I INTRODUCTION

I(a) TITLE AND DESCRIPTION

The title of this document is "Regulatory Impact Analysis for part 64 Compliance Assurance Monitoring Regulation." This document complies with the requirements of Executive Orders (EOs) 12866, 12875 and 12898; the Paperwork Reduction Act; the Regulatory Flexibility Act; and the Unfunded Mandates Reform Act (UMRA) of 1995 (P.L. 104-4). Title VII of the Clean Air Act Amendments of 1990 (CAAA or "the Act") requires the Agency to develop enhanced monitoring and compliance certification requirements for all major stationary sources of air pollution. The Compliance Assurance Monitoring (CAM) rule in 40 CFR part 64 and revisions to 40 CFR parts 70 and 71 fulfill this statutory obligation.

EO 12866 requires preparation of an RIA for any "significant regulatory action." The Executive Order defines a "significant regulatory action" to be any regulation that may:

- Have an annual effect on the economy of $100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local or tribal governments or communities;
- Create a serious inconsistency or otherwise interfere with an action taken or planned by another agency;
- Materially alter the budgetary impact of entitlements, grants user fees, or loan programs or the rights and obligations of recipients thereof; or
- Raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the Executive Order.

Pursuant to the terms of the Executive Order, the Agency has determined the implementation of a CAM program has the potential to meet the criteria of the first condition. This RIA has been prepared as a result of this determination. Given the relatively small aggregate cost of this regulatory action in the context of the overall size of the domestic economy, the Agency does not believe this regulatory action will appreciably affect the global competitiveness of U.S. industry as a whole.

UMRA requires a qualitative and quantitative assessment of the anticipated costs and benefits of a Federal mandate resulting in annual expenditures of $100 million or more, including the costs and benefits to State, local and tribal governments or the private sector. Also as required by UMRA, this RIA identifies and considers a reasonable number of regulatory alternatives and from those alternatives selects the least costly, most cost effective, and least burdensome alternative that achieves the objectives of part 64.

This analysis also complies with the Regulatory Flexibility Act, which requires agencies to endeavor, consistent with the objectives of the rule and applicable statutes, to fit regulatory and information requirements to the scale of businesses, organizations, and governmental jurisdictions subject to their regulations.

The RIA also addresses the requirements of Executive Order 12898 which stipulates that each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, any disproportionately adverse environmental effects of its programs, policies, and activities on low-income or minority populations.

I(B) ANALYTICAL LIMITATIONS AND CAVEATS

Any analysis contains limitations and simplifying assumptions which add to the level of uncertainty surrounding its conclusions. As the scope of the analysis expands across geographic, temporal, or other bounds, so does the degree of uncertainty. In order to provide as comprehensive an analysis as possible, the Agency made the following assumptions based upon the well reasoned advice and experience of its program analysts and industry experts. While some of these assumptions lead to potential over- or underestimations of costs or benefits, the Agency believes that, in aggregate, the total effect of these simplifying assumptions do not significantly alter the conclusions of this RIA.

I(B)(1) LIMITATIONS IN ANALYTICAL SCOPE

- Sample States for this RIA were selected from the set of States used for the Enhanced Monitoring and Compliance Certification (EMCC) rulemaking, which originally included Colorado, Florida, Indiana and Wisconsin. Connecticut and Utah were added in 1994 to the EMCC analysis to improve the geographic scope of the sample. As the part 64 analysis evolved, it became necessary to develop a separate analysis of pollutant specific emissions units with add-on control equipment. These data were available for all of the sample States except Utah. As a result, Utah was omitted from the analysis and the State selection was reduced from six to five. The Agency selected the six States based on the availability of data. While such a selection process can lead to unintentional biases due to “looking under the streetlights”, the Agency felt that the beneficial aspects of a more complete data set outweighed the detrimental effects of the distortions it might impose. After examining the data set, the Agency has not discovered any systematic bias imposed by the sample.

I(B)(2) LIMITATIONS IN DATA AVAILABILITY

- Although the States in the sample were chosen to maximize the breadth of information available to the analysts, unavoidable limitations still occurred with respect to emission inventories. In all States, the Agency began with its Aerometric Information Retrieval System (AIRS) from July through December 1995 to establish appropriate inventories for this analysis. In two States, however, that information had to be augmented with survey information to complete the data sets. While most of the data needed for this analysis could be derived from either AIRS or the State survey, for Colorado, “Potential Emissions” had to be estimated. The process used for that estimation could lead to under- or over-estimation of emissions. However, the net effect of these errors applies to only a

small subset of Colorado's sources and given the counterbalancing nature of the errors, probably does not significantly alter the analysis.

- Because no State in the sample had an approved source list at the time of this analysis, the Agency employed major source estimations from earlier RIAs as its baseline. This process, while providing analytical consistency with the part 70 Operating Permits Regulation, may impose a bias into the emission analysis of this RIA. The direction and magnitude of that bias cannot be determined.

- The Agency had to estimate NSPS monitoring requirements based upon a weighted distribution of NSPS units from other analyses. While this procedure provided a reasonable estimation of NSPS units, it was unable to differentiate between pollutant types. To sub-divide the set of NSPS units, the Agency assumed the distribution of sources in the rest of the data set was representative of the distribution of NSPS units as well. While facilitating the analysis, the Agency does not know if these assumptions impose a bias on the overall inventory of sources.

- The emission inventory data for each State did not provide adequate information for the Agency to establish the regulatory or in-place monitoring status for sources. Compliance staff from each sample State were asked to identify units not subject to Federally enforceable emission limits or had monitoring systems already in place.

- The Agency did not take into consideration any possible State regulatory changes implemented after reporting to the 1995 AIRS database, or any permanent actions to exempt specific emission units from the CAM rule. The magnitude and direction of these omissions appear to be offsetting, but the net bias cannot be identified in terms of direction or magnitude.

- State databases did not report actual monitoring equipment for sources. Consequently, the Agency associated a likely CAM response category in its analysis to each type of control system. These associations were made for broad categories, without regard for specific requirements of sub-categories which may differ from the response category. The Agency believes that, on the whole, the net effect of these simplifications do not impose a bias on the analysis.

I(B)(3) LIMITATIONS IN CAM ANALYSIS

- EPA assumes as the baseline for its CAM analysis that affected emissions sources are currently in compliance with their underlying emission standards 100 percent of the time. Thus, there are no emissions reductions costs for additional control equipment technology, operation or maintenance, associated with CAM. EPA believes that some sources, in response to monitoring data gathered under CAM, may indeed have to make investments in control equipment technology, operation and maintenance to reduce emissions to comply with their underlying emissions standards; however, EPA believes these emissions

reductions costs are not attributable to CAM — but to the underlying emissions standards. As such EPA has not estimated the costs that may result from such actions to reduce emissions.

- The Agency estimates CEM costs for stand-alone systems and does not anticipate CEMs for VOC, CO or NOx. Furthermore, the Agency did not adjust costs to accommodate any time sharing of a single monitoring system by a number of pollutant points or the monitoring of more than one pollutant type with a singe CEM. These two assumptions produce estimates which may overstate actual burdens and costs, but the Agency does not expect many points will use CEMs, and believes any bias on total costs from these assumptions will be small.

- Typically, the Agency does not incorporate allowances for mistakes, errors, or omissions in source permit applications. Consequently, this analysis assumes a source's proposed monitoring will be prepared, submitted, and approved on time and the first time. The analysis does not include additional costs for further plan review beyond that which is required for initial submission. While § 64.6 allows sources to receive conditional approval of a CAM monitoring approach subject to test verification, this analysis does not consider additional CAM costs that might arise if a proposed monitoring approach is later found to be inadequate for CAM purposes.

- The Agency assumes sources and emission units are the same across the five State sample and across the United States. Therefore, the ratios of data elements found in the sample hold for the nation, as well. This assumption does not carry an identifiable bias in terms of direction or magnitude. Consequently, the Agency does not believe it contributes to any significant error in the analysis.

I(B)(4) LIMITATIONS IN BENEFITS

EPA assumes as the baseline for its CAM analysis that affected emissions sources are currently in compliance with their underlying emission standards 100 percent of the time. Thus, there are no emissions reductions benefits (and health and welfare benefits) associated with CAM. EPA believes that some sources, in response to monitoring data gathered under CAM, may indeed have to reduce emissions to comply with their underlying emissions standards; however, EPA believes these emissions reductions benefits are not attributable to CAM — but to the underlying emissions standards. As such EPA has not estimated the benefits that may result from such actions to reduce emissions.

II STATEMENT OF NEED FOR THE PROPOSED REGULATION

II(A) INTRODUCTION

Congress passed the Clean Air Act to protect the public from the adverse effects of air pollution. This section briefly describes the need for regulation based on monitoring and enforcement requirements established to help ensure sources of pollution adequately perform regulated activities.

II(B) LEGISLATIVE REQUIREMENTS

Title V of the Act directs the Agency to implement monitoring and compliance certification requirements through the operating permits program. Section 503(b)(2) requires at least annual certifications of compliance with permit requirements and prompt reporting of deviations from permit requirements. Section 504(a) mandates that owners or operators [1] submit to the permitting authority (PA) the results of any required monitoring at least every six months. This section also requires permits to include "such other conditions as are necessary to assure compliance with applicable requirements" of the Act. Section 504(b) of the Act also allows the Agency to prescribe by rule, methods and procedures for determining compliance, and states that continuous emission monitoring systems need not be required if other methods or procedures provide sufficiently reliable and timely information for determining compliance. Under section 504(c), each operating permit must "set forth inspection, entry, monitoring, compliance certification, and reporting requirements to assure compliance with the permit terms and conditions."

Title VII of the 1990 Amendments added a new section 114(a)(3) that requires EPA to promulgate rules on enhanced monitoring and compliance certifications. This paragraph provides that the Administrator shall in the case of any person which is the owner or operator of a major stationary source, and may, in the case of any other person, require enhanced monitoring and submission of compliance certifications. Compliance certifications shall include (A) identification of the applicable requirement that is the basis of the certification, (B) the method used for determining the compliance status of the source, (C) the compliance status, (D) whether compliance is continuous or intermittent, and (E) such other facts as the administrator may require.

The 1990 Amendments also revised section 114(a)(1) of the Act to provide additional authority concerning monitoring, reporting, and recordkeeping requirements. As amended, that section provides the Administrator with the authority to require any owner or operator of a source on a one-time, periodic, or continuous basis to:

- establish and maintain records;
- make reports;

---

1 For purposes of this analysis, the term "owners and operators" has been used interchangeably with the terms "firm" and "source". References to actions or responsibilities of sources or firms should be interpreted as referring to the owners and operators of that source or firm.

- install, use, and maintain monitoring equipment;
- sample emissions (in accordance with procedures or methods, at locations, at intervals, during periods and in a manner as the Administrator shall prescribe);
- keep records on control equipment parameters, production variables, or other indirect data when direct monitoring of emissions is impractical;
- submit compliance certifications in accordance with section 114(a)(3); and
- provide such other information as the Administrator may reasonable require.

The EPA has acted to implement the statutory provisions discussed above in two separate ways. First, the part 70 operating permits program includes basic monitoring and compliance certification requirements. Section 70.6(a)(3)(i) requires that permits include all existing monitoring and testing requirements set forth in applicable requirements. In many cases, the monitoring requirements in the underlying regulations will suffice for assessing compliance. However, if particular applicable requirements do not require periodic testing or monitoring, including enhanced monitoring, then §70.6(a)(3)(i)(B) requires the permit to include “periodic monitoring” to fill that gap. Section 70.6(c)(5)(iii) requires the submittal of compliance certifications no less frequently than annually, and generally incorporates the language on compliance certifications included in section 114(a)(3) of the Act. To implement the statutory requirement for enhanced monitoring, the EPA has developed a general monitoring rule in 40 CFR part 64 to be implemented through the part 70 operating permits program.

II(C) REGULATORY SCHEDULE

The final rule establishes two alternative schedules for implementing part 64 depending on the size of the pollutant-specific emissions unit involved. Under the rule, "large" pollutant-specific emissions units are subject to the shortest implementation timetable. "Large" units are those that have the potential to emit (PTE, calculated as emissions to the atmosphere as defined in 40 CFR part 70) an applicable pollutant at or above the major source threshold. If the owner or operator has not submitted the permit application for the applicable source prior to the date 180 days after the Federal Register notice, the owner or operator must submit proposed part 64 monitoring in the next part 70 permit application. If a permit application has been submitted by that date, but the PA has not yet determined that the application is complete, the owner or operator will have to supplement the application with the relevant information required under part 64. If the application has already been found complete, then the part 64 information will generally not have to be submitted until the next permit renewal application.

There are two circumstances where information must be submitted prior to the next permit renewal application. First, if the owner or operator submits a permit modification application after the rule's effective date, the owner or operator must submit the appropriate part 64 information for any pollutant-specific emissions unit(s) covered by the modification application, if the significant permit revision process is required (e.g., a substantive change in the compliance obligation such as addition of a new emissions unit with an applicable requirement) for the requested permit change. This requirement will assure that significant permit revisions affecting particular emissions units are not considered in a piecemeal fashion and that part 64 is implemented as quickly as reasonably practicable. In response to comments on the 1996 draft part

64, the Agency has limited this provision to only the significant permit revisions so that part 64 requirements will not impede permit revisions made under the expedited permit revision processes, such as administrative amendments, notice only changes, or de minimis permit revision procedures that are under consideration by the Agency. Second, if the permit application has been found complete or a permit has been issued, and the source owner proposes to revise the application or the permit to include a change of a type that would have been subject to the significant permit revision process had the permit been issued, then the owner or operator must include part 64 required information for the pollutant-specific emissions unit(s) identified in the application to revise the permit.

Also in response to comments, the final rule does not include a provision in the 1996 part 64 Draft that would have required implementation prior to permit renewal for certain permit applications being processed under a part 70 transition plan for initial permit issuance. The Agency believes that this provision unnecessarily complicates the part 64 implementation process. The Agency also notes that the current part 70 monitoring provisions will continue to apply in the interim if part 64 is not implemented until permit renewal.

For the remaining smaller pollutant-specific emissions units, part 64 implementation is delayed until permit renewal. This approach was suggested in many comments as one way to reduce the implementation burdens of the rule. Such an approach will also allow permitting authorities and source owners and operators to gain experience with implementing part 64 for the largest emissions units before having to address the more numerous, but in terms of overall site emissions, less significant, smaller units. As noted above, permitting authorities can use the delay in implementation to develop programmatic requirements that can be relied on in proposing and approving part 64 monitoring; this approach will be of the most benefit for the smaller emissions units that can use these generic requirements to reduce the burdens of part 64.

The phased-in implementation approach embodied in the final part 64 rule is a departure from the implementation schedule in the 1993 Enhanced Monitoring and Compliance Certification (EMCC) proposal . The effective date of the proposed rule was to be 30 days after publication of the final rule in the Federal Register. The proposed rule did not specify how operating permits issued prior to the rule's effective date would be treated. The preamble to the proposed rule suggested that these situations would be covered by part 70 which requires that an operating permit be reopened to address an applicable requirement which becomes applicable during the permit term if the permit has a remaining term of three or more years. Thus, under the proposed rule, the owner or operator of any facility with an operating permit that had a remaining term of three or more years after the effective date of part 64 would have been required to reopen the permit and provide the required part 64 information.

The Agency considered relying on this part 70 provision to set the implementation schedule for the rule, but chose to adopt the phase-in approach described above. Thus, the provisions in the CAM rule supersede the language of part 70 on this point. The part 70 approach would have required that a great many operating permits be reopened as soon as the rule became effective, while the phase-in approach focuses on new and renewal permit applications. The former is therefore more likely to cause initial burdens and delays in the permitting program. The Agency believes that the extended implementation timetable resulting from the phase-in approach is better suited to facilitating implementation through the operating permits program. In the December 1994 notice reopening the 1993 EMCC proposal for comment, EPA discussed the possibility of using a phase-in implementation approach as well as a "hammer" provision, which

would have required enhanced monitoring to be implemented by all affected sources by January 1, 2000. Multiple commenters expressed concerns that an absolute deadline of this type would cause systemic logjams and delays in the operating permits program because it could require numerous permit revisions or reopenings outside of the normal permit renewal process.

To clarify that the monitoring requirements of part 70 apply irrespective of the part 64 requirements, the Agency has added explicit language to the rule stating that prior to approval and operation of part 64 monitoring, part 70 monitoring requirements apply. These part 70 monitoring requirements continue to apply even after approval and operation of part 64 monitoring; however, because part 64 contains applicable monitoring requirements sufficient to demonstrate compliance with applicable emission limitations or standards, the part 64 monitoring requirements can serve in the place of part 70 monitoring requirements.

III NEEDS AND CONSEQUENCES

This chapter of the Regulatory Impact Analysis summarizes the statutory requirements affecting the development of a Federal operating permit program and describes the nature of the problem. The need for regulatory action and the consequences of the regulation in terms of improving the functioning of the market are also discussed.

III(A) NATURE OF THE PROBLEM

In the absence of government regulation, market-oriented economic systems typically fail to prevent elevated levels of pollution in the environment because individual sources of pollution treat the assimilative capacity of the environment as a "free good" resource to dispose of unused byproduct emissions. Under these conditions, emitters of pollutants and pollutant precursors do not internalize the full social cost of damages created by their own emissions. Pollution damages include increased morbidity and mortality; property damage from soiling, staining, and corrosion; and productive loss due to decreased worker efficiency, crop and livestock damage, and increased wear and tear on capital stocks. While subject to limitations in record keeping and other forms of uncertainty, all of these damages are measurable. In addition, pollution causes other damages which are much harder, if not impossible, to quantify. These damages include habitat loss, diminished biodiversity, reductions in aesthetic quality, option values, and existence values.

The divergence between the private cost of production and the social cost of production occurs because the source does not bear the full cost of its activities (market costs plus external damage costs). The outcome of the cost divergence is market failure, where the level of output is such that marginal social benefits are not equal to marginal social cost. The result is economic inefficiency, or a mis-allocation of society's resources; too much polluting activity (e.g., the release of ozone precursors) occurs in comparison to the optimally efficient situation, thus reducing the potential total benefits to society. While command-and-control regulatory strategies attempt to correct for the divergence between social and private costs, they set prices (emission fees) or quantities (emission caps or limits) once, ignoring the power of the marketplace which, through iterative stages, can drive prices and quantities closer to the social optimum.

In addition to government regulation, other potential mechanisms may be used to correct for the negative externality brought about by air pollution. Negotiations or litigation under tort and common law, in theory, could result in compensation to persons for the damages that they incur. However, two major obstacles block the correction by the private market for pollution-based inefficiencies and inequities. The first obstacle is high transaction costs when many people are affected by many pollution sources, as is typically the case with air pollution problems. Transaction costs of compensating those adversely affected arise and accumulate because the current and future injury to each individual must be appraised, the injury must be apportioned to each source, and damage suits or negotiations must be conducted. In an unregulated market, each source of precursor emissions and each affected person would have to litigate or negotiate. The transaction costs would be so high as to probably exceed the benefits of reduced air emissions. These obstacles suggest the need for another mechanism for solving air pollution problems.

The second obstacle to resolution by the private sector is due to the public good nature of air resource. There is no mechanism to limit anyone’s access to cleaner air, so the benefits of

cleaner air can be enjoyed by individuals whether or not they have paid for them. This is the classic "free rider" problem. Everyone has an incentive not to contribute resources for litigation or negotiation, thinking that he or she would freely benefit from the efforts of others.

Because of the high transaction costs associated with the negotiation and litigation of air quality problems and air quality's "public good" nature, government regulation has often been used to mitigate the negative externalities which would otherwise occur due to the failure of the marketplace. Examples of such government regulation include regulations developed to attain the primary and secondary National Ambient Air Quality Standards (NAAQS). The CAM regulation is being developed to ensure that the air pollution control devices installed and operated by the producers of air pollution are properly operated and maintained so that compliance with existing air quality regulations can be maintained. While regulatory intervention can mitigate the impacts of the types of market failures discussed above, they generally do not occur without imposing their own costs. Typically, these costs include administration, enforcement, and the redistribution of resources at all levels. The purpose of this report is to analyze, identify, and mitigate these regulatory costs.

III(B) CONSIDERATION OF ALTERNATIVE APPROACHES

The Office of Management and Budget (OMB) guidance for Executive Order 12291 lists the range of potential strategies to be considered by a Regulatory Impact Analysis, including no regulation, command-and-control approaches employing performance-based standards, enforcement measures, alternative effective dates of compliance and market-based strategies. This section of the Regulatory Impact Analysis discusses such potential alternatives to the development of a CAM program.

III(B)(1) NO REGULATION

The Act requires EPA to promulgate and administer a program for the monitoring and compliance certification through the operating permits program. Therefore, the "No Regulation" alternative is not acceptable in this RIA.

III(B)(2) ALTERNATIVES TO FEDERAL REGULATION

Some regulatory actions may be implemented through negotiated voluntary actions, State and local mechanisms or judicial means. With respect to CAM, EPA is specifically directed to promulgate enhanced monitoring regulations under section 114(a)(3) of the Clean Air Act Amendments. Therefore, it is not possible to reassign such requirements. However, the Agency has coordinated several public meetings and has consulted with affected parties to better ensure that section 114(a)(3) is implemented in a cost-effective manner from the perspectives of the regulated parties and that the requirements of the Unfunded Mandates Act of 1996 are met.

III(B)(3) ALTERNATIVE EFFECTIVE DATES

This rule includes an effective date of 60 days following the publication in the Federal Register; however, the rule includes a phased-in implementation schedule to distribute the burdens associated with permit review. For affected units which have post-control emissions greater than the major source threshold, [2] CAM's implementation scheme requires source owners submitting new permits applications 180 days or more after the publication date to include monitoring which satisfies the CAM rule. This must be done for all new (first-time) permits and for any permit applications submitted but not considered complete by that date. For sources with complete permit applications 180 days after publication, part 64 monitoring criteria must be specified in a significant permit revision application at the time of its next permit revision, or at the source's permit renewal, whichever occurs first. For all other affected units (e.g., to pre-control emission levels greater than the major source size threshold), CAM requires submittal of monitoring design criteria upon permit renewal. [3]

The Agency developed this implementation schedule, in lieu of requiring immediate implementation for all affected emission units which may include the reopening of existing permits, to help State and local permitting authorities spread out the burden of reviewing permit applications. The justification for the schedule was three-fold: (1) larger units (about 15 to 25 percent of those covered by CAM) represent the most significant actual emissions (about 80 percent of the total emissions from units with control devices); and (2) generally, larger units already monitor, therefore sources and PAs can use their experience to develop effective monitoring strategies; and (3) the experience of large sources can facilitate development of monitoring design criteria for smaller units.

III(B)(4) ECONOMIC INCENTIVE ALTERNATIVES

There are a variety of market and non-market mechanisms available to ensure that sources monitor the operation of air pollution control equipment not inherent to manufacturing or production and operate the equipment to minimize emissions and remain in compliance. Other than regulation, non-market approaches would include negotiations or litigation under tort law and general common law. In theory, these latter approaches might result in payments to individuals to compensate them for the damages they incur.

Typical economic incentive strategies include subsidies, fee systems, marketable permits, and penalties. Title V makes provisions for Federal subsidies through the establishment of small business stationary source technical and environmental assistance programs under section 507. In addition, the Administrator has the option to establish differential permit fees for specific source categories, provided such differential fees do not result in any degradation of the environment and the permitting program is still able to cover its cost of implementation though the fees collected. This differential in permit costs constitutes a subsidy for those source categories.

Fee systems work to reduce the level of emissions from a source by assessing a fee for

---

2 See 40 CFR part 70 for further discussion of major source thresholds.

3 40 CFR part 70 requires all permits to be renewed every five years.

each quantity of pollution emitted into the environment. So long as the cost of reducing its pollution output remains less than the fee assessed for its emission, the rational firm will ignore the fee and allow the pollution to occur. However, according to the law of diminishing returns, variable factors of production increase their costs at a rate greater than the increase in production. Fixed factors of production have costs which vary directly with the level of production. In either case, the firm will eventually reach a point where permitting further pollution would cost the firm more in fees than it would cost to prevent it. Such incentive systems work best on the abatement of pollution, rather than on monitoring and reporting systems.

Marketable permits work to equate marginal private costs with marginal social costs by allowing sources to arbitrage comparative advantages in pollution control. Through marketable permits, a source that can abate at less cost will reduce pollution beyond its own needs and sell its surplus pollution abatement capacity on the market to sources that incurs greater costs for their pollution control. In this manner, the same level of environmental quality may be achieved at a lower cost to sources. Marketable permits are beyond the scope of this economic impact analysis since they require interaction between sources, and monitoring is an inherently independent task.

Market-based regulatory alternatives are difficult to implement within the context of CAM. Because of the need to consider cost and other interrelationships among all units at a source, the type of monitoring predicted for CAM, which is specific to an emission unit and pollutant, would not be appropriate. Instead of adjusting CAM to better fit economic incentive programs, EPA believes that existing requirements for monitoring compliance at sources with incentive programs can be followed.

CAM is not intended to be prescriptive. Each source proposes monitoring, recordkeeping and reporting activities believed sufficient to meet the rule's design criteria and to ensure compliance. No one response or method is considered necessary in all circumstances. This allows sources to propose a monitoring approach that best meets their needs. However, it is still necessary that each pollutant specific emissions unit demonstrate through monitoring that proposed indicator ranges can be maintained and that excursions or exceedances are avoided. In the absence of data supporting compliance, a source may be required to take costly additional steps, such as preparation of a Quality Improvement Plan (QIP), to further demonstrate the appropriateness of any proposed monitoring approach. While not the same thing as a penalty or fine, the Agency believes the risk of QIP works in much the same manner, providing a financial incentive for compliance with CAM.

III(B)(5) INTEGRATED IMPLEMENTATION

The benefits and costs of CAM may be integrated with other environmental regulations. For example, an NSPS regulation promulgated after November 15, 1990 will be required to include monitoring specifications as well as recordkeeping and reporting requirements, sufficient to satisfy part 70 language. These requirements are most properly viewed as requirements which directly affect the benefits and costs of the underlying regulation. They are not requirements specific to either CAM or part 70. On a related concern, the final rule will allow states to implement CAM through rulemaking pertaining to categories of sources. The EPA encourages States to consider adding monitoring requirements to existing and new rules that are consistent with part 64 requirements. In this manner, the burdens associated with source-specific monitoring

development could be reduced. To provide an incentive for this type of rule, the final rule includes a provision (see § 64.5(a)) that allows the owner or operator to rely upon this type of programmatic rule as the primary documentation of the appropriateness of its monitoring. This approach would reduce the number of case-by-case reviews necessary to implement part 64.

III(B)(6) ALTERNATIVES WITHIN THE SCOPE OF LEGISLATIVE DIRECTION

There are three broad categories of alternatives which fall within this group:

- the degree (stringency) of control of emissions;
- the timeline for compliance; and
- approaches for ensuring compliance in a timely manner.

CAM develops alternatives within the last of these categories. CAM provides information on a timely basis so that sources of pollution can better maintain compliance with underlying emissions limitations or standards.

EPA has examined a variety of approaches for reaching the compliance goals of the set of existing regulations. These approaches include:

- Enhanced Monitoring and Compliance Certification,
- Compliance Assurance Monitoring (as defined in September 1995),
- Compliance Assurance Monitoring (as defined in August 1996), and
- Compliance Assurance Monitoring (as defined in July 1997).

III(B)(6)(a) ENHANCED MONITORING AND COMPLIANCE CERTIFICATION

The Agency proposed the EMCC rule in 1993 (58FR 54648, October 22, 1993) which placed the burden on regulated sources to monitor pollution control performance and to record that performance in a way which would allow permitting authorities to assess compliance with existing emissions limitations and standards with a high degree of certainty. The proposal also required prompt reporting of deviations to permitting authorities to ensure timely corrective action and a reduction in the duration of non-compliance.

Implementation of EMCC stressed adoption of monitoring methods that could demonstrate a statistical correlation with actual emissions so that compliance with emissions limitations or standards could be more clearly assessed. The statistical correlation of emissions and monitoring was to be established in performance verification tests and included as part of an enhanced monitoring protocol submission. The linkage to emissions resulted in an expectation that many emission units would install and operate continuous emission or opacity monitors to meet monitoring requirements.

EMCC also included “certification of compliance,” where self-monitored data would be used as a basis of certification by an owner that the source was being operated in compliance with emissions limitations or standards on a continuous or intermittent basis. This was intended to provide the appropriate incentive for sources to come into compliance in a timely manner and

thereby avoid possible penalties associated with violations. Applicability of the EMCC proposal covered regulated emission units with a PTE greater than or equal to 30 percent of the pollutant's applicable major source definition.[4] This rule design was one of five levels of stringency considered. No alternative implementation schedules were analyzed. Although relatively large emission units, including all major emission units, would have been affected by the proposed EMCC requirements, not all major sources would have been affected. Those sources subject to title V requirements but not subject to EMCC were presumed to be subject to periodic monitoring.

Stakeholders representing almost all domains objected to the approach prescribed by the EMCC rule. The objections focused mostly on the high cost and resource burden associated with implementation. The industry sector voiced concerns about the cost of installing and operating continuous emission monitoring systems or the cost of developing high precision correlations between operating parameters and emissions. The industry also objected to the broad applicability of the rule which required emission monitoring on emission units without control devices in exchange for little environmental benefit. State and local agencies objected to the burden imposed on permitting authorities to review and approve case-by-case monitoring submittals and assuring the accuracy of statistically derived parameter correlations.

III(B)(6)(b) COMPLIANCE ASSURANCE MONITORING (September 1995)

In response to public comments on the proposed EMCC rule, the Agency held a series of stakeholder meetings during 1994 and early 1995. In September 1995 the Agency drafted a new preamble and rule (1995 part 64 Draft) and made these documents available for public comment. This revised package was the first attempt by the Agency to define Compliance Assurance Monitoring. CAM requires monitoring, recordkeeping and reporting to ensure that controls in place are properly operated and maintained so that compliance with emissions limitations or standards can be assured. In addition, in cases where non-compliance is a problem, CAM provides incentives for a timely correction.

CAM, like EM, places the burden on sources to self-monitor and report on compliance. The general presumption of CAM, however, is that the tools to achieve compliance are present in the controls and thus focuses monitoring on the operation of control technology.

The September 1995 part 64 Draft rule defined a three-tier system to determine rule applicability. Tier 1 units were defined to be part 60 or 61 units in operation prior to November 15, 1990 for which monitoring was required; major (based on the part 70 definition) pollutant specific emissions units subject to an applicable requirement and with existing monitoring; and selected "NSPS-like" units. Tier 2 units included other major pollutant specific emissions units and other monitored units. Tier 3 units represented the residual of part 70 units that were neither Tier 1 or Tier 2 units. For Tier 3 units, recordkeeping would be sufficient to satisfy part 64 requirements. Periodic monitoring was subsumed within CAM applicability.

Stakeholders objected to the rule's confusing applicability scheme involving the three tiers, stating difficulty in distinguishing the level of monitoring required for each tier. Industry

---

4 In general, the definition of major is tied to annual emissions greater than 100 tons per year of a pollutant. However, lower thresholds apply in some nonattainment areas.

stakeholders also objected to some enforcement related aspects of the rule. Industry and permitting authorities objected to the case-by-case reviews required especially for determining the applicability tier for each emission unit. Environmental groups and some State and local agency groups objected to the move away from direct emissions measurements. Industry and State and local agency stakeholders requested clearer descriptions of monitoring that would apply to units with and without control devices. Some stakeholders proposed a programmatic approach to implementing the rule that would allow permitting authorities to develop source category-specific monitoring through rulemaking in order to reduce resource needs for permit review.

III(B)(6)(c) COMPLIANCE ASSURANCE MONITORING (August 1996)

The August 1996 part 64 Draft rule retained many of the features of the draft released in September 1995. The design philosophy continued to be that the tools to achieve compliance are present in the controls used to reduce emissions. The August 1996 draft provided information to sources about the performance of control equipment and created incentives for firms to take corrective actions in a timely fashion. This was accomplished through monitoring of control performance via indicators that provided reasonable assurance that emission limitations or standards would be met. Furthermore, recordkeeping and reporting requirements served as vehicles for the identification of periods of non-compliance and the actions taken to bring control equipment back to expected operating conditions. Repeated episodes of non-compliance could trigger implementation of a QIP by the source. The 1996 part 64 Draft also retained close ties to the operating permits program, with CAM implementation provided through the part 70 permit application process, addressing enhanced and periodic monitoring components of part 70.

Changes in the 1996 part 64 Draft rule included tighter provisions for review and revisions to CAM-related elements of permits. These actions tied CAM more closely to part 70 permit provisions. The August 1996 draft also changed applicability conditions which led to all major sources being subject to CAM and placed most new monitoring burden on units with add-on controls - i.e., those emission units most likely to have compliance problems.

The 1996 part 64 Draft described applicability in terms of subpart B and subpart C emission units. Subpart B emission units that (a) rely on control devices to meet an emission limit or standard, and (b) have pre-control emissions of at least 100 percent of the major source threshold. Under the proposed draft rule, sources with subpart B units would submit CAM plans to permitting authorities which described indicators to be monitored, data availability, and the obligation to perform corrective actions, as needed.

All other emissions units were classified as subpart C. Sources with subpart C units did not need to submit a CAM plan. Existing monitoring, including recordkeeping, was generally considered sufficient to satisfy CAM requirements for subpart C units with PTE greater than 100 percent of the amount needed for the source to be major.

Most stakeholders approved of this iteration's clarifications for applicability; although, some industry stakeholders objected to the lower size cut-off being based on pre-control (i.e., uncontrolled) emissions. Industry and some State and local agency stakeholders objected to the enforcement aspects associated with parts of the rule. Some permitting authorities expressed concerns about case-by-case reviews for small emissions units for which new monitoring would have to be developed. Environmental groups and some PA groups objected to the diminished

reliance on precise correlations with emissions. Stakeholders objected to the breadth of the subpart C applicability and the potential disruption to ongoing part 70 periodic monitoring programs.

III(B)(6)(d) COMPLIANCE ASSURANCE MONITORING (July 1997)

This July 1997 draft rule provides additional focus to the applicability conditions of CAM. First, this draft rule applies to only emissions units which (a) use an add-on control device to meet an emission limitation or standard and (b) are located at a major source and subject to title V requirements. The threshold for applicability requires that the unit have annual precontrolled emissions greater than 100 percent of the emissions needed for the unit to be major, as defined in part 70. These units match the subpart B units defined for the 1996 part 64 Draft rule.

The primary difference between the 1996 and 1997 drafts rules is that the 1997 version does not include units identified as subpart C in the 1996 version. The Agency anticipates part 70 periodic monitoring will fill monitoring gaps for uncontrolled units which are subject to applicable Federal requirements and do not have adequate monitoring.

Several other changes directly affect this RIA. First, 1997 part 64 draft rule describes two classes of affected units:

- Large units with (controlled) PTE greater than 100 percent of the level needed to classify the unit as major, as defined in part 70; and
- Other units affected by the 1997 part 64 Draft rule.

The 1997 draft requires large units to propose monitoring design criteria as part of an initial operating permit application, as part of an operating permit revision, or as part of an operating permit renewal. “Other” units have delayed implementation, with monitoring design criteria for part 64 not required until the source renews its part 70 permit.

The July 1997 part 64 draft rule also specifies monitoring frequency requirements in greater detail than its earlier iterations. Large units will generally need to conduct monitoring such that readings are collected every 15 minutes. Other units may propose a daily monitoring frequency with supplemental monitoring on a monthly or quarterly basis to better assure compliance.

The remainder of this document describes the costs and benefits of the 1997 part 64 Draft rule. The cost chapter (Chapter IV) provides a comparison of the various regulatory alternatives in terms of costs and affected emission units. Additional detail on the Enhanced Monitoring rule can be found in the RIA prepared for that proposed rule.