

March 2007

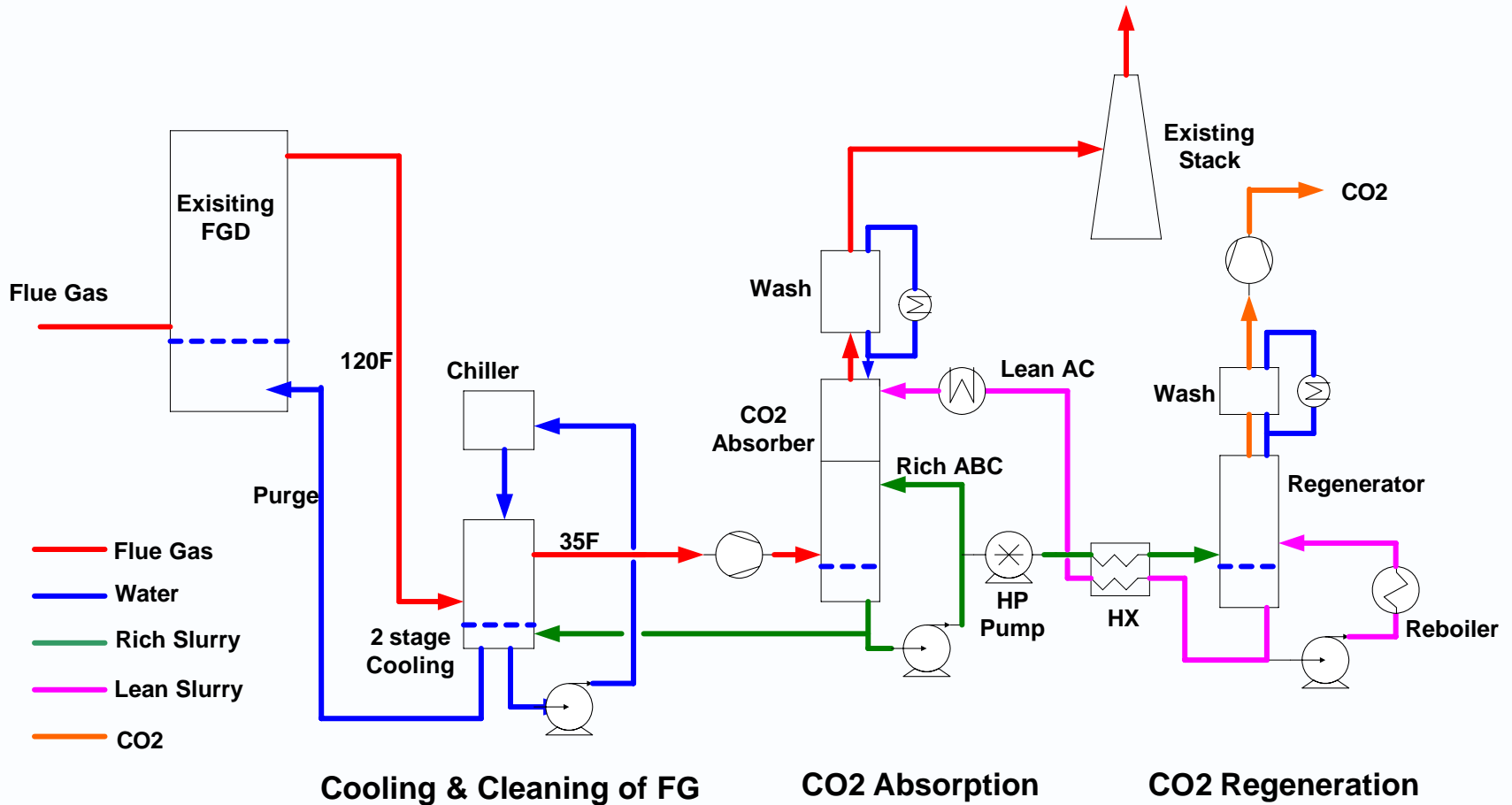
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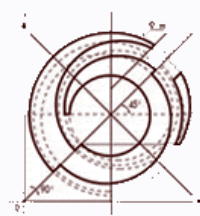
Chilled Ammonia Scrubber for CO₂ Capture

Bringing you a World of Experience in Clean Air Solutions

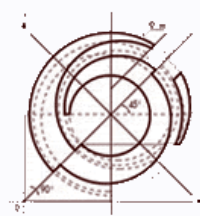
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Schematic of Ammonia-based CO2 Capture System





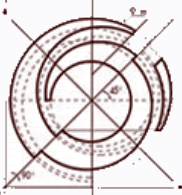
- Cooling the flue gas to 0-10°C
 - Condensing H₂O and eliminating residual contamination
 - Reducing flue gas volume and increasing CO₂ concentration
- Operating the absorber at 0-10°C for high CO₂ capture efficiency with low NH₃ emission
- Regeneration at >120°C and >20 bar to generate high pressure CO₂ stream with low moisture and ammonia concentration



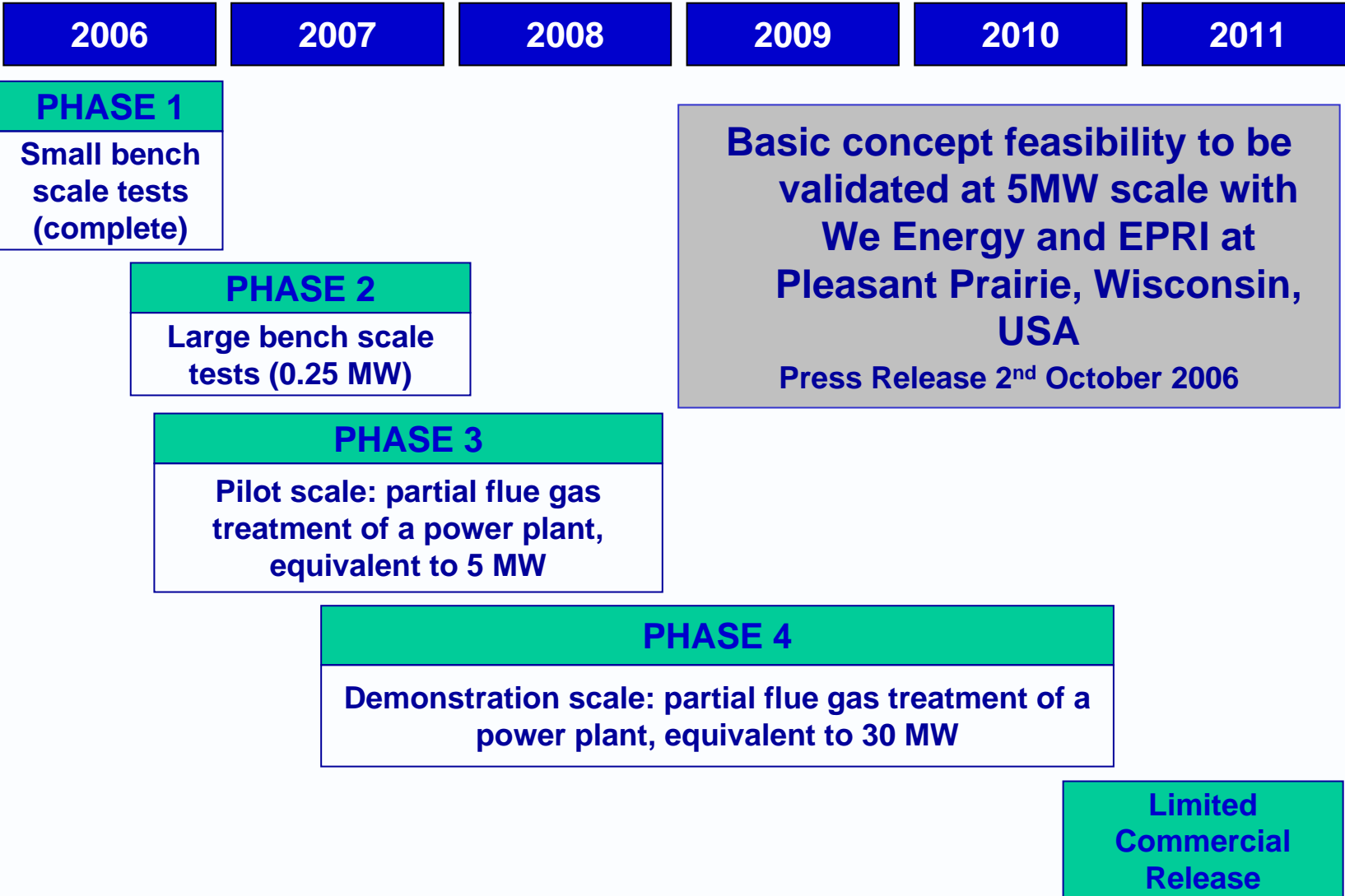
Advantages of Ammonia

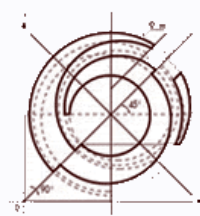
- High efficiency capture of CO₂
- Low heat of reaction
- High capacity for CO₂ per unit of solution
- Easy and low temperature regeneration
- Low cost reagent
- No degradation during absorption-regeneration
- Tolerance to oxygen and contaminations in gas

Chilled Ammonia Scrubber Development Plan



Major steps

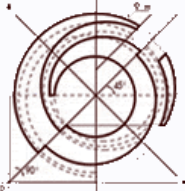




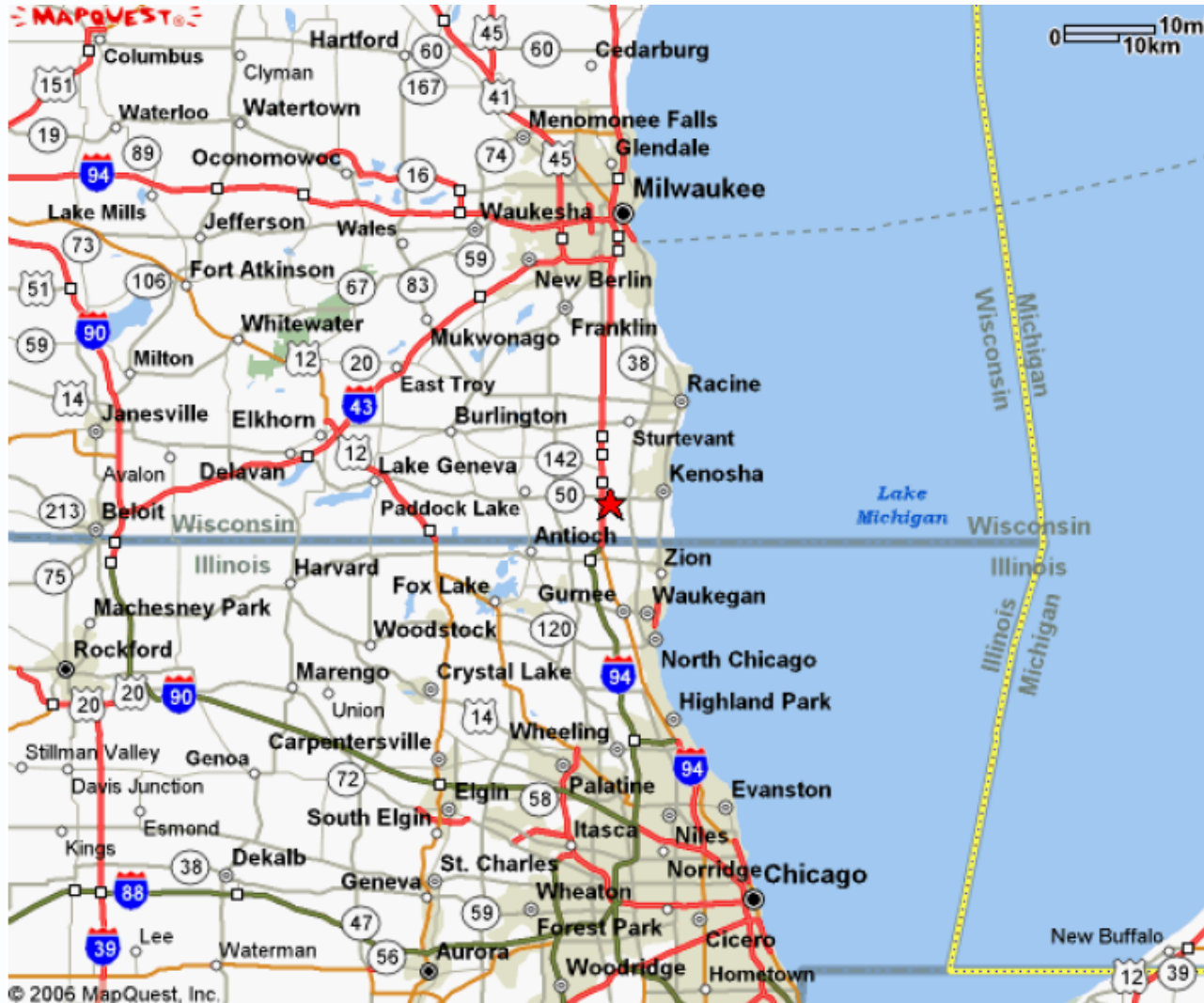
Photos of 0.25 MW Pilot

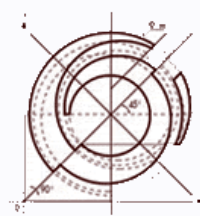


We Energies Pleasant Prairie Host Site Location for 5MW Pilot



Host Site Location





Proposed Pilot Location



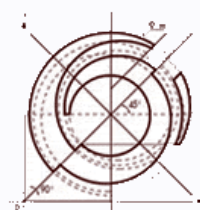
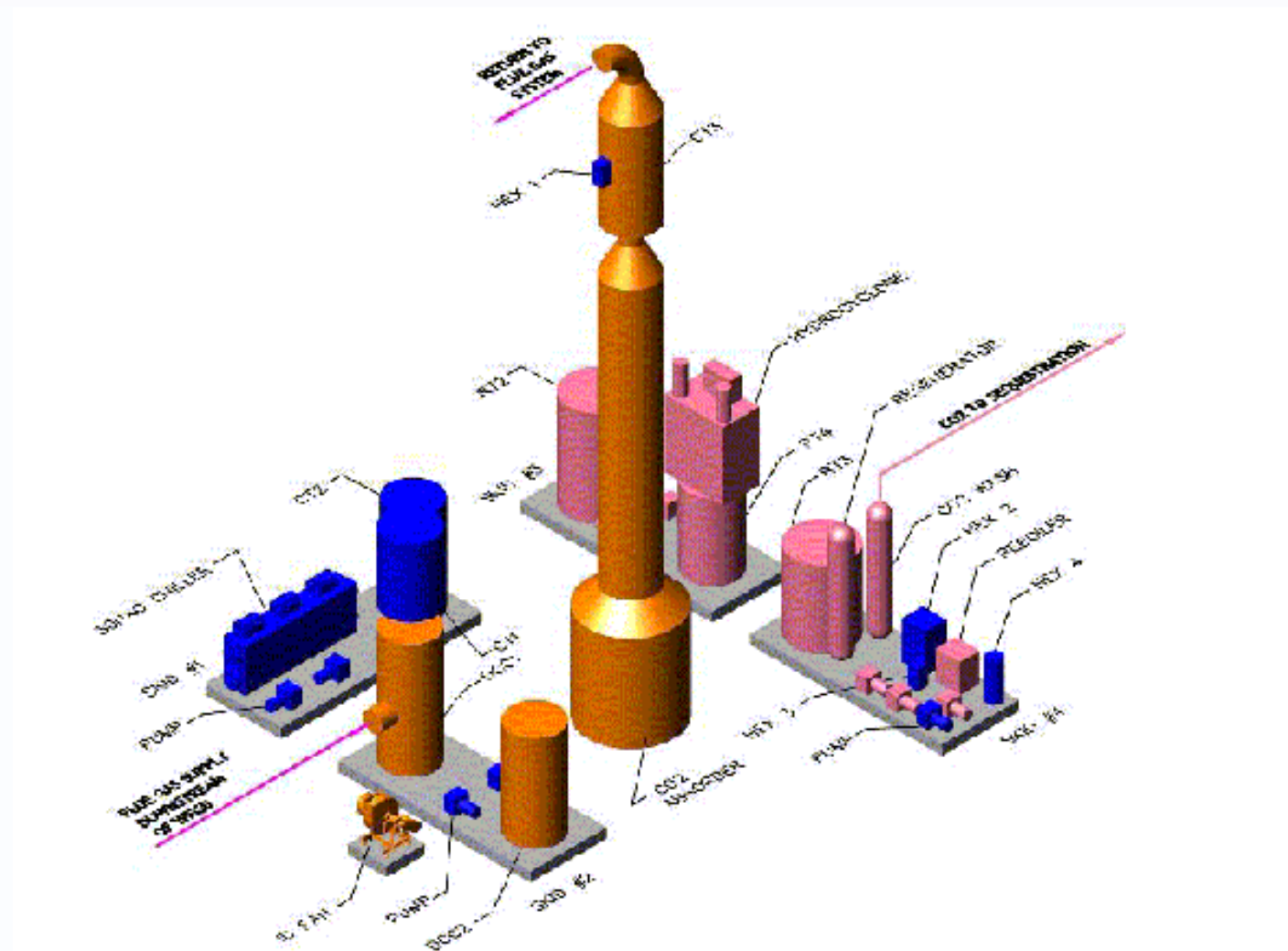


Illustration of 5MW Pilot



The Alstom logo is centered on a white semi-circular background. The word "ALSTOM" is written in a bold, sans-serif font. The letters "A", "L", "S", "T", and "M" are dark blue, while the letter "O" is red and stylized as a circle with a gap on the right side. A thick red curved bar arches over the top of the white semi-circle. The background of the entire image consists of vertical blue stripes of varying shades and some faint white curved lines.

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