

**International Workshop on
Environmental Aspects of Coal Ash Utilization**

Tel Aviv, Israel
December 15th – 16th 2009

Define Coal Ash as a Nuisance Dust

The Professional and Regulatory Process in the Netherlands

Dr. R. Meij and B.H te Winkel

KEMA, the Netherlands

Abstract

Coal ash is considered as a nuisance dust in the Netherlands. Extensive multi-discipline research done around 1980 led to this conclusion. This National Coal Research was paid for and started on initiative of the Ministry of Economic Affairs in order to introduce coal firing in the Netherlands in a sound and smooth way. The first oil crisis in 1974 showed that the energy depends heavily on oil and natural gas and coal must be reintroduced again in the Netherlands. People are suspicious against something they are not used to it, in general and thus they should be persuaded by scientific evidence. The research was performed by well-known and trusted Dutch institutes, such as TNO, ECN (Netherlands Energy Foundation) and KEMA as well as Universities and managed by the Dutch authoritative institute RIVM (National Institute of Public Health and Environmental protection). The results obtained and supported by a combination of these institutes are well accepted and not argued.

The Dutch Health Council has different Expert Committees on Occupational health issues (named Committee of Experts). Each committee consists of independent experts and they propose occupational (air) standards to the government. First a public draft is made on which parties concerned can make comments; these comments will be adopted in the final report. This final report is presented to the government. After that a sub-committee TLV (threshold limited values) of The Social and Economic Council of the Netherlands (SER) looks at the social economical aspects and the technical feasibility. The SER is an advisory and consultative body of employers' representatives, union representatives and independent experts. This SER-sub committee presents their advice to the government. The government enacts, based on both reports, a legal (air) limit. This heavy procedure is called a three-stage procedure. Besides to those there administrative limits for occupational health; they have no legal status. In the past they were adopted from the ACGIH in the USA. Nowadays they are proposed by the Labour Inspectorate (Arbeidsinspectie), which is part of the Ministry of Social Affairs and Employment and are rough tested by the above mentioned SER-sub committee. An example of legal air limit for occupational health is quartz. An example for an administrative limit for occupational health is coal dust. Both limits apply only to the respirable fraction.

The Labour Inspectorate (Arbeidsinspectie), which is part of the Ministry of Social Affairs and Employment, ordered a study to prepare guidelines for working with coal fly

International Workshop on Environmental Aspects of Coal Ash Utilization

Tel Aviv, Israel
December 15th – 16th 2009

ash. This study was performed by an expert on working conditions of a power station. The results were based on the national Coal Research findings, but in addition to that more attention was given to quartz. It was finished in 1989 by publishing a guideline.

Ten years later the Fly Ash Corporation in the Netherlands (Vliegassunie) ordered KEMA to evaluate this guideline. In between coal was imported from much more countries than before. Next to that the assignment includes the exposure of the general public and coal dust. It appears that the conclusions were still valid, but that the evidence that quartz in coal ash was no problem, could be stronger. An extensive research on the quartz in coal dust and coal ash was performed, besides well known experts were involved. The results were presented at an important international congress (7th International Symposium on Particle Toxicology, held in Maastricht, The Netherlands on October 13, 14 and 15 1999). The conclusions were accepted by the international specialist present. Many reports of all the additional research performed were written: occupational health, fugitive dust, stack emissions, co-combustion, coal, quartz, Cr VI, radioactivity, dioxins and PAHs. Each subject of importance was summarised in a small reports available for interested. Next to that each report was peer reviewed by independent experts in that area. The reports were sent to parties concerned, such as various government levels, physicians of occupational health, environmental movement etc. These ten reports were summarized again in a small report, available for the general republic. Workshops were organised for both physicians and workers on occupational hygiene. The Status Report on the health Issues Associated with Pulverised Fuel Ash and Fly dust is regarded as a standard work in the Netherlands and even quoted by the minister when answering questions of the parliament. This report is updated regularly.

In case of co-firing, it must be proved that the coal ash is still a nuisance dust. A computer model (KEMA DAM®) was developed, that evaluate for each fuel combination (coal and secondary fuel) whether the ash can be considered as a nuisance dust or not. In all cases studied so far it appeared that the ash proved to be a nuisance dust.