System for Production of Ammonia from Urea*

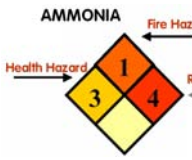
Hera Case History

Plant Data:

Location:	NOx Regulated Power Plants
Thermal Output:	As large as 1,300 MW
Ammonia Requirements:	As much as 4,000 lb/hr

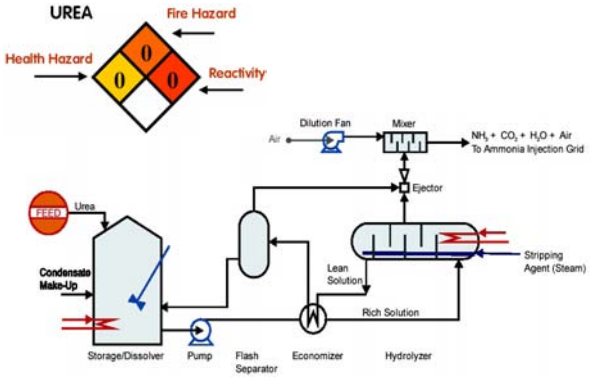
Problem:

With every change in environmental protection regulation comes a new set of challenges for the pollution control equipment operators. With respect to SCRs - large amounts of dangerous ammonia are required to be stored and handled.



Safe Ammonia for SCR Systems:

HERA has built its business on the premise that innovative ideas and strategic implementation create major value for those in the environmental pollution control business. HERA, in partnership with SiirTech Nigi (Italy), introduced its urea-based AMMOGEN system as an alternative to the storage and handling of large amounts of anhydrous or aqueous ammonia.



Economics:

By minimizing storage of ammonia, plants can qualify for less restrictive operating permits greatly reducing safety program costs which can total in the hundreds of thousands of dollars. Experience shows AMMOGEN capital and operating costs compare favorably with other ammonia delivery systems.

Experience:

By 2003 over 20 AMMOGEN systems were installed by Environmental Elements Corporation (EEC), former licensee of HERA and SINI, treating over 12,000 MW. EEC identified HERA and SINI's AMMOGEN systems by EEC's then existing trademark AOD. The "third generation" AMMOGEN units represent a mature technology with excellent reliability, smooth operation, reduced cost and simplified start-up.

Results:

With the EEC systems, having proven availability over 99.5%, the end user is able to rest assured that large quantities of ammonia can be generated and instantly delivered in time and without the risk of an ammonia "incident". The AMMOGEN technology is meeting the most stringent requirements of the utility industry.

Commercial Opportunities:

HERA has developed a number of complimentary NOx reduction technologies, such as ammonia slip control, in-situ catalyst performance evaluation, SCR catalyst cleaning and others.

* - U.S. Patent Nos. 5,985,224; 6,093,380 and 6,616,901

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