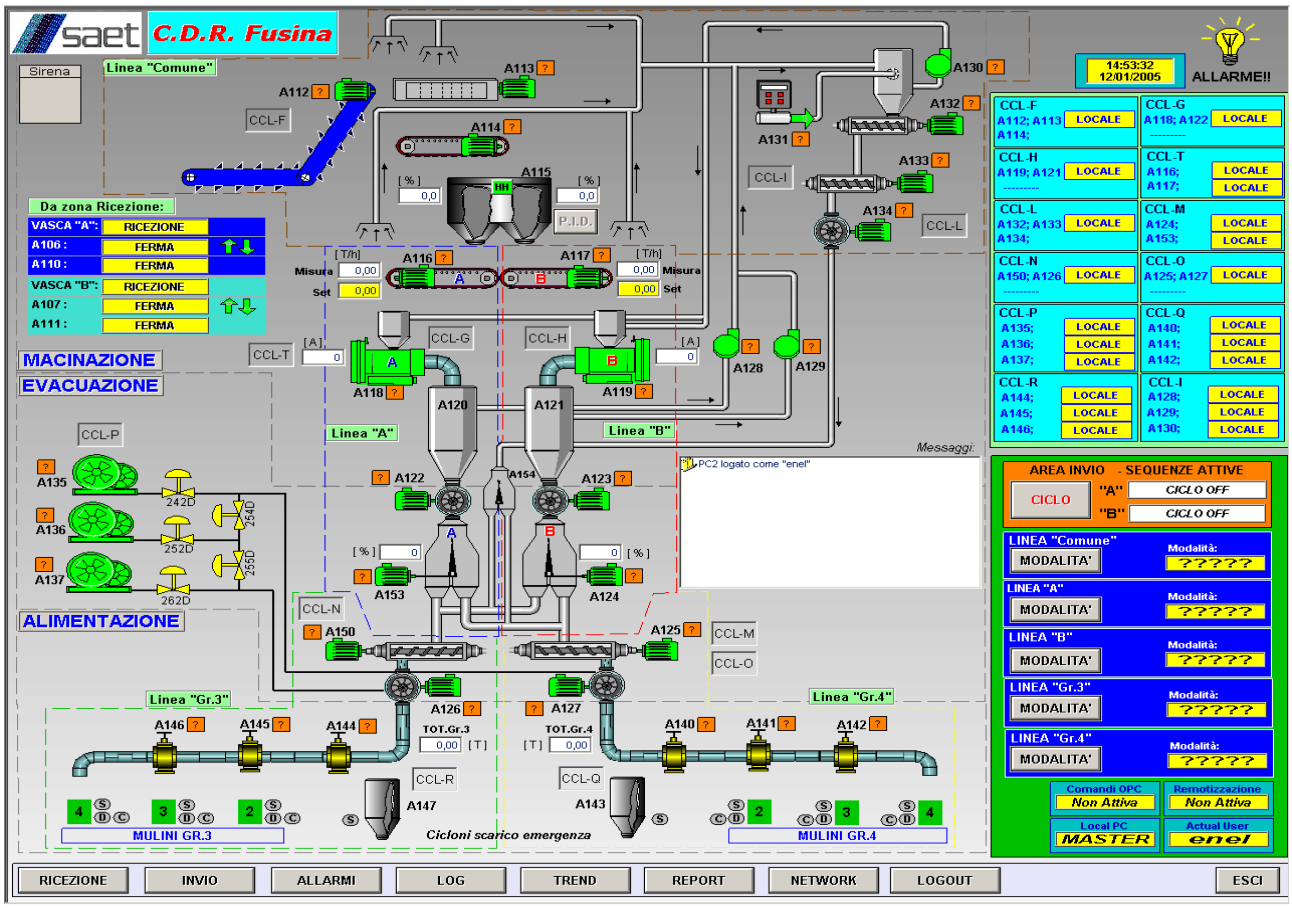
Application-note

AN 14-55-F950

TECHNICAL REFERENCE SHEET

TECHNICAL REFERENCE SHEET FOR PELLETIZED CdR MILLING, PNEUMATIC TRANSPORT SYSTEM, CONFINEMENT AND AMBIENTAL PROTECTION SYSTEM PLANT - Fusina, ITALY



Video screen with layout of CdR milling and pneumatic transport system for Fusina Thermoelectric Power Plant

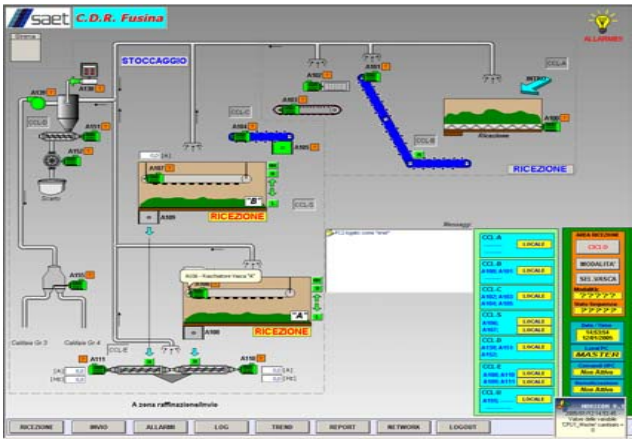
CLIENT: **ENEL PRODUZIONE S.p.A.**
Fusina Thermoelectric Power Plant, ITALY

PLANT DESCRIPTION

Pelletized CdR milling system, pneumatic transport system, confinement and ambiental protection system plant, has been realized for groups 3 and 4 of Fusina Thermoelectric Power Plant, in Italy.
The plant's function is to realize the simultaneous combustion into the boilers (usually called co-firing) between coal flour and CdR (solid fuel composed by the dry fraction of urban refuses) pellet or fluff shaped.
The plant has been built parallel to the primary feeding system (of coal flour) and it's composed by the following areas:
- CdR Receptioning and Storing zone;
- CdR Milling zone;
- CdR Pneumatic Transport (to the boiler) zone.

SAET DPN-Speciale series
Weight Belt Feeder for CdR and Pfu

We have also supplied a Confinement and Ambiental Protection System to limit the pollution, containing into the plant dusts and bad odours.



Video screen of confinement and ambiental protection system

PLANT ARCHITECTURE

The plant has been built inside of a steel structural building and it's continuously kept under atmospherical preassure to avoid escapes of dust and bad odours, produced by CdR.

CdR Receptioning and Storing zone

CdR Receptioning area is composed by a hopper with moving platform, that convey the material to an elevation redler belt conveyor. This redler is equipped with a primary deferrizator and transports the CdR (pellet shaped) to the storing tanks.
The two storing tanks, alternately feeded by an apposite gum belt conveyor, are equipped with moving mechanical rakes, that arrange uniformely the material.
The extraction from the storing tanks is realized with a dosing screw conveyor, one for each tank. CdR, in this way, is unloaded to a second elevation redler belt conveyor and, then, to a gum belt conveyor with another deferrizator (called secondary deferrizator).
The material can, now, be unloaded to CdR milling zone.

Photo of hopper with moving platform (CdR Receptioning zone)

CdR Milling zone

The CdR is sent to a storage unit hopper, that provides to repart the material to two weight belt feeders. Two blade mills, feeded with the right flow rate(request to the plant) by the weight belt feeders (one for each mill), grind the material realizing CdR fluff shaped.

Photo of a mill (CdR Milling zone)

CdR Pneumatic Transport zone

The grinded material is extracted from mills with a closed ring pneumatic system, powered by an extraction fan. The separation between fluff CdR and transport air flow is realized with two centrifugal dust separators and two air filters.
The material, extracted by the centrifugal dust separators, is unloaded, with the use of star valves, to a ripartition system composed by: two motor-operated switch valves, two dosing screw conveyors and two stellar thrusts. This system reparts grinded CdR to two boiler groups.
The grinded CdR is sent to two pneumatic transport lines, thinned with compressed air (produced by booster compressors, one for each line), to the injection points. The CdR can be introduced to the boiler of groups 3 or 4 using pneumatic switch valves.
In this configuration the CdR is injected into the air - coal flour flow and, mixed with this flow, is sent to the boilers.
The plant is completed by electric LV cabinet boards that feeds the uses and an automation system that controls operation sequences.

Photo of centrifugal dust separators (CdR Pneumatic Transport zone)

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