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PART VI

ENVIRONMENTAL PROTECTION AGENCY

NEW WHEEL AND CRAWLER TRACTORS

Noise Emission Standards for Construction Equipment

ENVIRONMENTAL PROTECTION AGENCY

[40 CFR Part 204]

[FRL 701-6]

NOISE EMISSION STANDARDS FOR CONSTRUCTION EQUIPMENT

New Wheel and Crawler Tractors

AGENCY: Environmental Protection Agency.

ACTION: Proposed rulemaking.

SUMMARY: This notice proposes noise emission standards for wheel and crawler type tractors manufactured primarily for construction applications. This action is being taken under the authority of the Noise Control Act of 1972. Compliance with the proposed standards should, on the average, reduce noise from wheel and crawler tractors by 5 dBA. In terms of reduced impact on the Nation's population, the 5 dBA reduction, when considered in combination with existing Federal standards for new portable air compressors and medium and heavy trucks, should result in a reduction of approximately 37 percent in the severity and extensiveness of construction site noise impact by the year 1991. This represents an increase of approximately 10 percent in additional benefits over those anticipated to accrue from the existing Federal noise regulations of portable air compressors and medium and heavy trucks used at construction sites.

DATES: The official docket (Docket Number ONAC 77-2) for the proposed Wheel and Crawler Tractor noise emission regulation will remain open for the submittal of comments until 4:30 p.m. September 30, 1977. At that time, all materials submitted for the record, including transcripts of all public hearings, will become part of the official record. Public hearings will be held on August 30, 1977, commencing at 9:00 a.m. in the Benjamin Franklin Hotel, 9th and Chestnut Streets, Philadelphia, Pennsylvania 19105, and on September 1, 1977, commencing at 9:00 a.m., in the Ambassador Hotel, 3400 Wilshire Blvd., Los Angeles, California 90010.

ADDRESS: Persons wishing to submit comments should write to the following address:

Director, Standards and Regulations Division (AW-471), Office of Noise Abatement and Control, Attn: Wheel and Crawler Tractor Docket Number 77-2, U.S. Environmental Protection Agency, Washington, D.C. 20460.

All comments received, which are not identified as company proprietary in nature, will be open for public inspection during normal business hours at the U.S. Environmental Protection Agency, Public Information Reference Unit, Room 2922, 401 M Street SW., Washington, D.C. 20460.

FOR FURTHER INFORMATION CONTACT:

Ms. Ellen Robinson, Public Information Specialist, U.S. Environmental Protection Agency, Office of Public Affairs (A-107), 401 M Street S.W., Washington, D.C. 20460, 202-755-0704.

SUPPLEMENTARY INFORMATION: See following text.

1.0 Introduction

Through the Noise Control Act of 1972, Pub. L. 92-574, 86 Stat. 1234 et seq., Congress established a national policy "to promote an environment for all Americans free from noise that jeopardizes their health and welfare." In pursuit of that policy, Congress stated, in section 2 of the Act, "that, while primary responsibility of control of noise rests with State and local governments, Federal action is essential to deal with major noise sources in commerce, control of which requires national uniformity of treatment."

As part of this Federal action, section 5(b)(1) of the Act requires the Administrator, after consultation with appropriate Federal agencies, to publish a report or series of reports "identifying products (or classes of products) which, in his judgment, are major sources of noise." The Administrator published in the FEDERAL REGISTER (40 FR 23105, May 28, 1975) a report which identified "wheel and track loaders and wheel and track dozers" as major sources of noise.

Section 6(a) of the Act requires the Administrator to publish proposed regulations for each product which is identified or which is part of a product class identified as a major source of noise, where in his judgment noise standards are feasible. Such regulations are to include standards that set limits on the noise emission from new products which are requisite for the protection of public health and welfare with an adequate margin of safety, taking into account the magnitude and conditions of use of such products (alone or in combination with other noise sources), the degree of noise reduction achievable through the application of the best technology available and the cost of compliance.

Section 6(d)(1) of the Act specifies that the manufacturer of each new product shall warrant to the ultimate purchaser and each subsequent purchaser that the product is designed, built and equipped so as to conform at the time of sale to the regulation.

Under section 6(e)(1), no State and political subdivision thereof may adopt or enforce any law or regulation which sets a limit on noise emissions from new products regulated by EPA, unless such law is identical to the applicable EPA regulation. The requirement to be "identical" applies to the standard and those elements of the measurement methodology which define the standard; these must be identical to those in the EPA regulation. However, other elements of the State and local law need not be identical. Such elements include the list of persons subject to the regulation, sanctions, enforcement procedures and correlatable or equivalent "short test" used for enforcement purposes.

Section 6(e)(2) of the Act specifies that nothing in section 6 shall preclude or deny the right of any State or political subdivision thereof to establish and enforce controls on environmental noise and sources thereof through the licensing, regulation, or restriction of the use, operation, or movement of any product or combination of products. Such controls which are reserved to State and local authority under this section include, but are not limited to, the following:

(1) Controls on the time of day during which products may be operated.

(2) Controls on the places or zones in which products may be used.

(3) Controls on the noise emission level of products during use and operation that are enforceable against the consumer.

(4) Controls on the number of products which may be operated at the same time.

(5) Controls on noise emission levels from the properties on which products are used.

(6) Controls on the licensing of products.

(7) Controls on the manner of operation of products.

State and local time-of-sale noise emission regulations applicable to products which are not covered by Federal regulation are in no way preempted by these regulations.

Section 10 of the Act establishes prohibited acts in relation to products for which section 6 regulations are applicable. Distribution in commerce of any new product manufactured after the effective date of regulations under section 6 is prohibited unless it is in conformity with such regulations. Removal or rendering inoperative of any device or element of design incorporated into any product in compliance with section 6 regulations other than for purposes of maintenance, repair, or replacement, prior to its sale or delivery to the ultimate purchaser or while it is in use is prohibited. The use of a product which has been tampered with is also prohibited.

Section 11 of the Act specifies enforcement penalties for violation of any prohibited act under section 10. Such penalties for first violations include a fine of not more than $25,000 per day of violation, or imprisonment for not more than one year or both for knowing or willful violations. The penalties double for subsequent violation.

Section 13 of the Act provides the authority for the Administrator to require a manufacturer to establish and maintain records, make such reports, and provide such information as is necessary for him to determine compliance.

Section 15 of the Noise Control Act establishes a process by which the Federal Government will give preference in

its purchasing to products whose noise emissions are significantly below those required by the Federal noise emission standards promulgated pursuant to Section 6 of the Act. Accordingly, the EPA has published procedures for Certification of Low-Noise-Emission Products (LNEP) (40 CFR Part 203).

For wheel and crawler tractors the specific noise emission level criteria required for LNEP determination are contained in § 204.102(d) of the proposed regulation.

Section 16(d) grants the Administrator the authority to issue subpoenas for the attendance and testimony of witnesses and the production of relevant papers, books, and documents to assist him in obtaining information to carry out the purposes of the Act.

2.0 The Proposed Regulation

The proposed noise emission standards and effective dates, presented in Table 1, apply to wheel loaders, crawler tractors and wheel tractors while operating at maximum governed speed (high idle) with the vehicle at rest. A-weighted sound pressure levels are to be measured at an "on axis" distance of 15 meters from the front, rear and sides of the machine. The standard noise measurements procedure is presented in detail in § 204.104 of subpart C.

The Agency believes that the estimated health and welfare benefits from this proposed noise emission standard can be attained only if wheel and crawler tractors meet the not-to-exceed levels in Table 1 for a reasonable in-use period. At a minimum it means the standard must be met for an initial period of time and/or use, beginning on the date of the product's delivery to the ultimate purchaser. This period is described by the Agency as the Acoustical Assurance Period (AAP). It is defined as that period during which the product must meet the standard when the product is properly used and maintained. In the case of wheel and crawler tractors the Acoustical Assurance Period is 5-years or 9000 operating hours, whichever occurs first.

A manufacturer may stipulate, under § 204.106–4 of subpart C, an anticipated increase in the noise level of his product(s) during the AAP. A manufacturer must take this anticipated increase in noise level, expressed in terms of a Sound Level Degradation Factor (SLDF), into account when performing tests to show compliance with the applicable standard. That is, where an SLDF is anticipated, a manufacturer must show that his product meets a level defined by the applicable standard of Table 1 minus the SLDF value.

The Administrator has determined that the proposed standards are feasible and represent those levels of noise requisite to the protection of the public health and welfare, taking into account the degree of noise reduction achievable by application of the best available technology and the cost of compliance as required by section 6 of the Act.

TABLE 1.—*Proposed regulatory noise emission standards*

Machine type	Horsepower	Not to exceed A-weighted Sound pressure level (dBA)	Effective date
Crawler tractors	20 to 199	77	Mar. 1, 1981
Do.	200 to 450	74	Mar. 1, 1984
		83	Mar. 1, 1981
		80	Mar. 1, 1984
Wheel loader	20 to 249	79	Mar. 1, 1981
		76	Mar. 1, 1984
Do.	250 to 500	84	Mar. 1, 1981
		80	Mar. 1, 1984
Wheel tractor	20+	74	Mar. 1, 1981

EPA is unaware at this time of any manufacturer who would be unable to comply with the proposed standards by the specified effective dates. The Agency solicits submittal of such data or information during the public comment period that substantiates or refutes this view.

The proposed regulation incorporates an enforcement program which includes production verification, selective enforcement auditing procedures, warranty, maintenance, compliance labeling, and anti-tampering provisions.

3.0 Background Information

3.1 *General:* The proposed regulation is the third in a series of regulations affecting construction site equipment noise. In arriving at the proposed regulation, the Agency carried out detailed investigations of wheel and crawler tractor design; manufacturing and assembly processes; available noise control technology; noise measurement methodologies; costs attendant to noise control methods; the cost to test machines for compliance; the cost of recordkeeping; possible economic impacts; and the potential environmental and health and welfare benefits associated with the application of various noise control measures. The information summarized briefly herein is presented in detail in the "Environmental Impact Statement, Economic Impact Statement and Background Document for Noise Emission Standards for Wheel and Crawler Tractors" referred to hereafter as the "Background Document."

To meet the requirements of the Act, to consider "the best available technology, taking into account the cost of compliance," the Agency constructed definitions of the terms "best available technology" and "cost of compliance." In doing so, the Agency carefully considered the strict language of the Act, its legislative history, and other relevant data. Based thereon, the following definitions have been established by the Administrator for the purposes of this regulation.

3.1.1 "Best available technology": EPA considers the level "achievable through the application of the best available technology" to be the lowest noise level which can be reliably predicted based on engineering analysis of products subject to the standard that manufacturers will be able to meet by the effective date, through application of currently known noise attenuation techniques and materials. In order to assess what can be achieved, EPA has (1) identified the sources of tractor noise and the levels to which each of these sources can be reduced, using currently known techniques; (2) determined the level of overall tractor noise that will result; (3) assured that all such techniques may be applied to the general tractor population; (4) assured that all such techniques are adaptable to production line assembly; and (5) assured that sufficient time is allowed for the design and application of this technology by the effective dates of the standards.

3.1.2 "Cost of compliance" is defined as the cost of identifying what action must be taken to meet the specified noise emission level, the cost of taking that action, any additional cost of operation and maintenance caused by that action, and costs of noise testing and recordkeeping required by the regulation.

3.1.3 To determine what constitutes the best available technology and the cost of compliance, the Agency amassed information from a range of sources including: (1) Studies performed by Agency personnel; (2) studies performed under contract to the Agency; (3) submissions by other Federal agencies; (4) submissions by industry; and (5) data in the available literature.

Representatives of the Agency carried out extensive interviews with key members of firms in the construction tractor industry to gain first-hand knowledge of the industry and its products and to obtain and verify technological and financial information. Similar interviews were conducted with key persons in construction, mining, forestry and agricultural trade associations.

3.2 *Product Definition:* Early in the study of wheel and track loaders and wheel and track dozers, it became clear that industry terminology identifies the "dozer" as an attachment mounted on a self-propelled tractor and a "loader" as a complete self-propelled machine with a bucket and attendant lifting apparatus. Accordingly, the Agency has adopted the general term "wheel and crawler tractors" to define the products addressed by this proposed regulation which are primarily used in construction activities to perform loading or dozing operations.

The Agency recognizes that there exist a multiplicity of different types of equipment that meet the above product definition. It has also been determined that some types of this equipment, by reasons such as negligible noise impact on people due to limited use in urban area construction, might not be candidates for regulation at this time. Accordingly, the Agency established the following procedure for determining the candidacy of a

given wheel or crawler tractor for regulation:

(1) Determine those machines which perform dozing and/or loading operations;

(2) Determine those machines used primarily for construction related activities;

(3) Determine those machines which are used primarily in other industries and are unlikely to be substituted for construction related machinery.

The Agency determined that regulation of the following machine types is requisite to protect the public health or welfare pursuant to the 5(b)(1) identification:

1. *Crawler tractor.* Tractor which moves on tracks with or without dozer blades, loader buckets or other attachments.

2. *Wheel loader.* Tractor with articulated steering and integral bucket attachment.

3. *Wheel tractor.* Tractor with rigid frame which may have an integral or non-integral loader bucket or other non-integral attachments.

Details regarding the identification of these machines as candidates for regulation, their design features and functional characteristics, are contained in the "Background Document".

Machines excluded from this regulation because they have minimal impact on public health and welfare or are not primarily used for loading and dozing operations in construction activity or are the object of further study include:

1. Wheel loaders with integral backhoe.

2. Wheel tractor with integral dozer blade linkage.

3. Skid steer loaders.

4. Wheel and crawler tractors with attachments—other than bucket or blade apparatus—integral to the machine frame.

5. Machines manufactured primarily for agricultural, mining, or logging operations.

6. Trenching equipment—self-propelled machines used exclusively to produce a continuous trench by means of a digging chain or similar device.

3.3 *Technology.* Noise level data for wheel and crawler tractors were collected by EPA from three sources: (1) Submittals from manufacturers, (2) field measurements at a construction site, and (3) an EPA sponsored testing program with the U.S. Army Mobility Equipment Research and Development Command (MERDC), Fort Belvoir, Virginia.

Several manufacturers supplied data on nearly 300 machines, encompassing more than 100 different models. The median noise levels, based on the arithmetic average of the high idle levels measured at orthogonal positions 50 feet (approximately 15 meters) from the sides of the machines, were found to be: (1) Crawler tractors with engine power between 20 and 100 horsepower—80 dBA, (2) crawler tractors with engine power between 200 and 450 horsepower—84 dBA, (3) wheel loaders with engine power between 20 and 249 horsepower—81.5 dBA, (4) wheel loaders with engine power between 250 and 500 horsepower—84.0 dBA, and (5) wheel tractors with engine power 20.0 horsepower or greater—77.0 dBA. The data shows high correlation between noise level and horsepower; that is, the more powerful the machine the greater its noise output.

Diagnostic investigations show that tractor noise consists of the superposition of noise radiated by the (1) engine cooling fan, (2) engine casing, (3) engine exhaust, (4) engine air intake, (5) transmission system, (6) hydraulic system, and (7) track (for crawler vehicles). Of these sources, noise radiated by the cooling fan, engine casing, and engine exhaust are the most dominant and therefore require first attention in schemes to quiet the wheel and/or crawler tractor.

Some machine design changes may be necessary to control the fan and/or engine noise. Improved fan shrouds, increased radiator-to-fan and fan-to-engine clearances, and the use of an airfoil type fan configuration, may reduce fan noise by as much as 8 to 10 dBA. Engine casing noise might be reduced by 5 to 6 dBA through the application of acoustically absorbent material to the interior surfaces of the engine compartment. Substantial reductions of engine exhaust noise can be accomplished by the use of improved mufflers; current estimates indicate reductions of between 7 and 10 dBA. When these potential component noise reductions are translated into an overall reduced wheel or crawler tractor noise level, it is estimated that an average reduction of 5 dBA for all types of tractors can be achieved by application of best available technology.

3.4 *Measurement Methodology.* The Agency's noise program endeavors to utilize such measurement standards, particularly those of voluntary standard setting organizations, as may have been developed, validated and in common use today. The Agency recognizes that such voluntary standards have normally been developed for non-regulatory purposes. Consequently, certain modifications of the existing measurement standards are often necessary to meet the Agency's regulatory requirements. In the instant case of wheel and crawler tractors, the Agency has adopted as its measurement methodology, a modification of the Society of Automotive Engineers' (SAE) J88a method, currently employed by many tractor manufacturers. EPA's modification eliminates both component cycling tests and pass-by tests, thereby permitting smaller test sites and significant reductions in the time required to assess a machine's noise characteristics. In modifying the SAE procedure, the Agency has endeavored to arrive at a simple, low cost test method that will provide the accurate data requisite to product verification at a manufacturer's plant as well as compliance in the field.

The Agency, however, fully recognizes that situations may arise or exist where other measurement methodologies are more appropriate to employ and may approve applications for the use of test procedures which differ from those contained in the regulation so long as the alternate procedures have been demonstrated to correlate with the prescribed procedure.

EPA analysis of data supplied by manufacturers as well as data obtained from tests at construction sites and at Fort Belvoir, Virginia, shows that wheel and crawler tractor noise is not highly directive in the horizontal plane. The noise levels measured in a vertically overhead position were found to average 3.7dBA below those measured in the horizontal plane. It was further determined that the arithmetic average, rather than an energy or logarithmic average, of the four horizontal machine noise levels is most representative of the noise level produced by the machine during a normal operational duty cycle. Inclusion of, noise levels measured overhead would reduce the overall arithmetic average noise level of each machine.

Since it is currently general industry practice to direct the exhaust of wheel and crawler tractors vertically upward for both safety and operational purposes, the Agency concluded that the overhead noise levels measured were representative of exhaust noise and no immediate benefits would be gained by manufacturers through the redirection of exhaust. Furthermore, the Agency concluded that the redirection of other machine noise emissions to a vertically upward direction would require major machine redesign. The economics of instituting these major alterations are currently considered a deterrent to such action. Consequently, in the interest of minimizing test time, complexity and cost, the Agency is not proposing an overhead noise level measurement at this time.

These test data also established that reductions in the stationary high idle noise level resulted in a corresponding decrease in moving-mode machine noise levels as determined from SAE J88a test analyses. Hence the proposed standards are based on "stationary mode" noise emission levels.

An important element to the continued effectiveness of these proposed noise-emission standards is the "in-use" enforcement by State and local officials. Commensurate with this requirement is an in-situ field test method that is correlatable or equivalent to the EPA standard test procedure. The Agency believes the the proposed standard measurement method for manufacturer compliance testing is equally suitable for in-use testing of wheel and crawler tractors. Comments relating to in-use test procedures are particularly solicited by the Agency.

4.0 Rationale for Standard Selection

In arriving at the proposed standards, the Agency constructed a classification scheme that allows differentiation in the usage of the many different machines that meet the "wheel and crawler tractor" definition vis-a-vis population distribution around construction sites. The Agency's studies show that machines of

lower horsepower (less than 250 horsepower), are used in heavily populated urban areas while the larger machines, because of their size, are not normally used in these area of high population. Furthermore, machines in excess of 500 horsepower are of such size as to essentially preclude their transport to and use in areas where significant population impact would result. Thus, by using narrow horsepower ranges for classification purposes, the Agency was able to clarify relationships among machine usage, population impact, noise levels, production costs, and quieting technologies.

Studies were conducted to determine the specific contributions of wheel and crawler tractors to (1) the total construction site noise signature; (2) the four categories of construction (residential, commercial, industrial, public works); and (3) the five phases of construction (clearing, excavating, erection, finishing, clean-up).

The Agency then examined the health and welfare benefits that would accrue if wheel and crawler tractor noise levels were reduced to three selected study levels corresponding to (1) the approximate current average sound levels for each class of machine, (2) the levels achievable with "off the shelf" noise abatement procedures, and (3) the levels that the Agency believes attainable through the application of "best available technology."

In its determination of the population impacted by noise, the Agency has adopted a noise impact method which accounts for varying degrees of personal impact. The benefits attendant to the study levels were assessed in terms of both extensiveness (i.e., the number of people impacted) and the intensiveness (severity) of construction site noise impact. Analyses were also performed to determine the total potential benefits from the regulation of wheel and crawler tractor noise in combination with portable air compressors and medium and heavy trucks, equipment which is already subject to Federal noise emission standards.

Estimates of the costs to quiet this equipment were developed on an engineering cost basis, assuming that incremental reductions from present day average noise levels could be applied to each class of equipment.

The Agency also examined the potential economic impact that may result from imposition of the various levels of noise reduction technology in different time frames. The Agency concluded that an incremental, rather than single step reduction in the noise levels of this equipment, would yield substantial near term benefits and minimum industry dislocations. The selection of lead times for both large and small equipments was based on the possibility of manufacturer changes in horsepower ratings for those equipments around the category breakpoints of 200 and 250 horsepower. Consideration was also given to possible economic impacts on the smaller manufacturers. Thus, to minimize market impacts from possible substitution of unregulated machines for regulated machines during the time frames for these proposed regulations, and to discourage shifting horsepower ratings, the Agency concluded that identical effective dates for all regulated equipments were appropriate.

The Agency believes that the attainment of the estimated health and welfare benefits from reduction in the noise levels of wheel and crawler tractors is dependent on the continued compliance of these products with the Federal not-to-exceed noise emission standard, during actual use. Accordingly, the Agency's implementation of an Acoustical Assurance Period (AAP), as defined in section 2, requires that a product be built so that if it is properly used and maintained it will not exceed the noise level of the standard. This places a burden on several parties. First, it requires the manufacturer to build the product so that it is capable of performing at or below the requisite noise level over the prescribed AAP, and second it depends on the owner/user to maintain and use the product in a manner that will not cause the product's noise level to exceed the standard. (The responsibility of the owner/user is, to the extent covered, discussed in other portions of this preamble; see discussion of anti-tampering infra.)

The Agency considers the concept of an Acoustical Assurance Period necessary because if the product is not built such that it is even minimally capable of meeting the standard while in use over this initial period when properly used and maintained, the standard itself becomes a nullity and the anticipated health and welfare benefits become illusory.

The Agency considers the concept reasonable because in the information which is available to it, it finds that the noise levels of wheel and crawler tractors do not increase appreciably over the initial 5-years or 9000 operating hours when the product is properly used and maintained. Furthermore, it finds that the capability of designing these products to assure minimal degradation in the noise control features is within the technological capability of the manufacturer and was considered within the technology, maintenance and cost assessments attendant to the standards proposed in this regulation.

In making the determination that the Acoustical Assurance Period for wheel and crawler tractors should be 5-years, or 9000 operating hours, EPA took into account the magnitude and conditions of use of these products, the best maintenance attendant to noise control, and the cost of compliance. Among specific factors considered were:

1. The likelihood that acoustical degradation of noise control features and the resultant increase in noise level above the standard, would not occur during the Acoustical Assurance Period if the manufacturer used proper design and fabrication, quality materials and workmanship;

2. The low maintenance normally required on wheel and crawler tractors during their early years of use;

3. The relative usage cycles of these products during their early years of use.

It is important to understand what AAP means to the manufacturer. The manufacturer will be held responsible for producing a product that is capable of meeting the standard. He can design and build the product at the level of the standard assuming no degradation of noise control features in time, or build it with noise levels somewhat below the standard to account for some degradation with time. But in neither event can the product exceed the standard during the Acoustical Assurance Period.

EPA is also proposing a procedure whereby the manufacturer may account for sound level degradation in his compliance testing and verification program by applying a Sound Level Degradation Factor (SLDF) to the noise emission standard. This may result in a manufacturer-specific production test level which is lower than that specified by the standard. For example, if a manufacturer estimates that the noise level of his product may increase 3 dBA during the AAP the SLDF would be 3dBA. Then, for production verification, the manufacturer would have to test his product at a level which is 3 dBA lower than that specified by the standard. If a product is not expected to degrade during the AAP, the SLDF will be zero. It is EPA's evaluation that in most cases the SLDF would be near or equal to zero.

Manufacturers would be subject to federal enforcement actions consistent with section 11 of the Noise Control Act, if the noise emission level during the AAP exceeds the noise emission standard. It should be clearly understood that this concept does not impose any additional burden on the manufacturer for proper maintenance and use. That is, if the product is not properly maintained and used the manufacturer is relieved of subsequent resulting liability. The responsibility of properly maintaining and using the product rests with the owner/user.

EPA invites comments on the approach it has taken to attain the health and welfare benefits requisite to this regulatory action; EPA also solicits comments on the length of the AAP together with the rationale and data to support the position taken.

5.0 Estimated Impact of Proposed Regulations

5.1 *Health and Welfare.* It is estimated that in excess of 30 million persons are exposed yearly to construction related noise that jeopardizes their health or welfare. Compliance with the proposed standards for wheel and crawler tractors, in combination with existing noise standards for new portable air compressors and medium and heavy trucks, will result in benefits to the population exposed of an approximate 27 percent reduction in the severity and extensiveness of construction site noise im-

pact by the year 1991; this assumes 100 percent turnover of regulated equipment.

5.2. *Cost and Economic Impact.* Estimates of the costs to quiet wheel and crawler tractors may be expressed in terms of increased list price. The Agency's studies indicate that average list price increases will range from 2.3 to 7.2 percent, dependent on machine type and size, resulting in an average list price increase of 4.6 percent for all regulated machines. There are indications that several small firms in the industry, by virtue of their small market share and other operational difficulties, could incur higher manufacturing costs which may result in slightly higher list price increases. The Agency will continue to study these potential impacts because it is desirable to achieve the public health and welfare goals of the Act with minimal disruptive impacts from EPA noise regulation. Because there appears to be significant price elasticity of demand for this equipment, it is estimated that demand could possibly decrease by 3–5 percent, but manufacturer total revenue should remain essentially unchanged.

However, the Agency has noted that the wholesale price of the equipment subject to these proposed standards has increased over 50 percent during the period 1967 to 1974, due in part to general inflation, but more importantly, to increase in unit size and productivity. Unit shipments attendant to these increases declined less than 5 percent.

The increase in annualized costs to users (including increased capital cost, operation and maintenance) through the year 2000 is estimated to be about $228 million or an increase of approximately 3.4 percent. Compared to the estimated $189 billion annual construction receipts for the year 1976, the estimated increase in annualized user cost represents a possible increase in construction costs of approximately 0.12 percent.

Other aspects of potential economic impact due to promulgation of this proposed regulation are:

1. *Impacts on manufacturers.* In order to highlight firms that may be subject to strong economic pressure and possible discontinuance of wheel and/or crawler tractor operations because of the regulation, a capital availability impact model was developed. Seven small and medium firms were singled out by the model as unlikely to obtain sufficient capital to finance noise abatement.

These firms were then contacted individually to determine if any specific factors could mitigate the impact of the regulation. One firm's machines can already comply with the March 1, 1981, standards and the firm expects to achieve the March 1, 1984, standards at costs much lower than the generalized list model predicts. This firm does not anticipate difficulty in compliance. Another firm stated that it does not expect difficulty in obtaining the capital required for abatement. The three remaining firms are presently suffering from undercapitalization and expect that they will have difficulty in the finance of abatement actions.

2. *Impacts on suppliers.* Some component suppliers may increase their sales depending on their ability to reduce the noise emissions of their product and thereby contribute to the reduction in overall machine noises. Furthermore, those suppliers specializing in the manufacture of sound damping and sound absorbent materials and other products required for abatement would be expected to experience increased sales.

3. *Impacts on exports.* Because the technology studied is essentially modular, machines for export can generally be produced without noise abatement equipment; therefore, since equipment destined solely for export is not required to meet the proposed standards, the impact on exports should be minimal.

4. *Impacts on imports.* The proposed regulation will apply to all imported machines. The percentage (approximately 2 percent of total dollar consumption) of wheel and crawler tractors imported is very small. Thus, the proposed regulation should have little to no effect on the U.S. balance of payments. There would not appear to be any adverse competitive impacts on foreign manufacturers in the U.S. markets.

5. *Employment impacts.* The Agency's studies indicate that the proposed regulation would have a negligible overall effect on employment. The existing research and development staffs of major firms and independent suppliers of these services can readily handle the industry's R&D requirements for noise abatement. There may, in fact, be a modest increase in manufacturing labor to design, build, and install the requisite abatement equipment. Should there be decreases in demand for regulated equipment, this potential increase may be offset by a corresponding decline in regular production manufacturing personnel. This latter point is highly uncertain and EPA solicits specific data or information that would indicate whether this proposed regulation would result in decreased sales of regulated equipment.

6. *Effects on gross national product.* The proposed regulation is not expected to directly affect the Gross National Product (GNP). Since the Agency's best estimate of the price elasticity of demand for impacted equipment is −1; it is expected that marginal price increases of equipment would likely be offset by equal percentage decreases in demand, the net result being an unchanged GNP as expressed in current dollars.

The GNP could suffer a slight setback indirectly through declining construction demand if contractors raise prices to offset the added costs of regulated equipment. However, the relatively small impact (less than 0.12 percent), of this proposed regulation on total construction receipts (reference year 1976) leads the Agency to conclude that the effects will not be apparent.

7. *Anticipated government enforcement costs.* It is currently estimated that the annual costs to the Agency for enforcement testing of wheel and crawler tractors will amount to $133,000 commencing in 1980.

6.0 Enforcement

6.1 *General.* The EPA enforcement strategy will place a major share of the responsibility on the manufacturers for pre-sale testing to determine the compliance of wheel and crawler tractors with these regulations and noise emission standards. This approach leaves the manufacturer in control of many aspects of the compliance program and imposes a minimal burden on his business. The effectiveness of this strategy necessitates monitoring by EPA personnel of the tests conducted and actions taken by the manufacturer in compliance with this regulation.

The enforcement strategy proposed in this regulation consists of three parts: (1) Production Verification, (2) Selective Enforcement Auditing, and (3) In-Use Compliance.

6.2 *Production verification (PV).* PV is the testing by a manufacturer of early production models of a category or configuration of the product, and submitting a report of the results to the EPA. This process, using the proposed methodology, gives the EPA some assurance that the manufacturer has the requisite noise control technology in hand and the capability to apply it to the production process. Models selected for testing must have been assembled using the manufacturer's normal assembly method and must be units assembled for sale.

PV does not involve any formal EPA approval or issuance of certificates subsequent to manufacturer testing. The proposed regulation would require that prior to the distribution in commerce of any regulated product, that product must undergo production verification. Section 204.105–2(a) would allow a conditional and temporary waiver of this requirement under special circumstances. Responsibility for testing rests with the manufacturer. However, the Administrator reserves the right to be present to monitor any test (including simultaneous testing with his equipment) or to require that a manufacturer ship products for testing to the EPA's Noise Enforcement Facility in Sandusky, Ohio or to any other site the Administrator may find appropriate.

The basic production unit selected for testing purposes is a product configuration, which is a set of machines grouped together on the basis of parameters proposed in § 204.105–3. The manufacturer would be required to verify production products of each configuration. The regulation allows manufacturers to group configurations into categories based on the parameters proposed in § 204.105–2 and to verify by category. This is done by selecting the configuration in each category that has the highest level of noise emissions at the end of its defined Acoustical Assurance Period (based on tests or on engineering judgment). If when tested in accordance with the test procedure, that configuration does not exceed a noise level defined by the new product standard minus that configuration's expected noise degradation over its Acoustical Assurance Period, then all

configurations in that same category are considered production verified.

The Administrator also reserves the right to test products at a manufacturer's test facility using either his own equipment or the manufacturer's equipment. This will provide the Administrator with an opportunity to determine that the manufacturer's test facility and test equipment meet the specifications proposed in § 204.104. If it is determined that the facility or equipment do not meet these specifications, he may disqualify them from further use for testing under this subpart.

Under §204.106(a)(1), the Administrator may require that a manufacturer submit to him any product tested or scheduled to be tested pursuant to this regulation or untested products at such time and place as he may designate. If a manufacturer proposes to add a new configuration to his product line or change or deviate from an existing configuration with respect to any of the parameters which define a configuration, the manufacturer must verify the new configuration either by testing a product and submitting data or by filing a report which demonstrates verification on the basis of previously submitted data. A manufacturer may production verify a configuration at any time during the model year or in advance of the model year if he desires.

Production verification is an annual requirement. However, the Administrator, upon request by a manufacturer, may permit the use of data from previous production verification reports for specific configurations or categories.

Production verification performed on the early production models demonstrates that the models conform to the applicable noise emission standard and limits the possibility that non-conforming products are distributed in commerce. Because the possibility still exists that subsequently produced machines may not conform, selective enforcement auditing (SEA) testing is incorporated in these proposed regulations.

6.2 *Selective enforcement auditing.* Selective enforcement auditing (SEA) is the testing of a statistical sample of assembly line (production) products from a specified product configuration or category to determine whether these products comply with the applicable noise emission standards.

SEA testing is initiated when a test request is issued to the manufacturer by the Assistant Administrator for Enforcement or his designated representative. The test request will require the manufacturer to test a batch of products of a specified category or configuration produced at a specified plant. An alternative category or configuration may be designated in the event that products of the first category or configuration are not available for testing.

The SEA plan employs a technique known as inspection by attributes. The basis criterion for acceptance or rejection of a batch is the number of sample products in the batch which meet the standard rather than the average noise level of the products tested.

A sequential batch sampling inspection plan will be used for SEA testing. Sequential sampling differs from single sampling in that small test samples are drawn from consecutive batches and tested sequentially until a statistically significant conclusion can be drawn rather than one large sample being drawn and tested all at once. It offers the advantage of keeping the number of products tested to a minimum when the majority of products are meeting the standards.

A batch will be defined as the number of products produced during a time period specified in the test request. This will allow the Administrator to select batch sizes small enough to keep the number of products to be tested at a minimum and still to draw statistically valid conclusions about the noise emission performance of all products in that category or configuration.

The sampling plans proposed in this regulation are arranged according to the size of the batch from which a sample is to be drawn. Each plan specifies the sample size and the acceptance and rejection number for the established acceptance quality level (AQL). This AQL is the maximum percentage of products exceeding the applicable noise emission standard that for purposes of sampling inspection can be considered satisfactory. An AQL of 10 percent was chosen for wheel and crawler tractors to take into account some test variability. The number of failing products in a sample is compared to the acceptance and rejection numbers for the appropriate sampling plan. If the number of failures is less than or equal to the acceptance number, then there is a high probability that the percentage of non-complying products in the batch is less than the AQL and the batch is accepted. If the number of failing products is greater than or equal to the rejection number, then there is a high probability that the percentage of non-complying products in the batch is greater than the AQL and the batch fails.

Since the sampling strategy involves a multiple sampling plan, in some instances the number of failures in a test sample may not allow acceptance or rejection of a batch so that continued testing may be required until a decision can be made to either accept or reject a batch.

When a batch sequence is tested and accepted in response to a test request, the testing is terminated. When a batch sequence is tested and rejected, the manufacturer must cease introducing these products into commerce. If the manufacturer desires to continue production and introduction into commerce of the failed configuration (category) he may do so provided under proposed § 204.107-6, he tests all of the products in that category or configuration produced at that plant. He may then distribute the individual products that pass the test.

Regardless of whether a batch is accepted or rejected, failed products would have to be repaired or adjusted and pass a retest before they can be distributed in commerce. The manufacturer can request a hearing on the issue of non-compliance of the rejected category or configuration.

Since the number of machines tested in response to a test order may vary considerably, a fixed time limit cannot be placed on completing all testing. The proposed approach is to establish a limit on test time per product. It is estimated that manufacturers can test a minimum of two (2) products per day. However, manufacturers are requested to present any data or information that may effect a revision of this estimate.

6.4 *Administrative orders.* Section 11 (d)(1) of the Act provides that: "Whenever any person is in violation of section 10(a) of this Act, the Administrator may issue an order specifying such relief as he determines is necessary to protect the public health and welfare."

This provision grants the Administrator discretionary authority to issue remedial orders to supplement the criminal penalties of section 11(a). The proposed regulation provides for such orders in these circumstances: (1) Recall for failure of product to comply with the regulation; (2) cease to distribute products not properly production verified; and (3) cease to distribute products for failure to test.

In addition, 40 CFR 205.4(f) provides for cease to distribute orders for substantial infractions of the regulation requiring entry to manufacturers' facilities and reasonable assistance. These provisions do not limit the Administrator's authority to issue orders, but give notice of cases where such orders would in his judgment be appropriate. In all such cases notice and opportunity for a hearing will be given.

6.5 *Compliance labeling.* The regulation requires that subject wheels and crawler tractors be labeled to provide notice that the product complies with the noise emission standard. The label shall contain a notice of tampering prohibitions. The label also contains the effective date of the standard to which the product complies. The EPA is considering requiring that the actual not-to-exceed level of the standard be stated on the label. This would be intended to aid State and local officials in field testing and enforcement of compliimentary in-use standards. Specific comments on the advantages and disadvantages of including the level of the standard on the compliance label are solicited from all concerned parties. A coded rather than actual date of manufacture has been required so as to avoid disruption of marketing and distribution patterns.

6.6 *In-use compliance.* In-use compliance provisions are included in §§ 204.108-1, 204.108-2, and 204.108-3 to ensure that wheel and crawler tractor noise levels are reasonably maintained for the life of the product provided that the machines are properly maintained, used, and repaired. These provisions include a requirement that the manufacturers provide a time of sale warranty to purchasers, assist the Administrator

in defining those acts that constitute tampering, and finally provide purchasers with instructions specifying the maintenance use and repair required to minimize or negate degradation during product use.

6.7 *Acoustical assurance period compliance.* EPA does not specify what testing or analysis a manufacturer must conduct to determine that his products will meet the Acoustical Assurance Period requirement. However, under § 204.108–4, the manufacturer is required to make a determination regarding the expected noise level increase if any and to maintain records of the test data and/or other information upon which the determination was based. This determination may be based on information such as tests of critical noise producing or abatement components, rates of noise control deterioration, engineering judgments based on previous experience, and physical durability characteristics of the product or product components.

The mechanism used in these regulations to express the amount of expected noise level degradation, if any, is the sound level degradation factor (SLDF). The SLDF is the degradation (increase in A-weighted sound pressure level) which the manufacturer expects will occur on a configuration during the period of time specified as the AAP. The manufacturer must determine an SLDF for each of his product configurations.

To ensure that the products will meet the noise standards throughout the AAP, proposed § 204.102(c)(2) requires the product to emit a time of sale noise level less than or equal to the new product noise emission standard minus the SLDF. In no case shall this noise level exceed the federal noise standard; i.e., a negative SLDF may not be used. Production verification and selective enforcement audit testing both embody this principle.

If the product's noise level does not deteriorate during the AAP when properly used and maintained, the SLDF is 0. If a manufacturer determines that product configuration becomes quieter during the AAP, the configuration must still meet the standard at the time of sale and an SLDF of 0 must be used for that configuration.

It may be that most of the data required to determine an SLDF will already be in the hands of the manufacturer since this information is typically used for general product development work. In any event, EPA is not now requiring long term durability tests to be run as a matter of course.

6.7 *Applicability of previously promulgated regulations.* Manufacturers who will be subject to the proposed regulation must also comply with the general provisions of 40 CFR Part 204 Subpart A. These include the requirements for inspection and monitoring of manufacturer's actions taken in compliance with the proposed regulation and the requirements for requesting and granting exemptions from this proposed regulation. Comments are invited on this point.

A more detailed description of the enforcement regulation may be found in the Background Document.

7.0 Future Intent

The Agency is pursuing a strategy through which major contributors to overall construction site noise will be identified and subsequently regulated. This coordinated approach is necessary, because at most sites, a number of different construction equipments are generally operated at the same time and the quieting of only one device may not in itself be sufficient to adequately reduce site noise to a level the Agency believes requisite to protect the public health and welfare.

The Agency intends to continue its investigations pursuant to noise regulatory actions for other construction equipment products. Consequently, the levels specified for the standards in this proposed rulemaking are consistent with the Agency's overall objective to quiet all major noise producing products in order to ultimately reduce the total noise emitted from all construction sites.

8.0 Public Comment

The Agency is committed by statute and policy to public participation in the decision-making process for its environmental regulations. That policy encourages and solicits communications and comments to the public docket on all aspects of the proposed regulation, including EPA's determination that wheel and crawler tractors (wheel and track loaders and wheeled and track dozers) are a major source of noise, 40 FR 23107 (May 28, 1975). These contributions are desired from as many diverse views as possible. When received, such information is fully analyzed and where so indicated, necessary changes in proposed rules will be made and explained in the final regulation.

All interested parties are invited to attend public hearings concerning the proposed wheel and crawler tractor noise emission regulation. Hearings will be held on August 30, 1977, commencing at 9 a.m., in the Benjamin Franklin Hotel, 9th and Chestnut Streets, Philadelphia, Pennsylvania 19105, and on September 1, 1977, commencing at 9 a.m., in the Ambassador Hotel, 3400 Wilshire Blvd., Los Angeles, California 90010. Persons wishing to present their views at either public hearing should notify the Director, Standards and Regulations Division, no later than July 29, 1977, of their intention to make a statement so that presentations may be scheduled.

It is requested that presentations be limited to 20 minutes to enable all prescheduled persons an opportunity to speak and permit a question and answer period following each presentation. Persons who have not given notice of their intent to speak will be heard following the scheduled statements. It is requested that speakers submit, if practicable, five (5) copies of their statement prior to the hearing date to the Director, Standards and Regulations Division.

9.0 Background Document

The document entitled "Environmental Impact Statement, Economic Impact Statement and Background Document for Noise Emission Standards for Wheel and Crawler Tractors" may be obtained from:

U.S. Environmental Protection Agency, EPA Public Information Center (PM–215), Room 2104D, Waterside Mall, Washington, D.C. 20460.

(Secs. 6, 10, 11, 13, and 15 of the Noise Control Act, Pub. L. 92–574, 86 Stat. 1237, 1243, 1244, and 1245 (42 U.S.C. 4905, 4909, 4910, 4912, and 4914).)

Dated: June 23, 1977.

Barbara Blum,
Acting Administrator.

40 CFR Chapter I is amended by adding Subpart C, reading as follows:

Subpart C—Wheel and Crawler Tractors

Authority: Sec. 6 of the Noise Control Act (42 U.S.C. 4905) and additional authority as noted below.

Subpart C—Wheel and Crawler Tractors

§ 204.100 Applicability.

(a) This regulation and the provisions of this subpart shall apply to the following machine types and horsepower ratings used primarily in construction and entered into commerce after the effective dates specified in § 204.102:

(1) Wheel loaders with engines of not less than 20 or greater than 500 horsepower.

(2) Crawler tractors with engines of not less than 20 or greater than 450 horsepower.

(3) Wheel tractors with engines of 20 horsepower or above.

(b) Machines excluded from this regulation include:

(1) Wheel loaders with integral backhoes.

(2) Wheeled tractors with integral dozer blade linkage.

(3) Skid steer loaders.

(4) Wheel and crawler tractors with attachments—other than bucket or blade attachment—integral to the machine frame.

(5) Machines manufactured primarily for agricultural, mining, or logging operations.

(6) Trenching equipment—self-propelled machines used exclusively to produce a continuous trench by means of a digging chain or similar device.

§ 204.101 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act or in other subparts of this part.

(a) "Machines" means any wheel loader, crawler tractor, or wheel tractor.

(b) "Wheel loader" (also known as front end loader) means a tractor with articulated steering which moves on wheels and is designed to operate with an integral bucket attachment. Also included are the engine, transmission, drive train, bucket control system, and all cooling, lubricating, regulating, starting, fuel systems, and all other equipment necessary to constitute a complete self-contained unit.

(c) "Crawler tractor" (also known as track laying or tracked tractor) means a tractor which moves on tracks and which may or may not have an integral blade or bucket attachment used for dozing or loading operations. Also included are the engine, transmission, drive train, blade control system and all cooling, lubricating, regulating, starting, and fuel systems; and all other equipment necessary to constitute a complete self-contained unit.

(d) "Wheel tractor" (also known as utility or industrial tractor) means a tractor with rigid frame which moves on wheels and which may have as an integral component a loader bucket attachment or which can be fitted with other non-integral attachments. Also included are the engine, transmission, drive train, attachment control system, and all cooling lubricating, regulating, starting, and fuel systems; and other equipment necessary to constitute a self-contained unit.

(e) "Major machine component" means the primary device(s) and/or other attachments to the machine to perform the construction operations for which it is sold.

(f) "Simulated major machine component" means a representative version of the major machine component which is not attached to the machine. It shall be located at the same geometric position from the machine surface as the major machine component in a neutral position. The simulated machine component represents the major machine component in geometry and acoustic characteristics at the time of the noise emission test.

(g) "Horsepower" means net flywheel horsepower.

(h) "Model year" means the manufacturer's annual production period which includes January 1 of such calendar year: *Provided*, That if the manufacturer has no annual production period, the term "model year" shall mean the calendar year.

(i) "Machine configuration" means the basic classification unit of a manufacturer's product line and is comprised of all produce designs, models or series which are identical in all material aspects with respect to the parameters listed in § 204.105–3.

(j) "Category" means a group of machine configurations which are identical in all material aspects with respect to the parameters listed in paragraph (c) (1) (i) of § 204.105–3.

(k) "Production verification product" means any product selected for testing, tested, or verified pursuant to the production verification requirements of this subpart.

(l) "Noise emission test" means a test conducted pursuant to the measurement methodology specified in § 204.104.

(m) "Inspection criteria" means the rejection or acceptance numbers associated with a particular sampling plan.

(n) "Acceptable Quality Level (AQL)" means the maximum percentage of failing products that, for purposes of sampling inspection, can be considered satisfactory as a process average.

(o) "Batch" means the collection of machines of the same category or configuration, as designated by the Administrator in a test request, from which a batch sample is to be drawn and inspected to determine conformance with the acceptability criteria.

(p) "Batch sample" means the collection of machines of the same category or configuration which is drawn from a batch from which test samples are drawn.

(q) "Batch sample size" means the number of products of the same category or configuration in a batch sample.

(r) "Test sample" means the collection of machines from the same category or configuration which is drawn from the batch sample and which will receive noise emission tests.

(s) "Batch size" means the number, as designated by the Administrator in test request, of products of the same category or configuration in a batch.

(t) "Test sample size" means the number of products of the category or configuration in a test sample.

(u) "Acceptance of a batch sequence" means that the number of rejected batches in the sequence is less than or equal to the acceptance number as determined by the appropriate sampling plan.

(v) "Rejection of a batch sequence" means that the number of rejected batches in a sequence is equal to or greater than the rejection number as determined by the appropriate sampling plan.

(w) "Acceptance of a batch" means that the number of non-complying machines in the batch sample is less than or equal to the acceptance number as determined by the appropriate sampling plan.

(x) "Rejection of a batch" means the number of non-complying products in the batch sample is equal to or greater than the rejection number as determined by the appropriate sampling plan.

(y) "Shift" means the regular production work period for one group of workers.

(z) "Failing product" means that the noise emissions of the product when measured in accordance with the applicable procedures, as delineated in this subpart, exceed the applicable standard.

(aa) "Acceptance of a product" means that the noise emissions of the product when measured in accordance with the applicable procedure, as delineated in this subpart, conform to the applicable standard.

(bb) "Test machine" means a machine in the test sample or a production verification machine.

(cc) "Tampering" means those acts prohibited by section 10(a)(2) of the Act.

(dd) "Exhaust System" means the system comprised of components which provide for enclosed flow of exhaust gas from engine exhaust port to the atmosphere.

(ee) "Low Noise Emission Product" means any product which emits noise in amounts significantly below the levels specified in noise emission standards under the applicable regulations.

(ff) "Noise Control System" includes any part, component or system the primary purpose of which is to control or cause the reduction of noise emitted from a product.

(gg) "Sound Level Degradation Factor (SLDF)" means the increase in A-weighted sound level which the product configuration is projected to undergo during the Acoustical Assurance Period when properly maintained and used.

(hh) "Warranty" means the warranty required by section 6(d)(1) of the Act.

§ 204.102 Noise emission standards.

(a) Wheel and crawler tractors manufactured after the following effective dates shall be designed, built, and equipped so that they will not produce A-weighted sound pressure levels in excess of the levels indicated below:

Machine type	Horsepower	Level (dBA)	Effective date
Crawler tractors	20 to 150	77	Mar. 1, 1981
Do	150 to 400	74	Mar. 1, 1979
		83	Mar. 1, 1981
		80	Mar. 1, 1976
Wheel loaders	20 to 349	79	Mar. 1, 1981
		76	Mar. 1, 1984
Do	350 to 600	84	Mar. 1, 1981
		80	Mar. 1, 1986
Wheel tractors	20+	74	Mar. 1, 1981

(b) The standards set forth in paragraph (a) of this section refer to the sound emission levels as determined in accordance with the procedures prescribed in § 204.104.

(c) In-Use Standard. (1) Following the effective date of the standard, wheel and crawler tractors manufactured to meet the appropriate standard listed in § 204.102(a) shall continue to meet the standard for an Acoustical Assurance Period (AAP) of 5 years or 9,000 operating hours after sale to the ultimate purchaser, provided that the product is properly maintained and used in accordance with manufacturers' recommendation and provided that there has been no tampering with noise control components.

(2) At the time of product verification (PV) testing in § 204.105 and selective enforcement auditing (SEA) testing in § 204.107, new wheel and crawler tractors must comply with the standards set forth in paragraph (a) of this section, minus the sound level degradation factor (SLDF) developed in accordance with § 204.105–4.

(d) Low Noise Emission Product. For the purpose of Low-Noise-Emission Product (LNEP) Certification pursuant to 40 CFR Part 203, wheel and crawler tractors subject to this subpart which are procured after the dates listed below, shall not emit A-weighted sound pressure levels in excess of the levels indicated when such levels are determined in accordance with the procedures prescribed in § 204.104. LNEP products must meet all requirements of paragraph (c) (1) and (2) of this section.

Machine type	Horsepower	Level (dBA)	Procurement date
Crawler tractors	20 to 199	72	Mar. 1, 1980
Do	200 to 450	69	Mar. 1, 1982
		75	Mar. 1, 1980
Wheel loaders	20 to 249	75	Mar. 1, 1982
		74	Mar. 1, 1980
		77	Mar. 1, 1983
Do	250 to 500	70	Mar. 1, 1980
		75	Mar. 1, 1983
Wheel tractors	20+	69	Mar. 1, 1980

(Secs. 10, 15 of the Noise Control Act (42 U.S.C. 4909, 4914).)

§ 204.103 Maintenance of records; submittal of information.

(a) Except as otherwise provided, the manufacturer of any new product subject to any of the standards or procedures prescribed in this subpart shall establish, maintain and retain the following adequately organized and indexed records:

(1) "General records."—(i) Identification and description of category and configuration parameters of all products comprising the manufacturer's product line for which testing is required under this subpart and the identification and description of all devices incorporated into the product for the purpose of noise control and attenuation.

(ii) A description of all procedures other than those contained in this regulation used to perform noise tests on any test machine.

(iii) A record of the calibration of the acoustical instrumentation as required by § 204.104.

(iv) A record of the date of manufacture of products subject to this part, keyed to the serial number or other coded identification contained on the label affixed to each product pursuant to § 204.105–8(a).

(2) Individual records for test products: (i) A complete record of all noise emission tests performed for PV and SEA (except tests performed by EPA directly), including all individual worksheets and/or other documentation relating to each test, or exact copies thereof.

(ii) A record and description of all repairs, maintenance and other servicing performed on PV and SEA test products, giving the date and time of the maintenance or service, the reason for it, the person authorizing it, and the names of supervisory personnel responsible for the conduct of the maintenance or service.

(3) A properly filed production verification report following the format prescribed by the Administrator in § 204.105–4 fulfills the requirements of (a) (1) (i), (ii), (iii), (iv) and (a) (2) (i) and (ii) of this paragraph.

(4) All records required to be maintained under this part shall be retained by the manufacturer for a period of three (3) years from the production verification date. Records may be retained as hard copy or alternatively reduced to microfilm, punch cars, etc., depending on the record retention procedures of the manufacturer; however, if an alternate method is to be used, all required information shall be retained relative to the alternative method.

(b) The manufacturer shall, pursuant to a request made by the Administrator, submit to the Administrator the following information with regard to new machine production:

(1) Number of products, by category or configuration, scheduled for production for the time period designated in the request.

(2) Number of products, by category or configuration, produced during the time period designated in the request.

(Sec. 13 of the Noise Control Act (42 U.S.C. 4912).)

§ 204.104 Test procedures.

(a) "General." The test site, measurement equipment, conditions for testing and measurement procedures in this section shall be employed to demonstrate compliance with the standards set forth in § 204.102.

(b) "Test Site Description." (1) The location employed for measuring noise during noise compliance testing shall consist of an open site above a hard reflecting plane. The reflecting plane shall consist of a surface of smooth concrete or smooth sealed asphalt and shall extend one (1) meter beyond each microphone location. No acoustically reflecting surface such as a building, sign board, hillside, etc. shall be located within thirty (30) meters of any microphone location.

(2) The reflecting plane described above shall be flat within ±0.05 meters.

(c) "Measurement equipment." The measurement equipment used for noise standard compliance testing shall consist of the following or its equivalent:

(1) Sound level meter and microphone system conforming to the Type I requirements of American National Standards Institute (ANSI) S1.4. 1971, "Specification for Sound Level Meters."

(2) A windscreen, to be employed when the wind speed exceeds 11km/hr, which does not affect the A-weighted sound levels in excess of ±0.5 dB.

(3) A sound level calibrator accurate to within ±0.5 dB shall be used to calibrate the acoustic measurement system consisting of, but not limited to, a microphone and sound level meter.

(4) An anemometer or other device accurate to within ±10 percent shall be used to measure wind velocity.

(5) A tachometer or other indicator accurate to within ±3 percent shall be used to measure machine engine speed.

(6) A barometer accurate to within ±5 percent shall be used to measure atmospheric pressure.

(7) A thermometer accurate to within ±1 degree shall be used to measure ambient temperature.

(d) "Measurement equipment calibrations." All measurement equipment shall be calibrated annually using the methodology prescribed by the manufacturer of the equipment.

(e) "Test conditions." Noise standard compliance testing shall be carried out under the following conditions:

(1) Zero rain or other precipitation;

(2) Wind speed less than 19 km/hr;

(3) No observer shall be located within 3 meters in any direction of any microphone location; nor shall any person be located between the test machine and microphone(s);

(4) The reflecting plane, described in (b) above, shall be free of flowing or standing water, snow or other covering or any extraneous material such as gravel;

(5) Sound levels produced by the test machine shall be at least 10 dB greater than the test site background sound level.

(f) "Test machine." The test machine must be operated with all component drive systems in the neutral position. The machine shall be operated in accordance with the manufacturer's specified temperature, oil pressure and other performance standards that are representative of continuous service. The machine shall be operated at maximum rated or governed rpm (high-idle) as specified by the manufacturer. All cooling air vents in the engine enclosure and other service doors and/or inspection panels, normally open during machine operation, shall be fully open during all sound level measurements. Service doors and/or inspection panels, normally closed during machine operation, shall be closed during all sound level measurements. The test machine shall be configured with either the major machine component or a simulated major machine component located in the lowered (at rest) position

with the bottom edge of the component resting on the reflecting plane described in (b) above. Antivibration material may be installed between the major machine component and the reflecting plane to prevent spurious vibration generated noise levels.

(g) "Microphone locations." Four microphone locations should be employed to acquire machine sound levels at the right, left, front and back of the test machine. Each microphone shall be located on axis 15±0.1 meters from the test machine at a height of 1.2±0.1 meters above the reflecting plane. The right, left, front and back refer to the respective sides of an imaginary box that would just fit over the test machine, minus its major machine component discussed in (f) above.

(h) "Data required." The following data shall be acquired during noise emission standard compliance testing:

(1) The A-weighted ambient sound level, at each microphone location, prior to operation of the test unit;

(2) A-weighted sound levels with the indicating meters set for slow response shall be measured at each microphone location as defined in paragraph (g) during test machine operation as described in paragraph (f).

(3) All other non-acoustical data to complete Table IV of Appendix I.

(i) "Calculation of average sound level." The average A-weighted sound level shall be calculated by the following method:

$$\bar{L} = \frac{1}{N}\sum_{i=1}^{N} L_i$$

where;

$\bar{L}$ = Average A-weighted sound level, in decibels.
L_i = A-weighted sound level, in decibels.
i = 1, 2, 3, 4; an index denoting microphone location.
N = Number of measuring positions.

(j) The Administrator may approve applications from manufacturers for the use of test procedures which differ from those contained in this subpart so long as the alternate procedures have been demonstrated to correlate with the prescribed procedure. To be acceptable, alternate testing procedures shall be such that the test results obtained will identify all those test units which would not comply with the noise emission limit prescribed in § 204.102, when tested in accordance with the procedures contained in § 204.104 (a)–(h). Tests conducted by manufacturers under approved alternate procedures may be accepted by the Administrator for all purposes, including, but not limited to, production verification testing and selective enforcement audit testing.

(k) "Presentation of information". All information required by this section may be recorded using the format recommended on the Noise Data Sheet shown in Appendix I, Table IV.

§ 204.105 Product verification.

§ 204.105–1 General requirements.

(a) Every new product manufactured for distribution in commerce in the United States which is subject to the standards prescribed in this subpart and not exempted in accordance with Subpart A, § 204.5:

(1) Shall be verified in accordance with production verification procedures described in this subpart;

(2) Shall be represented in a Production Verification Report, as required by § 204.105–4 of this subpart.

(3) Shall be labeled in accordance with the requirements of § 204.105–5 of this subpart; and

(4) Shall conform to the applicable noise emission standards established in § 204.102 of this subpart.

(b) The requirements of paragraph (a) of this section apply to new products at the time they first conform to the definition of products in these regulations. The responsibility for complying with the requirement of paragraph (a) of this section rests with the manufacturer of the new product at the time the product first conforms to the definition of wheel loader, crawler, tractor, or wheel tractor in these regulations.

(c) Subsequent manufacturers of a new product, which conforms to the definition of products in these regulations when received by them from a prior manufacturer, need not fulfill the requirements of paragraph (a) (1), (2) or (3) of this section where such requirements have already been complied with by a prior manufacturer provided that such subsequent manufacturing does not constitute tampering as defined pursuant to § 204.108–2.

(Secs. 10, 12 of the Noise Control Act (42 U.S.C. 4909, 4912).)

§ 204.105–2 Production verification: compliance with standards.

(a) (1) Prior to distribution in commerce of products of a specific configuration, the manufacturer of such products shall verify such configuration in accordance with the requirements of this subpart: Except, that production verification of a configuration is automatically and conditionally waived by the Administrator without request by a manufacturer for a period of 45 consecutive days from the date of distribution in commerce by a manufacturer of the first product of that configuration in order to enable a manufacturer to distribute products in commerce pending compliance thus avoiding disruption of the manufacturing process: *Provided*, That a manufacturer conducts the necessary tests required in paragraphs (b) and/or (c) of this section as soon as weather conditions at a manufacturer's test facility permit after distribution in commerce of the first product of a configuration and that such conditions are documented by the manufacturer and provided to the Administrator on request. Failure to test on such first day will result in automatic and retroactive recession of the waiver and will render the manufacturer liable for illegal distribution of products in commerce.

(2) At the completion of any 45 day period the conditional waiver granted under paragraph (a) (1) of this section is rescinded for that configuration unless the manufacturer has complied with the requirements of paragraph (b) and/or (c) of this section as appropriate: Except, that upon application by a manufacturer and a showing that the weather conditions at the manufacturer's test facility or other conditions beyond the control of the manufacturer made it impossible to conduct the required testing and that documentation of such conditions are submitted by the manufacturer, the Administrator, at his option, may extend for a period not to exceed 45 days, conditional production verification for a configuration to enable the manufacturer to comply with the requirements of paragraph (b) and/or (c) of this section or he may require pursuant to § 204.107 that the manufacturer ship the test machine to the EPA test facility for testing by the Administrator.

(b) Production verification requirements with regard to each machine configuration consist of:

(1) Testing in accordance with § 204.105–7 of a machine selected in accordance with § 204.105–3.

(2) Compliance of the test machine with the applicable standard specified in § 204.102, when tested in accordance with § 204.104.

(3) Submission of a production verification report pursuant to § 204.105–4.

(c) (1) In lieu of testing products of every configuration as described in paragraph (b) of this section, the manufacturer may elect to verify the configuration based on representative testing, the requirements of which consist of:

(i) Grouping configurations into a category will be determined by a separate combination of at least the following parameters (a manufacturer may use more parameters):

(A) Engine Type.
Gasoline
Diesel
Other
(B) Engine Manufacturer
(C) Engine Horsepower.
(D) Engine Configuration (e.g., L–6, V–8, etc.

(ii) (A) Identifying the configuration within each category which emits the highest sound level in dBA at the end of its defined AAP based on best technical judgment emission test data, or both;

(B) If two or more configurations would emit the same sound level described in (ii) (A) above, then identifying the configuration that emits the highest sound level when distributed into commerce.

(iii) Testing in accordance with § 204.104 of a product selected in accordance with § 204.105 which must be a product of the configuration which is identified pursuant to subparagraph (ii) of this paragraph as having the highest A-weighted sound pressure level (estimated or actual) within the category at the end of the specified AAP;

(iv) Compliance of the test machine with the applicable standard when tested in accordance with § 204.104; and

(v) Submission of a production verification report pursuant to § 204.105–4.

(2) Where the requirements of paragraph (c) (1) of this section are com-

plied with, all those configurations contained within a category are considered represented by the tested machine and are considered to be production verified.

(3) (i) Where the manufacturer tests a product configuration which has not been identified as having the highest sound pressure level of a category, at the end of its acoustical assurance period but all other requirements of paragraph (c) (1) of this section are complied with, all those configurations contained within that category which are determined to have a sound pressure level at the end of the AAP no greater than the tested product are considered to be represented by the tested product and are considered to be production verified; however, a manufacturer must product verify, according to the requirements of (b) (1) and/or (c) (1) of this section any configurations in the subject category which have a higher A-weighted sound pressure level at the end of the AAP than the product configuration tested.

(ii) Where more than one configuration would emit the highest sound level after the AAP and the manufacturer tests a configuration among them which has been determined as not having the highest sound level of a category at the time of sale, but all other requirements of paragraph (c)-(1) of this section are complied with, all those configurations contained within that category which are determined to have sound pressure levels, at the time of sale, no greater than the tested product configuration are considered to be production verified; however, a manufacturer must production verify according to the requirements of (b) (1) and/or (c) (1) of this section any configurations in the subject category which have a higher sound pressure level at the time of sale than the product configuration tested.

(d) A manufacturer may elect to production-verify using representative testing, pursuant to paragraph (c) of this section, all or part of his product line.

(e) The manufacturer may, at his option, proceed with any of the following alternatives with respect to any product determined not in compliance with applicable standards:

(1) Delete that configuration from the production-verification report. Configurations so deleted may be included in a later report under § 204.105–4. However, in the case of representative testing a new test product from another configuration must be selected and production verified according to the requirements of paragraph (c) of this section, in order to production verify the category represented by the noncompliant machine.

(2) Modify the test product and demonstrate by testing that it meets applicable standards. All modifications and test results shall be reported in the production-verification report. The manufacturer shall modify all production products of the same configuration in the same manner as the test machine before distribution into commerce.

(f) Upon request by the Director, Noise Enforcement Division, the manufacturer shall notify said Director of any production-verification testing scheduled by the manufacturer pursuant to this section so that EPA Enforcement Officers may be present to observe and monitor such testing or conduct the testing in lieu of the manufacturer.

(Sec. 13 of the Noise Control Act (42 U.S.C. 4912).)

§ 204.105–3 Configuration identification.

A separate product configuration shall be determined by each combination of the following parameters:

(a) Category parameters listed in § 204.105–2 and

(b)—Exhaust System Configuration: (1) Single vertical; (2) Dual vertical; (3) Single horizontal; (4) Dual horizontal; (5) Exhaust pipe dimensions; (6) Manufacturer.

(c) Air Induction System: (1) Natural; (2) Turbocharged; (3) Air intake system design specifications and manufacturer.

(d) Cooling System: (1) Fan: (A) Diameter, (B) Maximum rpm; (2) Coolant Capacity; (3) Fan Shroud Design.

(e) Engine Displacement.

(f) Product Attachment Design Specifications: (1) Blade; (2) Bucket; (3) Backhoe; (4) Winch; (5) Ripper; (6) Other.

(g) Special Application Enclosures: (1) Undercarriage guards: (A) Crankcase, (B) Transmission; (2) Radiator protective cover; (3) Radiator cold weather screen; (4) Engine enclosure; (5) Operator cockpit: (A) Rollover protection, (B) Complete cab enclosure; (6) Track guide cover; (7) Tire splash cover; (8) Other enclosures affecting noise signatures.

(h) Power to Ground Transfer: (1) Wheel specifications; (2) Track specifications.

(Sec. 13 of the Noise Control Act (42 U.S.C. 4912).)

§ 204.105–4 Production verification report: required data.

(a) Prior to distribution in commerce of any product to which this regulation applies, the manufacturer shall submit a production verification report to the Director, Noise Enforcement Division (EN–307), U.S. Environmental Protection Agency, Washington, D.C. 20460, unless product verification is waived in accordance with § 204.105–3(a) (1) and (2). A manufacturer may choose to submit separate production verification reports for different parts of his product line.

(b) The report shall be signed by an authorized representative of the manufacturer and shall include the following:

(1) The name, location and description of the manufacturer's noise emission test facilities which meet the specification of 204.104 and have been utilized to conduct testing pursuant to this subpart C. Except, that a test facility that has been described in a previous submission under this subpart need not again be described but must be identified as such.

(2) A description of normal predelivery maintenance procedures.

(3) Description of all product configurations, as determined in accordance with § 204.105–3, to be distributed in commerce by the manufacturer, including the sound level degradation factor for each configuration and a list identifying or defining any device or element of design (including its location and method of operation) incorporated into products for the purpose of noise control and any device that affects noise emission from the product and does not operate during the normal operating modes of the product. The manufacturer may satisfy the product configuration description requirements of this paragraph by submitting as part of the production-verification report a copy of his technical sales data literature that describes his product line including options: Provided, that this literature is supplemented with any additional information to fulfill the requirements of this section. If a manufacturer elects to production-verify pursuant to § 204.105–2(c) the configuration within each category, which is estimated to have the highest A-weighted sound level at the end of the specified AAP shall be identified. The manufacturer may estimate the average sound level based on his best technical judgment and/or data. The criteria used to estimate each sound level must be stated with the estimates.

(4) The following information for each noise emission test conducted:

(i) The completed data sheet required by § 204.104 for all official tests conducted in accordance with § 204.105–7 including, for each invalid test, the reasons for invalidation.

(ii) A completed description of any preparation, maintenance or testing which was performed on the test product and which will not be performed on all other production products.

(iii) The reason for replacement where a replacement machine was necessary, and test results, if any, for replaced machines.

(5) A completed description of the sound data acquisition system if other than those specified in § 204.104.

(6) The following statement and endorsement:

This report is submitted pursuant to section 6 and section 13 of the Noise Control Act of 1972. All testing for which data is reported herein is conducted in strict conformance with applicable regulations under 40 CFR Part 204 et. seq. All the data reported herein is a true and accurate representation of such testing. All other information reported herein is, to the best of _____ (company name) knowledge; true and accurate. I am aware of the penalties associated with violations of the Noise Control Act of 1972 and the regulations thereunder.

_____
(Authorized representative)

(c) Where a manufacturer elects to submit separate production-verification reports for portions of his product line as provided for in paragraph (a) of this section, information provided in previous reports need not be resubmitted; Except, that information necessary to update or make current previously submitted information must be submitted.

(d) Any change with respect to information reported pursuant to this subpart shall be reported as soon as the information becomes available.

(Sec. 13 of the Noise Control Act (42 U.S.C. 4912).)

§ 204.105–5 Test sample selection.

Test products of a configuration for which production-verification testing is required by § 204.105–2 shall be a product of the subject configuration which has been assembled using the manufacturer's normal production processes and which will be sold or offered for sale in commerce.

(Sec. 13 of the Noise Control Act (42 U.S.C. 4912).)

§ 204.105–6 Test preparation.

(a) Prior to the official test, the test product selected in accordance with § 204.105–5 shall not be prepared, tested, modified, adjusted, or maintained in any manner unless such adjustments, preparation, modification and/or tests are part of the manufacturer's prescribed manufacturing and inspection procedures, and are documented in the manufacturer's internal machine assembly and inspection procedures or unless such adjustments and/or tests are required or permitted under this subpart or are approved in advance by the Administrator. The manufacturer may perform adjustments, preparation, modification and/or tests normally performed at the port-of-entry by the manufacturer to prepare the machine for delivery to a dealer or customer: *Provided*, That such adjustments, preparation, modification or tests are documented in the production verification report.

(b) Equipment or fixtures necessary to conduct the test may be installed on the product: *Provided*, That such equipment or fixtures shall have no effect on the noise emissions of the machine as determined by measurement methodology.

(c) In the event of product malfunction (i.e., failure to start), the manufacturer may perform the maintenance that is necessary to enable the product to operate in a normal manner: *Provided*, That such maintenance is documented and reported in the final report prepared and submitted in accordance with this subpart.

(d) No quality control, quality assurance testing, assembly or selection procedures shall be used on the test product or any portion thereof, including parts and subassemblies, that will not be used during the production and assembly of all other products of the category which will be distributed in commerce, unless such procedures are required or permitted under this subpart or are approved in advance by the Administrator.

(Sec. 13 of the Noise Control Act (42 U.S.C. 4912).)

§ 204.105–7 Testing.

(a) The manufacturer shall conduct one valid test in accordance with the test procedures specified in § 204.104 of this subpart for each machine selected for verification testing.

(b) No maintenance will be performed on test machines except as provided for by § 204.105–6.

(c) In the event a product is unable to complete the noise test, the manufacturer may replace the product. Any replacement product will be a production product of the same configuration as the replaced product and will be subject to all the provisions of these regulations. Any replacement shall be reported in the production verification report including the reason for the replacement.

(d) In the event a product fails to comply with the standards of this subpart when tested in accordance with the procedures specified in paragraph (a) of this section, the manufacturer may proceed in accordance with § 204.105–2 (c) of this subpart.

(Sec. 13 of the Noise Control Act (42 U.S.C. 4912).)

§ 204.105–8 Labeling; compliance.

(a) (1) The manufacturer of any product subject to the standards prescribed in § 204.102 shall, at the time of manufacture, affix a permanent, legible label, of the type and in the manner described below, containing the information hereinafter provided, to all such machines to be distributed in commerce.

(2) A plastic or metal label shall be welded, riveted or otherwise permanently attached to a readily visible position.

(3) The label shall be affixed by the product manufacturer, who has verified such product, in such a manner that it cannot be removed without destroying or defacing the label, and shall not be affixed to any piece of equipment which is easily detached from such product.

(4) The label shall contain the following information lettered in the English language in block letters and numerals, which shall be of a color that contrasts with the background of the label:

(i) The label heading: Product Noise Emission Control Information;

(ii) Full corporate name and trademark of manufacturer;

(iii) Date of manufacture, which may consist of a serial number or code in those instances where records specified in section 204.103(a)(1)(iv) are maintained.

(iv) The statement:

This product, when new, is warranted not to exceed the applicable standard effective on (month/year) when tested as prescribed by USEPA. Tampering with any product noise control device or element of design (see owner's manual) or use of this product after such tampering is prohibited by Federal law.

(b) Any product manufactured solely for use outside the United States shall be clearly labeled "For Export Only".

(Sec. 13 of the Noise Control Act (42 U.S.C. 4912).)

§ 204.105–9 Addition of, changes to and deviation from a product configuration during the year.

(a) Any change to a configuration with respect to any of the parameters stated in § 204.105–3 shall constitute the addition of a new and separate configuration or category to the manufacturer's product line.

(b) (1) When a manufacturer introduces a new category or configuration to his product line, he shall proceed in accordance with § 204.105–2.

(2) If the configuration to be added can be grouped within a verified category, and the new configuration is estimated to have a lower sound pressure level than a previously verified configuration within the same category, the configuration shall be considered verified: Provided, that the manufacturer submits a report pursuant to section 204.105–4 with respect to such configuration.

(Sec. 13 of the Noise Control Act (42 U.S.C. 4912).)

§ 204.105–10 Production verification based on data from previous year.

Production verification of each configuration will be required at the beginning of each model year except that in certain instances, the Administrator, upon request by the manufacturer, may permit the use of production-verification data for a specific configuration from previous production-verification reports. Considerations relevant to his decision may include, but are not limited to:

(a) The level of the standard in effect for the model year in question;

(b) Performance based on production-verification data for previous years;

(c) Performance based on data obtained from selective enforcement testing during previous model years;

(d) The number and type of noise emission design changes incorporated in the new models that effect the noise emission level of that model.

(Sec. 13 of the Noise Control Act (42 U.S.C. 4912).)

§ 204.105–11 Cessation of distribution.

(a) If a category or configuration is found to be in nonconformity with these regulations by reason of failure to be properly production-verified, as required by § 204.105–2, the Administrator may issue an order to the manufacturer to cease to distribute in commerce products of that category or configuration: *Provided, however*, That such an order shall not be issued if the manufacturer has made a good faith attempt to properly production-verify the category configuration. The burden of establishing such good faith shall rest with the manufacturer.

(b) Any such order shall be issued after notice and opportunity for a hearing.

(Sec. 11, of the Noise Control Act (42 U.S.C. 4910).)

§ 204.106 Testing by the Administrator.

(a) (1) For the purpose of conducting production verification testing in lieu of the manufacturer or conducting selective enforcement auditing, the Administrator may require that any product tested or scheduled to be tested pursuant to these regulations or any untested products be submitted to him, at such place and time as he may designate.

(2) The Administrator may specify that he will conduct such testing at the manufacturer's facility, in which case instrumentation and equipment of the type required by these regulations shall be made available by the manufacturer for test operations. The administrator

may conduct such tests with his own equipment, which shall equal or exceed the performance specifications of the instrumentation or equipment specified in these regulations.

(b) (1) If, based on tests conducted by the EPA, or other relevant information, the Administrator determines that the test facility does not meet the requirements of § 204.104 (b) and (c), (including any alternate procedures that may be approved under § 204.104(j)), he will notify the manufacturer in writing of his determination and the reasons therefore.

(2) After any notification issued under paragraphs (b) (1) has taken effect, no data thereafter derived from such test facility will be acceptable for purposes of this subpart and the Administrator may issue an order to the manufacturer, with respect to the product category or configuration in question, to cease to distribute in commerce products of such category or configuration. Except that any such order shall be issued only after notice and opportunity for a hearing. Such notification may be included in any notification under paragraph (b) (1) of this section. A manufacturer may request that the Administrator grant a hearing; such request shall be made not later than 15 days, or other such period as may be allowed by the Administrator, subsequent to notification of the Administrator's intent to issue an order to cease to distribute.

(3) The manufacturer may request in writing that the Administrator reconsider the determination in (b) (1) of this section based on data or information which indicates that changes have been made to the test facility and such changes have resolved the reasons for disqualification.

(4) The Administrator will notify the manufacturer of his determination with regard to the requalification of the test facility within 10 days of the manufacturer's request for reconsideration pursuant to paragraph (b) (3) of this section.

(c) (1) Whenever the Administrator conducts a test on a test product, the results of that test shall constitute the official test data for that product.

(2) The Administrator may accept the manufacturer's test data in lieu of his data upon a showing by the manufacturer that the data, acquired under paragraph (a) are erroneous and that the manufacturer's data are correct.

(Secs. 11, 13 of the Noise Control Act (42 U.S.C. 4910, 4912).)

§ 204.107 Selective enforcement auditing requirements.

§ 204.107–1 Test request.

(a) The Administrator will request all testing under this subpart by means of a test request addressed to the manufacturer.

(b) The test requests will be signed by the Assistant Administrator for Enforcement or his designee. The test request will be delivered by an EPA Enforcement Officer to the plant manager or other responsible official as designated by the manufacturer.

(c) The test request will specify the product category or configuration selected for testing, the batch selected for testing, the batch size, the manufacturer's plant or storage facility from which the products shall be selected, and the time at which a product shall be selected. The test request will also provide for situations in which the selected configuration or category is unavailable for testing. The test request may include an alternative category or configuration selected for testing in the event that products of the first specified category or configuration are not available for testing because the products are not being manufactured at the specified plant, are not being manufactured during the specified time, or are not being stored at the specified plant or storage facility.

(d) Any manufacturer shall, upon receipt of the test request:

(1) If he produces less than 4 of the specified category or configuration of product per given period of time specified in the test request, test every product produced in two consecutive batches in accordance with these regulations and the conditions specified in the test request.

(i) If one or more of the products fails to meet the standard, the batch is rejected.

(ii) If one batch is rejected, the batch sequence is rejected.

(2) If he produces 4 or more of the specified category or configuration of product per given period of time as specified in the test request, selected and test a batch sample of machines from consecutively produced batches of the machine category or configuration specified in the test request in accordance with these regulations and the conditions specified in the test request.

(e) (1) Any testing conducted by the manufacturer pursuant to a test request shall be initiated within such period as is specified with the test request: Except, that such initiation may be delayed for increments of 24 hours or one business day where ambient test site weather conditions in any 24 hour period do not permit testing: *Provided*, That ambient test site weather conditions for that period are recorded.

(2) The manufacturer shall complete noise emission testing on a minimum of two products per day unless otherwise provided for by the Administrator or unless ambient test site conditions only permit the testing of a lesser number: *Provided*, That ambient test site weather conditions for that period are recorded.

(3) The manufacturer shall be allowed 24 hours to ship products from a batch sample from the assembly plant to the testing facility if the facility is not located at the plant or in the close proximity to the plant: Except, that the Administrator may approve more time based upon a request by the manufacturer accompanied by a satisfactory justification.

(f) The Administrator may issue an order to the manufacturer to cease to distribute into commerce products of a specified category or configuration being manufactured at a particular facility if:

(1) The manufacturer refuses to comply with the provisions of a test request issued by the Administrator pursuant to this section; or

(2) The manufacturer refuses to comply with any of the requirements of this section.

(g) A cease-to-distribute order shall not be issued under paragraph (f) of this section if such refusal is caused by conditions and circumstances outside the control of the manufacturer which renders it impossible to comply with the provisions of a test request or any other requirements of this section. Such conditions and circumstances shall include, but are not limited to, any uncontrollable factors which result in the temporary unavailability of equipment and personnel needed to conduct the required tests, such as equipment breakdown or failure, or illness of personnel, but shall not include failure of the manufacturer to adequately plan for and provide the equipment and personnel needed to conduct the tests. The manufacturer will bear the burden of establishing the presence of the conditions and circumstances required by this paragraph.

(h) Any such order shall be issued only after a notice and opportunity for a hearing.

(Sec. 6, 11, 13 of the Noise Control Act (42 U.S.C. 4910, 4912).)

§ 204.107–2 Test product selection.

(a) Products comprising the batch sample which are required to be tested pursuant to a test request in accordance with this subpart will be selected in the manner specified in the test request from a batch of products of the category or configuration specified in the test request. If the test request specifies that products comprising the batch sample must be selected randomly, the random selection will be achieved by sequentially numbering all of the products in the batch and then using a table of random numbers to select the number of products as specified in (c) of this section based on the batch size designated by the Administrator in the test request. An alternative random selection plan may be used by a manufacturer, provided that such a plan is approved by the Administrator. If the test request does not specify that test products must be randomly selected, the manufacturer shall select test products consecutively. The provisions of § 204.105–7 (b) (c) shall also pertain to this section:

(b) The Acceptable Quality Level is 10 percent. The appropriate sampling plans associated with the designated AQL are contained in Appendix I, Table II.

(c) The appropriate batch sample size will be determined by reference to Appendix I, Tables I and II. A code letter is obtained from Table I based on the batch size designated by the Administrator in a test request. The batch sample size will be equal to the maximum cumulative sample size for the appropriate code letter obtained from Table I plus an additional 10 percent rounded off to the next highest number.

(d) The products comprising the test sample will be selected randomly, the batch sample using the same random selection plan as in paragraph (a) of this section. Test sample size will be determined by using Table II.

(e) The test products of the category or configuration selected for testing shall have been assembled by the manufacturer for distribution in commerce using the manufacturer's normal production process.

(f) Unless otherwise indicated in the test request, the manufacturer will select the batch sample from the production batch next scheduled after receipt of the test request of the category or configuration specified in the test request.

(g) Unless otherwise indicated in the test request, the manufacturer shall select the product designated in the test request for testing.

(h) At their discretion, EPA Enforcement Officers, rather than the manufacturer, may select the products designated in the test request.

(i) The manufacturer will keep on hand all products in the batch sample until such time as the batch is accepted or rejected in accordance with § 2041.-07-6: Except, that products actually tested and found to be in conformance with these regulations need not be kept.

(Sec. 13 of the Noise Control Act, (42 U.S.C. 4912).)

§ 204.107–3 Test product preparation.

(a) Prior to the official test, the test product selected in accordance with section 204.107–2, will be prepared in accordance with section 204.105–6.

(Sec. 13 of the Noise Control Act, (42 U.S.C. 4912))

§ 204.107–4 Test procedures.

(a) The manufacturer shall conduct one valid test, in accordance with the test procedures specified in § 204.104 for each product selected for testing pursuant to this subpart.

(b) No maintenance will be performed on test products except as provided by § 204.107–3. In the event a product is unable to complete the emission test, the manufacturer may replace the product. Any replacement product will be a production product of the same configuration as the replaced product. It will be randomly selected from the batch sample and will be subject to all the provisions of these regulations.

(Sec. 13 of the Noise Control Act, (42 U.S.C. 4912))

§ 204.107–5 Reporting of test results.

(a) (1) The manufacturer shall submit a copy of the test report for all testing conducted pursuant to § 204.107 at the conclusion of each twenty-four period during which testing is done.

(2) For each test conducted the manufacturer will provide the following information:

(i) Configuration and category identification where applicable

(ii) Sound Level Degradation Factor

(iii) Type, year, make, assembly date, and model of product.

(iv) Product serial number

(v) Test results by serial numbers.

(3) The first test report for each batch sample will contain a listing of all serial numbers in that batch.

(b) In the case where an EPA Enforcement Officer is present during testing by this subpart, the written reports requested in paragraph (a) of this section may be given directly to the Enforcement Officer.

(c) Within five days after completion of testing of all products in a batch sample, the manufacturer shall submit to the Administrator a final report which will include the information required by the test request in the format stipulated in the test request in addition to the following:

(1) The name, location and description of the manufacturer's noise emission test facilities which meet the specifications of § 204.104 and were utilized to conduct testing reported pursuant to this section: Except, that a test facility that has been described in a previous submission under this subpart need not again be described but must be identified as such.

(2) A description of the random product selection method used; and the name of the person in charge of the random number selection, if the product test request specifies a random number product selection.

(3) The following information for each test conducted:

(i) The completed data sheet required by section 204.104 for all noise emission tests including, for each invalid test, the reason for invalidation.

(ii) A complete description of any modification, repair, preparation, maintenance, and/or testing which was performed on all other production products.

(iii) The test results for any replaced product.

(4) The following statement and endorsement:

This report is submitted pursuant to section 6 and section 13 of the Noise Control Act of 1972. All testing for which data is reported herein was conducted in strict conformance with applicable regulations under 40 CFR Part 204, et seq. All the data reported herein are a true and accurate representation of such testing. All other information reported herein is to the best of (_____) Company name knowledge, true and accurate. I am aware of the penalties associated with violations of the Noise Control Act of 1972 and the regulations thereunder.

_____
(authorized representative)

(Sec. 13 of the Noise Control Act, (42 U.S.C. 4912))

§ 204.107–6 Acceptance and rejection of batches.

(a) A failing product is one whose measured sound level is in excess of the sound level equal to the applicable noise emission standard set forth in § 204.102 minus the SLDF as determined in § 204.-108–4 for the category or configuration being tested.

(b) A batch from which a batch sample is selected will be accepted or rejected based upon the number of failing products in the batch sample. A sufficient number of test samples will be drawn from the batch sample until the cumulative number of failing products is less than or equal to the acceptance number, or greater than or equal to the rejection number appropriate for the cumulative number of machines tested. The acceptance and rejection number listed in Appendix I, Table II at appropriate code letter obtained according to § 204.107–2 will be used in determining whether the acceptance or rejection of a batch has occurred.

(c) Acceptance or rejection of a batch takes place when a decision that a product is a failing machine is made on the last product required to make a decision under paragraph (b) of this section.

(Sec. 13 of the Noise Control Act, (42 U.S.C. 4912))

§ 204.107–7 Acceptance and rejection of batch sequence.

(a) The manufacturer will continue to inspect consecutive batches until the batch sequence is accepted or rejected. The batch sequence will be accepted or rejected based on the number of rejected batches. A sufficient number of consecutive batches will be inspected until the cumulative number of rejected batches is less than or equal to the sequence acceptance number, or greater than or equal to the sequence rejection number appropriate for the number of batches inspected. The acceptance and rejection numbers listed in Appendix I, Table III at the appropriate code letter obtained according to § 204.107–2 will be used in determining whether the acceptance or rejection of a batch sequence has occurred.

(b) Acceptance or rejection of a batch sequence takes place when the decision is made on the last product required to make a decision under paragraph (a) of this section.

(c) If the batch sequence is accepted, the manufacturer will not be required to perform any additional testing on machines from subsequent batches pursuant to the initiating test request.

(d) The Administrator may terminate testing earlier than required in paragraph (b) based request by the manufacturer accompanied by voluntary cessation of distribution in commerce, from all plants of products of the configuration in question: *Provided*, That once production is reinitiated the manufacturer must take the action described in § 204.107–9 (a)(1) and (a)(2) prior to distribution in commerce of any product from any plant of the product category or configuration in question.

(Sec. 13 of the Noise control Act. (42 U.S.C. 2912))

§ 204.107–8 Continued testing.

(a) If a batch sequence is rejected in accordance with paragraph (b) of § 204.107–7, the Administrator may require continued 100 percent testing of

products of that category or configuration produced at that plant.

(b) The Administrator will notify the manufacturer in writing of his intent to require any 100 percent testing of products pursuant to paragraph (a) of this section.

(c) Any tested product which demonstrates conformance with the applicable standard may be distributed into commerce.

(d) Any knowing distribution into commerce of a product which does not comply with the applicable standards is a prohibited act.

(Sec. 13 of the Noise Control Act, (42 U.S.C. 4912))

§ 204.107–9 Prohibition of distribution in commerce; manufacturer's remedy.

(a) The Administrator will permit the cessation of continuous testing under § 204.107–8 once the manufacturer has taken the following actions:

(1) Submits a written report to the Administrator which identifies the reason for the noncompliance of the products, describes the problem, and describes the proposed quality control and/or quality assurance remedies to be taken by the manufacturer to correct the problem or follows the requirements for an engineering change pursuant to § 204.105–8; and

(2) Demonstrates that the specified product, category or configuration has passed a retest conducted in accordance with § 204.107 and the conditions specified in the initial test request.

(b) Any product failing the prescribed noise emission tests conducted pursuant to this Subpart C may not be distributed in commerce until necessary adjustments or repairs have been made and the product passes a retest.

(c) No products of a rejected batch which are still in the hands of the manufacturer may be distributed in commerce unless the manufacturer has demonstrated to the satisfaction of the Administrator that such products do in fact conform to the regulation: Except, that any machine that has been tested and does, in fact, conform with this regulation may be distributed in commerce.

(Secs. 11, 13 of the Noise Control Act, (42 U.S.C. 4910))

§ 204.108 In-use requirements.

§ 204.108–1 Warranty.

(a) The manufacturer of a product who is required to production verify under this part shall include in the owner's manual or any other information supplied to the ultimate purchaser, the following statement:

Noise Emissions Warranty

The manufacturer warrants to the first person who purchases this product for purposes other than resale and each subsequent purchaser that this product was designed, built and equipped to conform at the time of sale to such first purchaser with all applicable U.S. EPA noise control regulations.

This warranty is not limited to any particular part, component, or system of the product. Defects in the design, assembly, or in any part, component, or system of the product which, at the time of sale to such first purchaser, cause noise emission levels to exceed Federal standards are covered by this warranty for the life of the product.

(b) Not later than the date of submission of the production-verification report required by § 204.108–4, the manufacturer shall submit to the Administrator two (2) copies of the written noise emission warranty required by paragraph (a) of this section and two (2) copies of all other information provided to the ultimate purchaser which could reasonably be construed as impacting on the warranty.

(c) Not later than ten (10) days after dissemination, the manufacturer shall submit two (2) representative copies of all information of a general nature, or modifications thereto, which is provided to dealers, zone representatives, or other agents of the manufacturer regarding the administration and application of the noise emission warranty. Information regarding noise emission warranty claims which is provided to a dealer or representative in response to a particular warranty claim or dealer inquiry is not considered to be information of a general nature, if such information does not receive broad dissemination to dealers.

(d) All information required to be forwarded to the Administrator pursuant to this section shall be addressed to: Director, Noise Enforcement Division (EN–387), U.S. Environmental Protection Agency, Washington, D.C. 20460.

(Sec. 13 of the Noise Control Act, (42 U.S.C. 4912))

§ 204.108–2 Tampering.

(a) For each model year and for each configuration of products covered by this part, the manufacturer shall submit to the Administrator a list of those acts which, in the manufacturer's estimation, might be done to the product in use, on more than an occasional basis, and result in an increase in noise emission levels above the standards prescribed in section 204.102. The manufacturer should indicate, wherever possible, the amount of increase in noise emission level.

(b) The above information shall be submitted to the Administrator within adequate time prior to the introduction into commerce of each configuration to allow for the development and printing of tampering lists, as provided in paragraphs (c) and (d) of this section.

(c) On the basis of the above information, the Administrator will develop a list of acts which, in the Administrator's judgment, constitute the removal or the rendering inoperative, totally or partially, other than for purposes of maintenance, repair, or replacement, of noise control devices or elements of design of the product. This list shall be provided to the manufacturer by the Administrator within 30 days of the date on which the information required in paragraph (a) of this section is submitted by the manufacturer, and shall be included in the statement to the ultimate purchaser, as required by paragraph (d) (2) of this section. If the list is not provided by the Administrator within 30 days of the date on which the information required in paragraph (a) of this section is submitted, the manufacturer shall include only the statement in paragraph (d) (1) of this section, until such time as the list has been provided and the owner's manual is reprinted for other purposes.

(d) The manufacturer shall include in the owner's manual the following information:

(1) The statement:

TAMPERING WITH NOISE CONTROL SYSTEM PROHIBITED

Federal law prohibits the following acts or the causing thereof:

(1) The removal or rendering inoperative, by any person, other than for purposes of maintenance, repair, or replacement, of any device or element of design incorporated into any new product for the purpose of noise control, prior to its sale or delivery to the ultimate purchaser or while it is in use, or

(2) the use of the product after such device or element of design has been removed or rendered inoperative by any person.

(ii) The statement:

Among those acts included in the prohibition against tampering are the acts listed below.

Immediately following this statement, the manufacturer shall include the list developed by the Administrator under paragraph (c) of this section.

(e) Any act included in the list prepared pursuant to paragraph (c) of this section is presumed to constitute tampering; however, in any case in which a prescribed act has been committed and it can be shown that such act resulted in no increase in the A-weighted sound level of the product or that the product still meets the noise emission standard of section 204.102, such act will not constitute tampering.

(f) The provisions of this section are not intended to preclude any State or local jurisdiction from adopting and enforcing its own prohibitions against the removal or rendering inoperative of noise control systems on machines subject to this part.

(g) All information required by this section to be furnished to the Administrator shall be sent to the following address: Director, Noise Enforcement Division (EN–387), U.S. Environmental Protection Agency, Washington, D.C. 20460.

(Secs. 10, 13, of the Noise Control Act (42 U.S.C. 4909, 4912).

§ 204.108–3 Inspections for maintenance, use, and repair.

(a) (1) The manufacturer shall provide to the ultimate purchaser of each product covered by this subpart written instructions for the proper maintenance, use, and repair of the product in order to provide reasonable assurance of the elimination or minimization of noise emission degradation throughout the life of the product.

(2) The purpose of the instructions is to inform purchasers and mechanics of those acts necessary to reasonably assure

that degradation of noise emission levels is eliminated or minimized during the life of the product. Manufacturers shall prepare the instructions with this purpose in mind. The instructions shall be clear and, to the extent practicable, written in non-technical language.

(3) The instructions shall not be used to secure an unfair competitive advantage. They shall not restrict replacement equipment to original manufacturer equipment or service to dealer service, unless such manufacturer makes public the performance specifications on such equipment.

(b) For the purpose of encouraging proper maintenance, the manufacturer shall provide a record or log book which shall contain a schedule for the performance of all required noise emission control maintenance. Space shall be provided in this record book so that the purchaser can note what maintenance was done, by whom, where and when.

(c) Not later than the date of submission of the production verification report required by § 204.105–4, the manufacturer shall submit to the Administrator two (2) copies of the maintenance instructions (including the record book) required by paragraphs (a) and (b) of this section.

(d) The Administrator will require modifications to the instructions, if they are not sufficient to fulfill the requirements of paragraph (a) of this section.

(e) Information required to be submitted to the Administrator pursuant to this section, shall be sent to the following address: Director, Noise Enforcement Division (EN-387), U.S. Environmental Protection Agency, Washington, D.C. 20460.

(Sec. 13 of the Noise Control Act (42 U.S.C. 4912))

§ 204.108—4 Sound level degradation factor (SLDF) and retention of durability data.

(a) Each manufacturer responsible for compliance with the standards specified in § 204.102 shall develop a Sound Level Degradation Factor for each of his product configurations utilizing the records compiled under subsection (b). The SLDF is defined as the increase in A-weighted sound level, which the product configuration is projected to undergo during the specified AAP when the product is properly used and maintained.

(b) (1) The manufacturer shall establish and maintain records which demonstrate the increase in noise level which will occur for each product configuration during the specified AAP.

(2) The records may include, but need not be limited to, the following:

(i) Durability data and actual noise testing on critical noise producing or attenuating components.

(ii) Sound level deterioration curves on the entire product.

(iii) Data from products in actual use.

(c) The SLDF is to be used in all Production Verification testing and Selective Enforcement Audit testing to determine compliance.

(d) If the manufacturer determines the product's sound level will not increase during the AAP when properly used and maintained, the SLDF is 0.

(e) If a manufacturer determines that a product's sound level does not increase, but rather decreases with use, yielding a negative SLDF, he shall use zero as the SLDF in all testing under this regulation, but shall determine and record the actual SLDF.

(Sec. 13 of the Noise Control Act. (42 U.S.C. 4912))

§ 204.109 Recall of non-complying machines.

(a) Pursuant to section 11(d)(1) of the Act, the Administrator may issue an order to the manufacturer to recall and repair or modify any products distributed in commerce which are not in compliance with this subpart.

(b) A recall order issued pursuant to this section shall be based upon a determination by the Administrator that products of a specified category or configuration have been distributed in commerce which do not conform to the regulation. Such determination may be based on:

(1) A technical analysis of the noise emission characteristics of the category or configuration in question; or

(2) Any other relevant information including test data.

(c) For the purpose of this section, noise emissions may be measured by any test prescribed in § 204.104 for testing prior to sale or any other test which has been demonstrated to correlate with the prescribed test procedure.

(d) Any such order to recall shall be issued after notification and opportunity for a hearing.

(e) All costs, including labor and parts, associated with the recall and repair or modification of noncomplying products under this section shall be borne by the manufacturer.

(f) This section shall not limit the discretion of the Administrator to take any other actions which are authorized by the Act.

(Sec. 11 of the Noise Control Act. (42 U.S.C. 4910))

APPENDIX I

TABLE I—SAMPLE SIZE CODE LETTERS

Batch size	Code letter
4 to 8	A
9 to 15	B
16 to 25	C
26 and larger	D

TABLE II.—*Sampling for plans for inspecting batches*

Sample size code letter	Test sample	Test sample size	Cumulative test sample size	Batch inspection criteria: Acceptance number	Batch inspection criteria: Rejection number
A	1st	1	1	0	1
B	1st	2	2	0	2
C	1st	3	3	0	2
D	1st	5	5	1	2
	2d	5	10	3	4
	3d	5	15	5	6
	4th	5	20	7	8
	5th	5	25	9	10
	6th	5	30	11	12
	7th	5	35	13	14

[1] Batch acceptance not permitted at this sample size.

TABLE III.—*Batch sequence plans*[1]

Sample size code letter	Number batches	Cumulative number batches	Sequence inspection criteria: Acceptance number	Sequence inspection criteria: Rejection number
A	2	2	[2]	3
	3	4	1	3
	4	5	1	4
	5	6	2	4
	6	7	2	5
	7	8	3	5
	8	9	3	6
	9	10	4	6
	10	12	4	7
	11	13	5	7
	12	14	5	8
	13	15	6	8
	14	16	6	9
	15	17	7	9
	16	18	7	10
	17	19	8	10
	18	20	8	11
B	2	4	[2]	3
	3	6	0	3
	4	8	1	4
	5	10	1	4
	6	12	2	5
	7	14	2	5
	8	16	3	6
	9	18	3	6
	10	20	4	7
	11	22	4	7
	12	24	5	8
	13	26	5	8
	14	28	6	9
	15	30	6	9
	16	32	7	10
	17	34	7	10
	18	36	8	11
C	2	6	[2]	3
	3	9	0	3
	4	12	1	4
	5	15	2	5
	6	18	3	6
	7	21	4	7
	8	24	5	8
	9	27	6	9
	10	30	7	10
	11	33	8	11
	12	36	9	12
	13	39	10	13
	14	42	11	14
	15	45	12	15
	16	48	13	16
	17	51	14	17
	18	54	15	18
D	2	10	[2]	3
	3	15	0	3
	4	20	1	4
	5	25	2	5
	6	30	3	6
	7	35	4	7
	8	40	5	8
	9	45	6	9
	10	50	7	10
	11	55	8	11
	12	60	9	12
	13	65	10	13
	14	70	11	14
	15	75	12	15
	16	80	13	16
	17	85	14	17
	18	90	15	18

[1] Batch sequence rejection not permitted for this number of batches.
[2] Batch sequence acceptance not permitted for this number of batches.

TABLE IV

WHEEL AND CRAWLER TRACTOR NOISE EMISSION TEST DATA SHEET

Test No. _____

I. Machine Characteristics

Manufacturer: _____ Model No. _____ Serial No. _____
Engine Manufacturer: _____ Model No. _____ Serial No. _____
Rated H.P. _____ RPM; Maximum Governed Engine Speed at No. Load _____

Attached Simulated Major Components: Dozer Blade, Loader Bucket (Strike out inappropriate items)

Component Description: Dozer Blade; height _____ m; width _____ m
Loader Basket; Capacity _____ m^3

II. Test Conditions

Manufacturer's Test Site Identification and Location: _____
Measurement Surface Composition: _____
Ambient Sound Levels (a) Beginning of Test: _____ dBA
(b) End of Test: _____ dBA

III. Instrumentation

Microphone Manufacturer: _____ Model No. _____ Serial No. _____
Sound Level Meter Manufacturer: _____ Model No. _____ Serial No. _____
Acoustical Calibrator Manufacturer: _____ Model No. _____ Serial No. _____
Other: _____ Model No. _____ Serial No. _____

IV. Sound Level Data (dB Reference 2×10^{-5} pascals)

A-Weighted Sound Levels (dBA)

Stationary Machine Test	Machine Reference			Surface	Calculated Average Level	Average Plus SDEV	Notes
	Front	L.H. Side	Rear	R.H. Side			
High Idle No Load							
Test Engine Speed							
SDEV							

V. Test Personnel and Witnesses

Tested by: _____ Date: _____
Reported by: _____ Date: _____
Checked by: _____ Date: _____

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