cost in constant dollars of low NOX retro- 
technology applied to Group 1, Phase I boilers 
pursuant to subsection (b)(2) of section 407 of the 
Act).'' In developing the alternative 
technology controls over a range of boiler 
sizes (as measured by the gross electrical 
capacity of the associated generator in megawatt 
electrical (MW)) and utilization rates (in percent gross 
nameplate capacity on an annual basis) to develop esti-
mates of the capital costs and cost effective-
ness for Group 1, Phase I boilers. The fol-
lowing units will be excluded from these deter-
minations of the capital costs and cost effective-
ness of NOX controls set pursuant to subsection 
(b)(1) of section 407 of the Act: Units 
employing an alternative technology, or overfire air as applied to wall-fired boilers or 
separated overfire air as applied to tangen-
tially fired boilers, in lieu of low NOX 
burner technology for reducing NOx emis-
sions; and (3) units that have not achieved the 
applicable emission limitation.

APPENDIX B TO PART 76—PROCEDURES 
AND METHODS FOR ESTIMATING 
COSTS OF NITROGEN OXIDES 
CONTROLS APPLIED TO GROUP 1, 
BOILERS

1. PURPOSE AND APPLICABILITY

This technical appendix specifies the pro-
cedures, methods, and data that the Admin-
istrator will use in establishing "the degree of 
reduction achievable through this retrofit 
application of the best system of continuous 
emission reduction, taking into account 
available technology, costs, and energy 
and environmental impacts; and which is 
comparable to the costs of nitrogen oxides 
controls set pursuant to subsection (b)(1) of 
section 407 of the Act." In developing the 
allowable NOx emissions limitations for Group 
2 boilers pursuant to subsection (b)(2) of sec-
tion 407 of the Act, the Administrator will 
consider only those systems of continuous 
emission reduction that, when applied on a 
retrofit basis, are comparable in cost to the cost 
in constant dollars of low NOX burner 
technology applied to Group 1, Phase I boil-
ers.

The Administrator will evaluate the cap-
ital cost (in dollars per kilowatt electrical ($/

\[ \text{511} \]
2. AVERAGE CAPITAL COST FOR LOW NOₓ BURNER TECHNOLOGY APPLIED TO GROUP 1 BOILERS

The Administrator will use the procedures, methods, and data specified in this section to estimate the average capital cost (in $/kW) of installed low NOₓ burner technology applied to Group 1 boilers.

2.1 Using cost data submitted pursuant to the reporting requirements in section 4 below, boiler-specific actual or estimated actual capital costs will be determined for each unit in the population specified in section 1 above for assessing the costs of installed low NOₓ burner technology. The scope of installed low NOₓ burner technology costs will include the following capital costs for retrofit application: (1) For the burner portion—burners or air and coal nozzles, burner throat and waterwall modifications, and windbox modifications; and, where applicable, (2) for the combustion air staging portion—waterwall modifications or panels, windbox modifications, and ductwork, and (3) scope adders or supplemental equipment such as replacement or additional fans, dampers, or ignition necessary for the proper operation of the low NOₓ burner technology. Capital costs associated with boiler restoration or refurbishment such as replacement of air heaters, asbestos abatement, and recasing will not be included in the cost basis for installed low NOₓ burner technology. The scope of installed low NOₓ burner technology retrofit capital costs will include materials, construction and installation labor, engineering, and overhead costs.

2.2 Using gross nameplate capacity (in MW) for each unit as reported in the National Allowance Data Base (NADB), boiler-specific capital costs will be converted to a $/kW basis.

2.3 Capital cost curves ($/kW versus boiler size in MW) or equations for installed low NOₓ burner technology retrofit costs will be developed for: (1) Dry bottom wall fired boilers (excluding units applying cell burner technology) and (2) tangentially fired boilers.

3. [RESERVED]

4. REPORTING REQUIREMENTS

4.1 The following information is to be submitted by each designated representative of a Phase I affected unit subject to the reporting requirements of § 76.14(c):

4.1.1 Schedule and dates for baseline testing, installation, and performance testing of low NOₓ burner technology.

4.1.2 Estimates of the annual average baseline NOₓ emission rate, as specified in section 3.1.1, and the annual average controlled NOₓ emission rate, as specified in section 3.1.2, including the supporting continuous emission monitoring or other test data.

4.1.3 Copies of pre-retrofit and post-retrofit performance test reports.

4.1.4 Detailed estimates of the capital costs based on actual contract bids for each component of the installed low NOₓ burner technology including the items listed in section 2.1. Indicate number of bids solicited. Provide a copy of the actual agreement for the installed technology.

4.1.5 Detailed estimates of the capital costs of system replacements or upgrades such as coal pipe changes, fan replacements/uploads, or mill replacements/uploads undertaken as part of the low NOₓ burner technology retrofit project.

4.1.6 Detailed breakdown of the actual costs of the completed low NOₓ burner technology retrofit project where low NOₓ burner technology costs (section 4.1.4) are disaggregated, if feasible, from system replacement or upgrade costs (section 4.1.5).

4.1.7 Description of the probable causes of the significant differences between actual and estimated low NOₓ burner technology retrofit project costs.

4.1.8 Detailed breakdown of the burner and, if applicable, combustion air staging system annual operating and maintenance costs for the items listed in section 3.3 before and after the installation, shakedown, and/or optimization of the installed low NOₓ burner technology. Include estimates and a description of the probable causes of the incremental annual operating and maintenance costs (or savings) attributable to the installed low NOₓ burner technology.

4.2 All capital cost estimates are to be broken down into materials costs, construction and installation labor costs, engineering and overhead costs. All operating and maintenance costs are to be reported in dollars with the year of expenditure or estimate specified for each component.


PART 77—EXCESS EMISSIONS

Sec.
77.1 Purpose and scope.
77.2 General.
77.3 Offset plans for excess emissions of sulfur dioxide.
77.4 Administrator’s action on proposed offset plans.
77.5 Deduction of allowances to offset excess emissions of sulfur dioxide.
77.6 Penalties for excess emissions of sulfur dioxide and nitrogen oxides.