

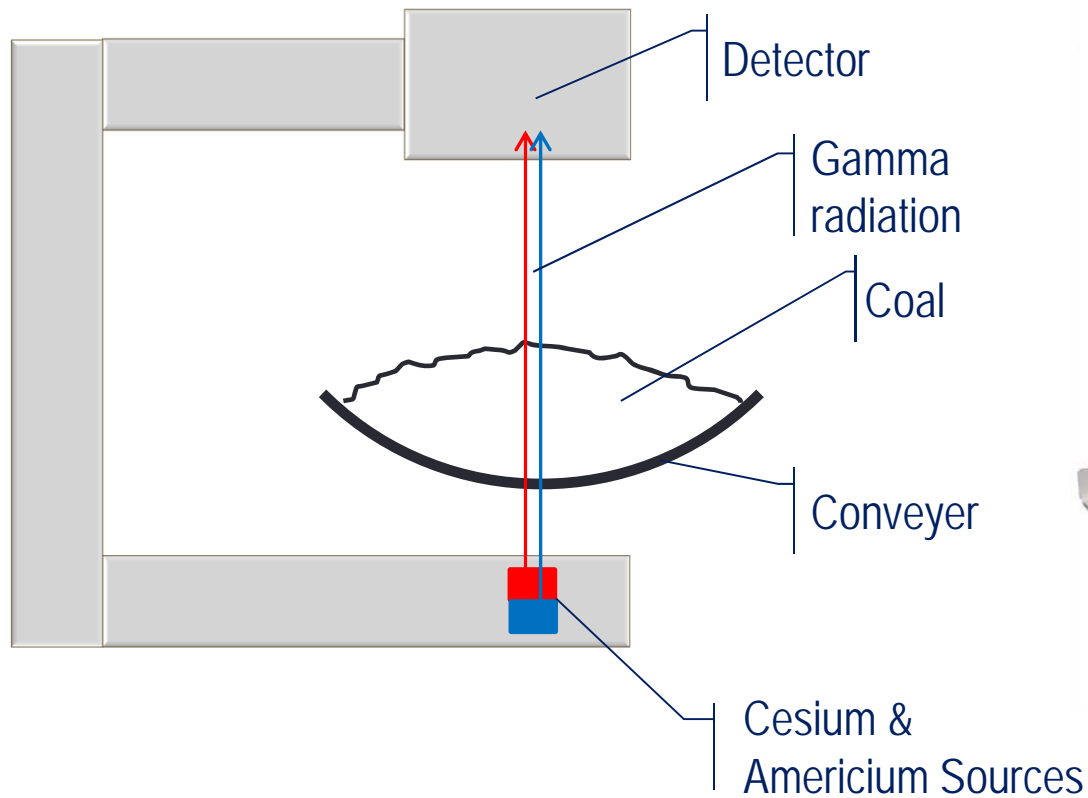
# AshScan®

DUAL Energy Transmission (“LET” = Low Energy Transmission)



# AshScan<sup>®</sup> - WORKING PRINCIPLE

Measures the absorption of gamma rays by the coal



## AshScan<sup>®</sup> - WORKING PRINCIPLE

Two radioactive sources used:

- Am<sup>241</sup> : low energy gamma radiation.
  - Absorption of these gamma rays will occur due to the presence of the major ash-forming elements (Si, Fe, Al, Ca) *and* the bed depth of the coal on the conveyor belt.
- Cs<sup>137</sup> : high energy gamma radiation.
  - Absorption of the high energy gamma rays will be due only to the amount of coal it passes through i.e. the bed depth.

The Cs<sup>137</sup> allows us to normalise our Am<sup>241</sup> measurement to the bed depth.

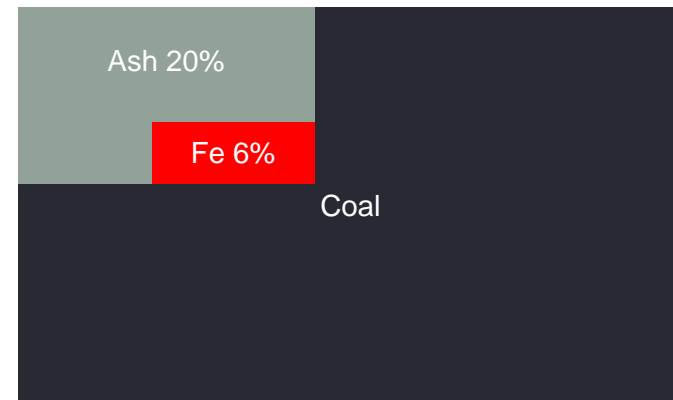
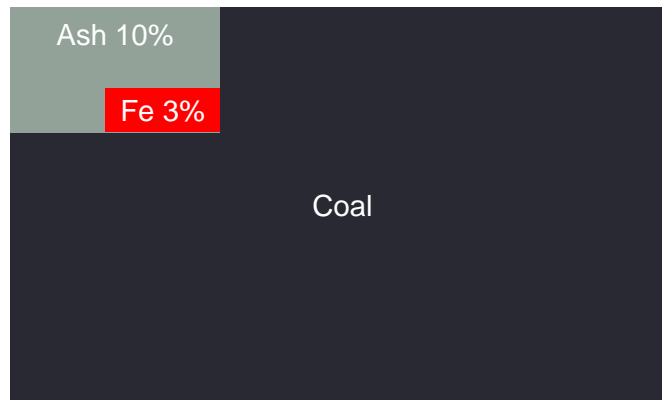
This is then correlated to total Ash content by calibrating with a laboratory Ash analysis.

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- Some elements like Fe and Ca absorb the low energy Am<sup>241</sup> gamma rays more strongly than others
- If the % of Fe or Ca *in the Ash* changes significantly, the calibration will need to be redone. Multiple Calibrations can be stored

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OK



Re-cal for  
better  
accuracy

