TO WHOMSOEVER IT MAY CONCERN

This to certify that ABB have installed an Industrial Energy Management system at Reliance Industries Ltd, Hazira. The system was supplied in 1991 and was later upgraded in 1997. The system consists of 21 ABB Master (Substation Control Station) at 19 substations and two Advant Operator Station at control center. The following Industrial Energy Management functions are implemented in the system.

- Status and Alarm monitoring, analog metering
- Breaker control of 220 kV Switch Yard, 33 kV Main Receiving Station, 6.6 kV and 415 volt supply distribution
- Islanding and Load Shedding scheme consisting of -
- Contingency based fast load shedding
- Back up load shedding based on under frequency
- Over load shedding
- Manual load shedding
- Reports and trends
- Serial communication with intelligent devices (e.g. Meters) using MODBUS protocol

The upgraded system has been working satisfactorily since 1997. The load shedding function has successfully operated each time in the last two years when required by system disturbances.

[Signature]

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