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TO: Air Quality Permitting Program Permit Evaluators and Air Quality Evaluation Section Technical Staff

FROM: Frank Steitz
Chief, Bureau of Air Permitting

SUBJECT: Interpretation of the definition of "dual fuel"

DATE: June 29, 2011

This memorandum is meant to clarify when a burner installed in an Industrial/ commercial/institutional boiler or other type of indirect heat exchanger can be classified as a "dual fuel."

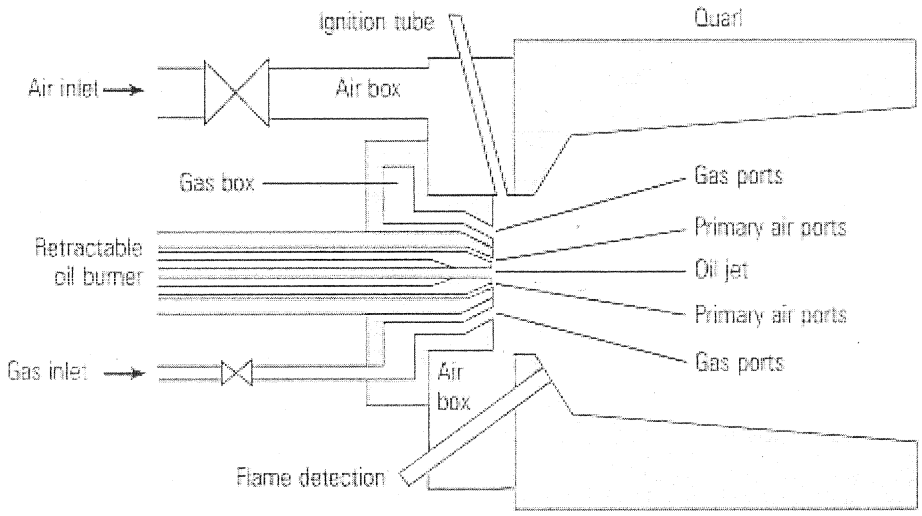
N.J.A.C. 7:27-19.1 defines "dual fuel" to mean, "a type of burner capable of combusting more than one type of commercial fuel." Interpretation of the definition of "dual fuel" is critical in regulating indirect heat exchangers subject to N.J.A.C. 7:27-19.7 "Industrial/ commercial/ institutional boilers and other indirect heat exchangers." Table 9, "Maximum Allowable Emission Rates for Industrial/Commercial/Institutional Boilers or Other Indirect Heat Exchangers Fired by Gas or Liquid Fuels (pounds per million BTU)" lists different nitrogen oxide(s) emission limit based on whether the unit's burner can only burn one type of fuel (fuel oil or natural gas) or can burn two types of fuel.

A dual fuel burner may have separate natural gas and fuel oil injection nozzles. However, to be classified as a dual fuel burner, the burner must have all of the following characteristics:

1. Been installed as a single unit from one manufacturer;
2. As illustrated in Figure 1, have a common combustion air feed system which is the sole supply of combustion air when either fuel is burned;
3. As shown in Figure 1, if one is present, have a common flame detector/UV scanner that can monitor the combustion of both natural gas and fuel oil; and
4. If one is present, have a common flame inspection window/port which can be used to view the flame when combusting either type of fuel.

Figure 1 provides a diagram of a typical dual fuel burner.

FIGURE 1, DUAL FUEL BURNER



Please note that a burner can have more than one nozzle and be classified as "dual fuel", but both fuels do not have to be simultaneously fired. Also note that it is not uncommon for a facility to remove the oil gun from the burner when the boiler is burning natural gas.

Permit evaluators and technical staff must request documentation such as burner manufacturer cut sheets, drawings, etc. during the permitting process to verify burner type. Staff is advised to consult with their section chief if any clarification or input is needed.

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