Appendix B

Control Option 5

Control Option: Use of Lowest Achievable Emission Rate (LAER)

For major new sources and major modifications in non-attainment areas, LAER is the most stringent emission limitation derived from either of the following:

- the most stringent emission limitation contained in the implementation plan of any State for such class or category of source; or
- The most stringent emission limitation achieved in practice by such class or category of source.

The use of LAER in permitting of new or modified major sources could be used by Colorado to control growth related increases in NOx emissions, statewide or in the Front Range counties, in order reduce nitrogen deposition rates at RMNP consistent with the stated resource management goals. This would be a state only permit requirement and not be incorporated into Colorado's SIP.

The most stringent emissions limitation contained in a SIP for a class or category of source must be considered LAER, unless (1) a more stringent emissions limitation has been achieved in practice, or (2) the SIP limitation is demonstrated by the applicant to be unachievable. By definition LAER can not be less stringent than any applicable new source performance standard (NSPS).

EPA recommends these sources of information for determining LAER

- SIP limits for that particular class or category of sources;
- preconstruction or operating permits issued in other non-attainment areas; and
- The BACT/LAER Clearinghouse [http://cfpub.epa.gov/RBLC]

Several technological considerations are involved in selecting LAER. The LAER is an emissions rate specific to each emissions unit including fugitive emissions sources. The emissions rate may result from a combination of emissions-limiting measures such as (1) a change in the raw material processed, (2) a process modification, and (3) add-on controls. The reviewing agency, in this case CDPHE, determines for each new source whether a single control measure is appropriate for LAER or whether a combination of emissions-limiting techniques should be considered.

Unlike Best Available Control Technology (BACT) used for major sources in attainment areas, the LAER requirement does not consider economic, energy, or other environmental factors. A LAER is considered not achievable if the cost of control is so great that a major new source could not be built or operated.

Examples from EPA's RACT/BACT/LAER Clearinghouse showing the current range of LAER nationally for NOx emissions follows:

Utility and large industrial-size boilers/furnaces (>250 million BTU/H) - .07 to .1 lb/MM BTU. This is being achieved through the use of combined control technologies such SCR, overfire air, and low NOX burners.

Large Combustion Turbines Combined Cycle (> 25 MW) using natural gas (includes propane & liquefied petroleum gas) – 1.5ppm to 2ppm at 15% O2. This is being achieved through the use of combined control technologies such SCR and low NOX combustors.

Large Internal Stationary Combustion Engines (> 500 hp) using natural gas (includes propane & liquefied petroleum gas) - .0015 g/hp/hr - 1 g/hp/hr. This is being achieved through the use of clean burn technology (lean burn, NSCR).

Small Internal Stationary Combustion Engines (< 500 hp) using natural gas (includes propane & liquefied petroleum gas) - .15 g/hp/hr - 2 g/hp/hr. This is being achieved through the use of clean burn technology (lean burn, NSCR, air/fuel ratio controller).

See: http://cfpub.epa.gov/rblc/cfm/menu_search.cfm

Control Option: Use of Emissions Reductions "Offsets":

A major source or major modification planned in a nonattainment area must obtain emissions reductions as a condition for approval. These emissions reductions are generally obtained from existing sources located in the vicinity of a proposed source and must (1) offset the emissions increase from the new source or modification and (2) provide a net air quality benefit. The purpose of acquiring offsetting emissions decreases is to allow an area to move towards attainment of the NAAQS while still allowing some industrial growth. This same approach could be used by Colorado to control growth related increases in NOx emissions at new or modified major sources (statewide or front range counties) in order reduce nitrogen deposition rates at RMNP consistent with the stated resource management goals.

Since this would be a state only offset requirement (and not be incorporated into Colorado's SIP), CDPHE would have significant flexibility in determining what requirements offsets must meet in order to achieve the objective of NOx control that benefits RMNP. EPA has set forth minimum considerations under the Interpretive Ruling (40 CFR 51, Appendix S) that could be used by CDPHE to develop a banking program. This ruling states that in general, emissions reductions which have resulted from some other regulatory action are not available as offsets. For example, emissions reductions already required by a state regulation cannot be counted as offsets. In addition, any emissions reductions already counted in major modification "netting" may not be used as offsets. Acceptable offsets also must be creditable, quantifiable, federally enforceable, and permanent. However, emissions reductions validly "banked" under a program developed by CDPHE could be used as offsets.

Usually an emissions offset must result in reasonable progress toward attainment of an air quality standard or goal. Therefore, the ratio of required emissions offset to the proposed source's emissions would have to be greater than one. However, since this would be an offset program limited to achieving NOx control that benefits RMNP, any offset that has a positive net air quality benefit for RMNP could be considered. Generally offsets should be located as close to the proposed site as possible, but for use in controlling growth related increases in NOx emissions that impact RMNP this should be modified to allow sources that are closer or impact RMNP to a greater extent to be used as preferential sources of offsets.