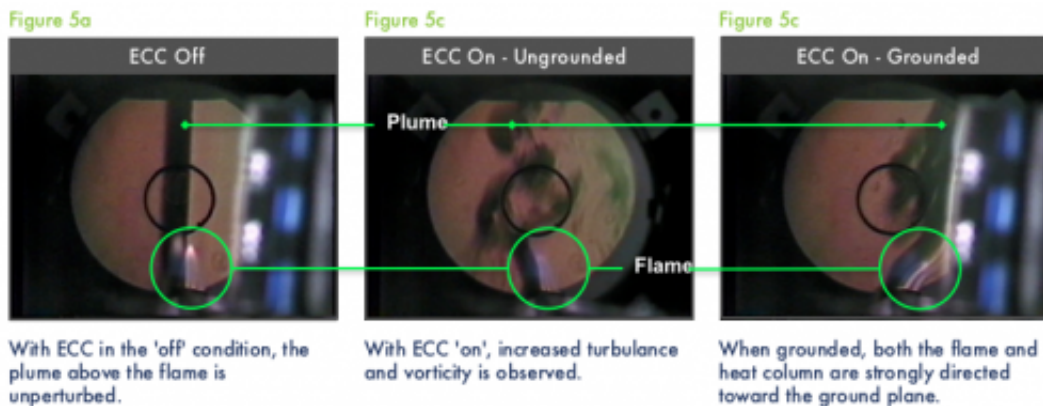


Company using electric field to shape flame to make power plants cleaner

October 29 2013, by Bob Yirka



(Phys.org) —Seattle based ClearSign Combustion has developed a way to reduce the amount of pollutants emitted by power plants that burn fossil fuels. The technique, the company claims, also makes the burning of the fuels more efficient, which means utilities could actually save money by using the new technology.

Scientists have known for years that introducing an electric field into a fire could cause changes to the shape of the flame. They've also known that doing so can cause the burning process to be more efficient—that's because inefficiencies creep in when some fuel is not burned all the way

(releasing soot), or is burned at too high of a temperature (creating and releasing nitrogen oxides). Until now, however, scientists have not been able to come up with a way to control a flame in a power plant using an [electric field](#) in a practical way. ClearSign is announcing on its website that it has found a way to do just that. They insert two probes directly into the burn area where the flame is, then apply a high amount of voltage (that is adjusted in real time by a computer) to continuously adjust the shape of the flame. Adjusting the [flame](#) shape usually takes the form of flattening it out so that heat is evenly distributed.

ClearSign claims that its system (called Electrodynamic Combustion Control technology) can improve efficiency in a power plant by as much as thirty percent. That claim has not yet been verified by others outside the company, however. If the claims hold up the new technique could be just what the world needs—coal fired [power plants](#) are responsible for most of the smog that has made headlines of late as it chokes people in China and India.

ClearSign says that their technology would reduce the amount of fuel a plant would use to produce the same amount of electricity and that it would also make other [pollution control technologies](#) moot which would mean lower start-up costs for the equipment and lower running costs due to reclamation of energy that has traditionally been dedicated to that purpose.

More information: www.clearsign.com/

via [MIT Tech Review](#)

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