in CCR lift lines?

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In CCR Platforming™ units, the movement of catalyst through the lift pipe results in contact between the catalyst pills and the inner surface of the lift pipe. In turn, this results in catalyst attrition and erosion of the pipe surface. A rupture in the catalyst lift line can lead to a hazardous situation, especially in a lift line that uses a hydrogen-rich lift gas. Severe lift line erosion is most likely to occur at an elbow or bend in the lift line due to the angle of contact between the catalyst and the elbow during catalyst lift. To prevent or minimize erosion in the catalyst lift lines, it is important to monitor and control the lift gas velocity and catalyst mass flux in the lift lines according to the guidelines of the licensor of the unit.

Honeywell UOP recommends periodic ultrasonic testing of the lift lines to determine the pipe thickness, with the inspection concentrated at the lift line bends as more erosion is usually seen there. For new units or new inspection programs, the frequency of testing should be at least annually to establish the rate of erosion after which the frequency can be adjusted as appropriate.

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