JAS Marketing, Inc.

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#2 AMMONIA PLANT

Capacity: Design rate is 200 STPD (180 MTPD). However, the plant produced as much as 240 STPD (216 MTPSD. Typical production figures follows:

2005 (not full operation)	46,358
2000	39,905
1997	78,360
1996	76,936
1995	83,661
1994	80,240

Licensor Kellogg

Raw Material. Natural gas

Year Built: 1966

Year shut down: December 2005 due to high gas price. All catalysts were removed, all pipes and exchangers were cleaned with steam, glycol was circulated through heat exchangers to dry the exchangers and the plant was put on nitrogen purge until end of 2007.

Utility consumption: Natural Gas: 37.70 MM Btu/ metric ton
Electricity: 1030 kWh/ metric ton

Compressor:

The plant has two (55% capacity each) multi-stage, Cooper Bessemer, Model KM10 combined service reciprocating compressor each complete with GE 4500 HP, 327 RPM electric motor.

Air compression is accomplished in four stages; Feed gas is compressed in a single stage; age Synthesis gas compression takes place in three stages; recycle gas has a single state and ammonia is compressed in three stages.

Several cylinders are in tandem making it possible to obtain all desired compression stages with ten crankshaft throws.

Control System:

The plant has pneumatic control system. Even though it is operable, it is old and bulky. A new DCS system will improve the efficiency of the plant and is recommended.

All technical documents, inspection reports, maintenance reports and operating records are available. Some spare parts are also available.

Improvements:

1. All Reformer tubes were replaced in 1996 with HP modified tubes in 1996. Since replacement, the plant operated ____ hours.

2. The fire bricks were replaced with z-blocks in 1996

3. The waste heat boiler liner wass replaced in 1996

4. The compressors were inspected and refurbished on a two year cycle.

The plant is in excellent condition.

All technical documents, inspection reports, maintenance records are available.

The plant was using an Analog control system. Even though the system is sill usable it may be difficult to find the parts for this. A new DCS control system is recommended.