

Leonardo Arrighi

2-7-14

AR# 1080

DeMeo, Sharon M.

From: DeMeo, Sharon M.
Sent: Friday, January 31, 2014 4:53 PM
To: 'Francesco.olivieri.ena@enel.com'
Subject: Italian Power Plants with VCE Technology

sell to construction
wet bottom incinerator
ash

Hi Francesco,

Thank you for your assistance in distributing this request to the appropriate individual(s). According to my literature search, Aquatech has installed vapor compression evaporation (VCE) systems at five ENEL facilities in Italy to treat FGD wastewater. These plants are Fusina, Torvaldaliga Nord, Sulcis, La Spezia and Brindisi Sud. In addition, I understand that the VCE systems at the Fusina and Sulcis plants are not currently operating. If possible, I would like to know why the operations at these two facilities have been discontinued?

dry ash cell

Furthermore, the "Aquatech Project Profiles" for these facilities indicate that each VCE installation is considered a zero liquid discharge (ZLD) system and that "[t]he industrial grade soft water and high purity distillate produced in the system will be used in the main power plant." I would like to find out where (which processes) in the plant the distillate is re-used. Also, do those processes result in any wastewater that is ultimately discharged? For example, VCE distillate might be used as boiler make-up water and boiler blowdown may be discharged to the receiving waters. Another example is if distillate (or brine concentrate) from the VCE is used to condition (wet) fly ash, there may be a discharge of leachate from an on-site fly ash landfill.

yes
- yes
no
NO

I am also interested in whether these are base-load plants and if considerable time is needed for the VCE system to "ramp up" or become stabilized after any down time. Further, what actions are taken if the FGD waste water is not successfully crystallized.

Any information your company will share or point me towards is greatly appreciated.

Regards,

Sharon

running all the time.

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~~Discharge~~ Discharge through municipal treatment plants.
No

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Not problem w/ equipment.

Installed only on most advanced coal fired plants.

4 plants →

Brindisi

Expert plant.

all equipment working properly.

reuse → scrubber water

No ^{19.} discharge → from entire plants.

no hauling wastewater by truck off-site.