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**INFLATION IMPACT STATEMENT
FOR
PORTABLE AIR COMPRESSOR REGULATION**

Executive Order 11821 requires the preparation of an Inflation Impact Statement (IIS) for all major standards and regulations or of major legislation. Attached is the IIS for the Portable Air Compressor Regulation signed into law December 31, 1975 and published in the Federal Register, January 14, 1976 (41FR2162).

**U.S. Environmental Protection Agency
Washington, D.C. 20460**

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INFLATION IMPACT STATEMENT FOR NOISE EMISSION REGULATION
FOR PORTABLE AIR COMPRESSOR

1. SUMMARY

The establishment of a 76 dBA at 7 meters noise standard for newly manufactured portable air compressors to be effective 24 months after promulgation of the regulation (36 months for units exceeding 250 cfm) gives rise to a series of costs which would otherwise not be incurred by the private and public sectors. To determine the magnitude and potential impact of these costs, the Office of Noise Abatement and Control of the U. S. EPA sponsored two contract studies.^{1,2}

The studies examined the structure of the industry, the estimated cost of quieting air compressors by type, the price elasticity of demand, the capital and annual costs of enforcement, the impact of enforcement on annual operating and maintenance costs and the impact of this regulation on a number of economic factors.

The following conclusions were reached in these studies:

- A. The aggregate list price of compressors may increase by 12.3 percent due to the imposition of the regulation.
- B. The average price elasticity of demand is estimated at -0.35 for price increases of less than 20 percent. Based on this, it is estimated that the first year reduction in unit sales may be no more than 4.3 percent. It is anticipated that cost

¹U. S. EPA, "A study to Determine the Economic Impact of Noise Emission Standards in the Construction Industry: Portable Air Compressors Report," June 1974.

²U. S. EPA, "Proposed New Portable Air Compressor Regulation: Supplementary Economic Impact Analysis."

increases experienced by manufacturers will be shifted to end users due to the industry supply curve that is highly elastic in the region of concern.

- C. Increased annual aggregate purchase costs for end user industries is estimated at \$25.4 million, using list prices for the product. * First year user annualized depreciation and capital costs are estimated at \$5.1 million.
- D. The impact of the regulation on annual maintenance and operating costs is judged to be negligible.

2. ECONOMIC IMPACT ESTIMATES

A. Incremental Costs of Compliance

The respective effective dates for this regulation (24 months for compressors under 250 cfm and 30 months for compressors over 250 cfm) permit compressor manufacturers to effect changes in design without undue hardships. Changes can thus be incorporated into the normal design cycle without incurring undue costs of compliance.

Included in the economic impact analysis of compressor noise control was an assessment of the expected average portable air compressor list price increase due to imposition of the regulation. A list price increase of 11.2 percent is

* Normally, discounts of approximately 25% of list price occur. Assuming such a discount, a purchase cost increase of the order of \$19 million is a more realistic estimate.

estimated for compressors with air flow capacities of 250 cfm or less. Compressors with capacities greater than 250 cfm may experience a list price increase of 13.0 percent. Considering the 82 percent/18 percent market distribution of these two compressor groups, an average overall compressor list price increase of 12.3 percent may result.

The upper bound annual aggregate increase in purchase cost, based on estimated 1977-1978 retail sales of \$206 million and an estimated list price increase of 12.3 percent, that may result from this regulatory action is estimated to be \$25.4 million.

Annualized user costs are estimated not to exceed \$5.1 million.

The impact of the regulation on annual maintenance and operating costs is judged to be negligible.

B. Incidence of Increased Costs

The structure of the air compressor industry is such that production cost increases are expected to be completely passed forward to the end consumer.

C. Effect on Prices of Goods

Imposition of the regulation may increase the retail list price of portable air compressors as follows:

All gasoline compressors	12.1 percent
Diesel compressors 250 cfm and lower	9.6 percent

Diesel compressors over 250 cfm	13, 0 percent
Average increase	12, 3 percent

D. Productivity Effects

No significant unemployment is expected to occur as the result of the portable air compressor regulation.

E. Indirect Effects - Foreign Trade

Exports are approximately 10 percent of total sales, and no changes in export patterns are expected because of these noise regulations. Imports make up approximately 7 percent of the market and no change is expected due to the standards being promulgated.

F. Impact on Energy

There is conflicting information with regard to increased fuel consumption that may be caused by this regulation. Some members of the portable air compressor industry claim that fuel consumption will increase by 3 to 8 percent; however, these members were unable to support their claims with factual data. Another manufacturer indicated that fuel consumption may actually decrease as a result of the use of more efficient fans to achieve fan noise reduction. The agency attempted to determine experimentally whether fuel consumption was actually affected by the application of quieting technology compressors. However, fuel

consumption differences (between a standard compressor and a quieted version of the same compressor) attributable to the quieting technology could not be separated from those attributable to manufacturing tolerance variances. In view of the foregoing, EPA is of the opinion that quiet portable air compressors use no more fuel than unquieted units.

3. IMPACT ON INFLATION

The annual aggregate increase in purchase cost, based on estimated 1977-1978 retail sales of \$206 million and an estimated list price increase of 12.3 percent that may result from this regulatory action, is estimated to be \$25.4 million.

First year user annualized costs are estimated at \$5.1 million.

The macroeconomic effect of these price increases is judged to be negligible when compared with the current or projected GNP levels.

The impact of the regulation on annual maintenance and operating costs is judged to be negligible.

Possible unit sales reduction resulting from increased prices are estimated to be no greater than the following:

Gasoline compressors	4.2 percent
Diesel compressors under 250 cfm	3.4 percent
Diesel compressors over 250 cfm	4.3 percent
Average reduction	4.3 percent

4. ENVIRONMENTAL IMPROVEMENTS

It is estimated that over 27.4 million people are exposed to construction site noise levels in excess of Ldn 55, the level identified as

protective of public health and welfare with an adequate margin of safety. Compliance with the regulation being promulgated is projected to reduce the severity and extensiveness of impact from construction site noise by approximately 14.7 percent from current levels; concomitant regulation of truck noise to either 83 or 75 dBA at 50 feet, for example, could provide total relief on the order of 37 to 46 percent, respectively. In terms of the acoustic energy contribution to construction site noise, compliance with the regulation will reduce the acoustic energy contribution of portable air compressors to approximately 1 percent of the total site noise. This will move the portable air compressor from the second most predominant construction site noise source to the 16th noisiest piece of construction equipment on a list of 20 pieces of equipment typically used at construction sites. In terms of the actual benefits from the regulation being promulgated, the regulation will reduce the extensiveness and severity of impact on the entire 27.4 million people exposed to noise levels above 55 Ldn at construction sites by 14.7 percent.

5. ALTERNATIVES CONSIDERED

Regulatory Alternatives

The results of studies performed to assess the health and welfare and economic impacts associated with the various standard and effective date options showed the following potential impacts:

1. list price increase ranging from 10 percent to 12.3 percent;
2. annual aggregate increase in purchase costs ranging from \$25.4 million for 76 dBA level to \$20.3 million for a 78 dBA level;

3. health and welfare benefits ranging from 14 percent to 14.7 percent reduction in noise impact on 27.4 million people exposed to construction site noise.

A 76 dBA standard effective in 24 months for compressors with air flow capacities less than or equal to 250 cfm, and in 30 months for compressors with capacities greater than 250 cfm, combines the best health and welfare benefit of 14.7 percent noise impact reduction with a potential maximum average list price increase of 12.3 percent and an annual aggregate increase in purchase cost of up to \$25.4 million.

More importantly, however, the 24 and 30 month effective dates for the 76 dBA standard allow adequate lead time to insure that no manufacturer will suffer undue hardship from loss of sales that might accrue from an inability to produce compressors complying with the standard if too short a lead time were established.

Accordingly, the following standard has been established for newly manufactured portable air compressors:

Standard	Effective Date	
76 dBA	75 to 250 cfm 24 months	> 250 cfm 30 months

Non-Regulatory Alternatives

Comprehensive studies were performed to evaluate portable air compressor noise emission levels requisite to protect the public health and welfare, taking into account the magnitude and conditions of use, the degree of noise reduction achievable through application of best available technology and the cost of compliance. The results of these studies

indicate that the regulation of portable air compressor noise is feasible. Accordingly, no non-regulatory alternative was considered.

6. IMPACT ON MATERIALS

The impact of this regulation on the demand and supply of material is expected to be considerably below the 3 percent annual consumption threshold and is not expected to have significant impact on any scarce materials.

It is hereby certified that the economic and inflationary impacts of this proposed regulation have been carefully evaluated in accordance with Executive Order 11821.

December 31, 1975

Acting Administrator