Product consistency is one of the most important quality parameters controlled in the cement manufacturing process. XRF and XRD are the primary analytical equipment used for automated process control in order to reduce the variability of each step throughout the process, as well as for troubleshooting process and product concerns. XRF is used for raw mix determination and verification of PGNAA online analysis as well as certification of final product, while XRD is used for rapid control of the pyro process through determination and quantification of clinker minerals. Both techniques yield data quickly and with high frequency when paired with an automated laboratory which allows for fast response to changes in the process or raw materials resulting in improved product consistency.