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SOL (MSHA) V. INTERNATIONAL MINERALS
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Federal Mine Safety and Health Review Commission
Office of Administrative Law Judges

SECRETARY OF LABOR, MINE SAFETY AND HEALTH ADMINISTRATION (MSHA), PETITIONER	CIVIL PENALTY PROCEEDING Docket No. SE 82-20-M A.C. No. 08-00551-05009
v.	Port Sutton
INTERNATIONAL MINERALS & CHEMICAL CORP., RESPONDENT	

DECISION

Appearances: Ken W. Welsch, Esq., Office of the Solicitor, U.S. Department of Labor, Atlanta, Georgia, for Petitioner William B. deMeza, Esq., Holland & Knight, Bradenton, Florida, and Howard E. Post., Esq., International Minerals Corporation, Northbrook, Illinois, for Respondent

Before: Judge Koutras

Statement of the Case

This is a civil penalty proceeding initiated by the petitioner against the respondent pursuant to section 110(a) of the Federal Mine Safety and Health Act of 1977, 30 U.S.C. 820(a), seeking civil penalty assessments for two alleged violations of the mandatory noise standards found at 30 CFR 55.50(b). Respondent filed a timely answer and a hearing was convened in Tampa, Florida, on June 7, 1983. The posthearing arguments and proposed findings and conclusions filed by the parties have been considered by me in the course of this decision.

Issues

The principal issues presented in this proceeding are (1) whether respondent has violated the provisions of the Act and the implementing regulatory standard as alleged in the proposal for assessment of civil penalties, and, if so, (2) the appropriate civil penalties to be assessed against the respondent for the

alleged violations based upon the criteria set forth in section 110(i) of the Act. Additional issues concerning engineering or administrative feasibility for compliance are identified and discussed herein.

In determining the amount of a civil penalty assessment, section 110(i) of the Act requires consideration of the following criteria: (1) the operator's history of previous violations, (2) the appropriateness of such penalty to the size of the business of the operator, (3) whether the operator was negligent, (4) the effect on the operator's ability to continue in business, (5) the gravity of the violation, and (6) the demonstrated good faith of the operator in attempting to achieve rapid compliance after notification of the violation.

Applicable Statutory and Regulatory Provisions

1. The Federal Mine Safety and Health Act of 1977, P.L. 95-164, effective March 9, 1978, 30 U.S.C. 801 et seq.

2. Mandatory standard 30 CFR 55.5-50, provides as follows:

> 55.5-50 Mandatory. (a) No employee shall be permitted an exposure to noise in excess of that specified in the table below. Noise level measurements shall be made using a sound level meter meeting specifications for type 2 meters contained in American National Standards Institute (ANSI) Standard S1.4-1971. "General Purpose Sound Level Meters," approved April 27, 1971, which is hereby incorporated by reference and made a part hereof, or by a dosimeter with similar accuracy. This publication may be obtained from the American National Standards Institute, Inc., 1430 Broadway, New York, New York 10018, or may be examined in any Metal and Nonmetal Mine Health and Safety District or Subdistrict Office of the Mine Safety and Health Administration.

PERMISSIBLE NOISE EXPOSURES

Duration per day, hours of exposure	Sound level dBA, slow response
8	90
6	92
4	95
3	97
2	100
1-1/2	102
1	105
1/2	110
1/4 or less	115

No exposure shall exceed 115 dBA. Impact or impulsive noises shall not exceed 140 dB, peak sound pressure level.

NOTE. When the daily exposure is composed of two or more periods of noise exposure at different levels, their combined effect shall be considered rather than the individual effect of each.

If the sum

$$(C1/T1) + (C2/T2) + . . . (Cn/Tn)$$

exceeds unity, then the mixed exposure shall be considered to exceed the permissible exposure Cn indicates the total time of exposure at a specified noise level, and Tn indicates the total time of exposure permitted at that level. Interpolation between tabulated values may be determined by the following formula:

$$\log T = 6.322 - 0.0602 SL$$

Where T is the time in hours and SL is the sound level in dBA.

(b) When employees' exposure exceeds that listed in the above table, feasible administrative or engineering controls shall be utilized. If such controls fail to reduce exposure to within permissible levels, personal protection equipment shall be provided and used to reduce sound levels to within the levels of the table.

Stipulations

The parties stipulated to the following (Tr. 7-9):

1. Respondent's products affect commerce and respondent is subject to the Act.

2. Respondent's gross business revenues for the fiscal year 1982 were in excess of one billion dollars, and the penalties proposed for the citations in question will not affect the respondent's ability to remain in business.

3. Respondent's history of prior citations is that stated in MSHA's computer print-out, exhibit P-1.

Discussion

Section 104(a) Citation No. 094927, November 26, 1980, cites an alleged violation of 30 CFR 55.5-50, and the condition or practice described by MSHA Inspector Arthur McLaughlin states:

> The car unloader was exposed to 2.01 times the permissible limit for noise for a full shift. Hearing protection was not being worn and all feasible engineering or administrative controls were not being utilized.

The inspector fixed the initial abatement time as December 1, 1980, and on December 3, 1980, he extended the abatement time to January 2, 1981, and noted as follows:

> Ear protection was being worn. Citation No. 094927 is modified from 55.5-50 to 55.5-50(b), which requires the development and installation of feasible engineering controls. The citation termination due date is also extended to 1-2-81 to allow time to implement control measures. Hearing protection shall be worn until the noise levels are reduced to permissible limits.

On January 13, 1981, the inspector extended the abatement further to February 13, 1981, and he noted as follows:

> Various noise control measures have been tried, but were not satisfactory. The problem had been referred to the engineering dept. The extension is granted to allow time for the engineering dept. to develop a control measure.

On March 9, 1981, the inspector extended the abatement time to May 15, 1981, and he noted the following:

> Citation 0094927 is extended to May 15, 1981 to allow MSHA's Pittsburgh Technical Support Center ample time to evaluate the noise problem and make a determination as to whether or not feasible engineering controls are available.

On May 27, 1981, the abatement time was further extended, and Inspector Charles D. Cox noted the following:

> This citation is extended as additional time is needed for feasible engineering studies by MSHA technical support group.

The abatement time was further extended by Inspector Cox on July 7, 1981, to August 10, 1981, for the reasons stated immediately above. Thereafter, on September 1, 1981 he terminated the citation for the following reasons:

> This citation is terminated pending development of additional means of noise attenuation on this equipment which may be required at a later date. In the meantime, suitable protective hearing equipment shall be worn when persons are exposed to this noise source.

Inspector McLaughlin issued a second section 104(a) Citation No. 094928, on November 26, 1980, citing a violation of 30 CFR 55.5-50, and the condition or practice is described as follows:

> The car unloader was exposed to 2.03 times the permissible limit for noise for a full shift. Hearing protection was not being worn and all feasible engineering or administrative controls were not being utilized.

Inspector McLaughlin modified the citation to reflect a citation to section 55.5-50(b), and both he and Inspector Cox extended the abatement times to and including August 1, 1981, and the reasons for these actions are the same as those noted above in connection with Citation No. 094927. On September 1, 1981, Inspector Cox terminated Citation No. 094928, for the same reasons that he terminated the previous citation.

Petitioner's proposal for assessment of civil penalties in this case was filed on December 21, 1981, and it asserts that respondent operates a mine at Hillsborough County, Florida, "which produces phosphate and its miners handle or otherwise work with and on goods, materials, supplies and equipment produced at or destined for points outside the State of Florida".

Respondent's answer was filed on January 18, 1982, and respondent does not dispute MSHA's jurisdictional assertion. With regard to the alleged violations, respondent's answer states the following defenses:

> a) there are no feasible administrative or engineering controls to reduce the noise level in the area referred to in the citations;
>
> b) the conduct described in the Citation is not in violation of the cited standard in

that Respondent has utilized several methods to reduce the noise level but they have all proved ineffective and, in compliance with the cited standard, Respondent provides and requires miners to wear personal protective equipment when working in the area referred to in the Citation;

c) the conduct described in the Citation was the result of unpreventable employee misconduct;

d) the condition described in the Citation is not such that it would significantly and substantially contribute to the cause and effect of a mine safety and health hazard;

e) the existence of the alleged condition was not the result of an unwarranted failure to comply with the cited standard.

MSHA's testimony and evidence

MSHA Inspector Arthur McLaughlin confirmed that he conducted an inspection at the respondent's phosphate plant on November 25, 1980, and he was accompanied by union and company representatives. He also confirmed that he issued two noise citations after determining that the noise exposure for two employees working in the plant railroad dumping building exceeded the required levels. He described the cited work location as an open-ended building about 100 feet long and 40 feet wide with a railroad track down the middle and an open grated floor below for the dumping of the mined materials which are transported to the building by railroad cars and dumped below and through the grated floor to a conveyor belt (Tr 12-17).

Mr. McLaughlin stated that the two workmen stationed in the work area use pneumatic wrenches to open the gates located at the bottom of the railroad cars, and that the men are on opposite sides of the car during the dumping process. He observed that the men were not wearing ear protection devices, and since the work area was loud, he concluded that the men were probably over-exposed to noise and he confirmed this preliminary "noise screening" by use of a sound millimeter. He returned to the plant the next day, November 26, 1980, to conduct a full noise compliance survey. He confirmed that he calibrated and checked his noise and sound level dosimeters, which he described as a General Radio Type 2, 1954, sound level meter, and installed the dosimeters on the two workmen. He sampled them for a little over seven hours and found that they were both over-exposed, and both were exposed to 95

decibles. His sound level meter readings were 103 for one man and 102 for the other, and neither man was wearing any ear protection on November 26. Mr. McLaughlin believed that the primary noise source was the pneumatic wrench when it was engaged to the railroad car door opening fitting (Tr. 17-23).

On cross-examination, Mr. McLaughlin stated that he performed no tests to differentiate the various noise sources present in the loading area in question, and he confirmed that he could not have made such tests with the equipment he had on the day of the inspection. He also confirmed that when he conducted the noise tests he did not have the two employees under continuous observation and he could not state whether the dosimeters were tampered with during the testing period (Tr. 23-26).

In response to bench questions, Mr. McLaughlin confirmed that had the cited workers worked only four hours they would have been in compliance, and he indicated that the dosimeter only registers noise levels in excess of 90 dBA's. He also confirmed that it was respondent's policy to make ear protection available to employees, but he did not know whether the cited employees were ever supplied with such ear protection, and he did not ask them (Tr. 27-28).

Mr. McLaughlin was of the view that in order to comply with section 55.5-50, a mine operator should conduct noise surveys, locate any problems, and then attempt to solve them. He believes that a 90 dBA noise limit is workable, and that for every 3 decibles of noise reduction, sound pressure diminishes by 50%. He confirmed that he would have issued the citations even if the two men had been wearing ear protection, and he would have cited the respondent for not using engineering controls to reduce the noise levels (Tr. 32).

Mr. McLaughlin stated that he recommended to the respondent that a barrier or acoustical wrapping with sound absorption materials be used to reduce the wrench noise. His recommendation that personal ear protection be supplied immediately was followed by the respondent (Tr. 33). He confirmed that the wrench operators work on both sides of the cars simultaneously, that they are exposed to the noise from each other's wrench, and when there is no unloading going on they would simply sit in the car unloading area (Tr. 34-35).

Mr. McLaughlin indicated that while the car shaker is another noise source, it is operated from a control booth and is insulated from noise level above 90 dBA's. He confirmed that the workers at the car unloading area worked eight hour shifts, three shifts a day, seven days a week, and that two

persons worked each shift. He did not sample other car unloader workers, and indicated that noncompliance on one shift would be inferred as noncompliance on the other shifts (Tr. 36). He estimated that 50 cars were unloaded on any given day and he had no reason to suspect that the pneumatic wrenches were out of compliance prior to the day of his inspection. He confirmed that the noise problems at the plant were isolated to the car unloading area, and he believed that the fact that the respondent installed insulation and a control booth to reduce the car shaker noise levels indicated that the respondent was aware of the fact that a noise problem existed (Tr. 38). Mr. McLaughlin indicated that he did not return to the plant after the citations were issued except for the purpose of extending the abatement times, and he believed that the wrenches in question were still being used (Tr. 39).

In response to further questions, Mr. McLaughlin stated that he saw no noise controls installed on the wrenches during the time he was at the plant and he did not observe the car shaker in operation. He had no actual knowledge of the number of daily car trips to the plant, and believed that all of the cars were of uniform size and construction. He was not aware of any additional noise citations at the plant since 1980 (Tr. 40-41).

Jerry W. Antel, Engineering Technician, MSHA's Physical Agents Branch, testified as to his background and experience in the field of noise and noise surveys, and he indicated that the purposes of such surveys is to identify noise sources and to make recommendations for noise reductions. He confirmed that he visited the respondent's Port Sutton Plant in April 1981 and May 1982, and that he did so at the request of MSHA's local field office. He confirmed that he conducted his noise survey at the metal building where the locomotive cars enter on a rail line to be unloaded onto a belt system which conveys the mined materials into the plant, and his mission was to investigate the cited pneumatic wrench noise and to make recommendations for improvements. During his April visit he observed two workers in the unloading area, and the locomotive operator was also present (Tr. 42-47).

Mr. Antel stated that during the April visit he observed dust collectors on one side if the unloading building, and car shakers mounted on the other. After calibrating the dosimeters, he placed them on the two workers, and he explained the procedures and the results of his survey (Tr. 47-51). He confirmed that the primary noise source was the pneumatic wrench which was used during the loading and unloading of the railroad cars (Tr. 51). He stated that the sound level meter readings during the opening of the cars was in the range

of 107 to 108 dBA, and 108 to 109 dBA during closing. The tape recordings revealed 104 to 105 dBA during opening, and 106 dBA in closing. The recordings also showed that when the wrench was running disengaged there were definite peaks in the mid-frequency, speech range of 500 hertz, 1000 hertz, 200 hertz. However, when the wrench was engaged, other areas came into play which flattened off this spectrum. There were no primary peaks. He identified exhibit no. 6 as the report he prepared on the first visit in April and he suggested an enclosure be constructed around the body of the wrench to muffle both the exhaust noise and the noise radiating from the wrench body. He also recommended a flat box be fitted over the chuck to deflect noise downward. In addition, he recommended three administrative controls. One, that the men should usually leave the area when cars came through; two, that the tram whistle should not be blown unless necessary; and three, that the flagmen generally avoid riding in the locomotive cab (Tr. 52-55).

Mr. Antel identified exhibit P-7 as some instructions for the construction of a wraparound muffler for the reduction of noise on the wrench in question, and he confirmed that this was part of his recommendations for reducing the noise on the wrench. He also indicated that the wraparound device was commercially available from the EAR Corporation in Indianapolis, and he believed that the use of this device would lead to a minimum 5 db reduction in noise, and that the device would cost about $65 in material and installation, and could be installed by one man in one day (Tr. 57). He also was of the view that the installation of this wraparound device would not lead to any maintenance or utilization problems, and he stated that he had installed the device on other pneumatic drills (Tr. 58-59).

With regard to his second visit in May 1982, Mr. Antel confirmed that he took note of the noise controls which the respondent installed on the wrenches in question. These included modifications to the wrenches by the installation of sheet steel barrier lines with acoustical foam to shield the wrench operators from the noise and a hose muffler attached at the exhaust end of the wrench to cut down the noise (Tr. 59-60). Mr. Antel identified certain photographs which he took during both of his visits, and they include the wrench before and after the acoustical treatment or improvements (exhibits P-5 and P-8).

Mr. Antel stated that the noise control improvements made by the respondent did not correspond to those which he had recommended, and using the same sample equipment he used during his April 1981

visit, he sampled the worker using the treated wrench and read an exposure of 192%, or 95 dBA over an eight hour sampling cycle, and an exposure of 453%, or 101 dBA, from the worker using such a wrench. The sound level meter indicated readings of 104, 106 dBA's for the untreated wrench, and 102 and 104 dba's for the treated wrench (Tr. 65).

Mr. Antel stated that he observed the utilization of the modified wrench for the entire shift on the second day of the visit. He estimated the noise controls reduced exposure by 5 dB's and noticed that the operator experienced minor difficulties in engagging the wrench because of the flap. He neither noticed nor was informed of any resulting maintenance problems. He approximated the material cost of IMC's improvements at $95 to $100, and the installation time to be one day. He considered the 5 dB reduction significant because it could increase the operation time of the equipment by two fold, and represented nearly 75% of the sound tolerance. Mr. Antel also related that MSHA's offer that a wrench be shiped to MSHA in Pittsburgh, to be modified and tested at MSHA's expense, with the respondent responsible for shipping, was rejected by the respondent (Tr. 66-69).

On cross examination, Mr. Antel conceded that some additional noise generated from the chucks engaged in the car and from the car itself, but that he did not "isolate or quantify" these other noise sources. He also conceded that the railroad cars were of varying sizes and construction, and he did not believe he had tested the treated and untreated wrenches on the same car door. Thus, the testing would not reflect variations between the wrenches nor between different types of cars. Of an estimated 50 cars that were opened and closed, he took measurements of ten to fifteen (Tr. 69-72).

Mr. Antel confirmed that the noise exposure indices for the two untreated wrenches for the full shift noted in the citations were 201% and 203%, and he noted that in his report of July 12, 1982 (exhibit P-9), he found under a similar situation that the untreated wrench generated noise at a level 453% of the permissible dosage. He explained the discrepancy in the test results as follows (Tr. 73-74):

> A. I believe that can be accounted for due to the variables, not only in the types of cars, but also in the number of cars that, in which the wrench is used. If I could refer back to my first visit, we witnessed about fifty cars, fifty-two cars that were being unloaded that day, but only on about half of these the wrench was used. And the other

half, they were used, the bar was used to open it. So certainly that would influence the exposures, the number of times the wrench was used.

Q. Then you are suggesting that to compare those two numbers is improper?

A. I am saying that one day might vary from another day, depending on the number of cars they are opening.

Q. You are suggesting then that those figures are invalid?

A. No, I am saying that those figures were valid for that day.

Q. You only tested them one day? On the follow-up visit?

A. The follow-up visit we did one full shift, sir.

Mr. Antel did not know how many days per month cars were normally unloaded, nor how many hours employees were exposed to the wrench noise, and therefore could not give a professional estimate as to the magnitude of potential harm to the employees. He agreed that a hypothetical wrench flap which obscured the operator's view of the connection points, or which had to be kicked into position, or an exhaust muffler which, because of severe working conditions, led to the wrench being repaired two or three times more than usual, would not be a feasible device. He also said that it was possible for the treated wrench to be used in compliance with the noise standards depending upon the amount of exposure received over varying periods of time (Tr. 76-77).

In response to further questions, Mr. Antel explained that because of the design of certain car doors, a bar was used to manually open the doors, and that this procedure produced no noise problem. He further stated that he did not know who owned or controlled the cars. He understood that the respondent's reluctance to ship a wrench to MSHA stemmed from that fact that there were normally three wrenches operating and two in the shop. Also, he had never heard of a device such as the wrench being used anywhere else. He conceded that one could not guarantee that once modifications were made on the wrench it would forever remain in compliance (Tr. 81-83).

Mr. Antel was of the opinion that a new wrench would cost $4400 or $4500, and he estimated that wrench modifications either through MSHA's recommendations or through the respondent's own techniques, would result in a noise reduction of five dB's. He confirmed that there was less noise during the opening of the locomotive car doors than there was during closing because the materials in the car tended to dampen the noise. He conceded that he did not know the labor costs incurred in maintaining the wrenches in their improved form (Tr. 95). He also explained that the two to three day installation time referred to in the answers to interrogatories included five or six hours of "curing time" needed for the molten urethane material to dry (Tr. 98). He confirmed that no recommendations have ever been made to do anything with the locomotive cars in terms of noise controls, and he conceded that if part of the noise problems came from the cars someone would need to address that problem, but that the respondent does not own the cars (Tr. 101-102). He conceded that the noise from the cars doors was a contributing factor (Tr. 102).

Respondent's testimony and evidence

Donald R. Erickson, plant maintenance supervisor, testified that he has tested the wrench in question and supervised the installation of various noise suppression devices on the wrench. These "treatments" consisted of a steel plate which was added to the frame of the machine extending to the toe plate, a box fitted over the wrench bit cover, and a hose muffler adapted to the exhaust port. Because of the differences between the wrenches used at the plant, any modifications would have to be specially fabricated to fit each individual machine. He confirmed that the respondent did not modify all of the five wrenches used at the plant, and he estimated that it took 32 man hours to treat one wrench. He also estimated the cost of materials and labor for one wrench to be approximately $750. He also stated that increased maintenance costs would result after each wrench was modified because such modifications would result in the wrench being required to be serviced two or three times more than normal because of the modifications. Specifically, he cited the hose adapter for the exhaust muffler on the modified wrench, and he estimated that it would have to be replaced nine times a year at a cost of $50 for each replacement installation. He also stated that the rear housing on each of the wrenches would have to be replaced three times a year at a cost of $650 each time it was replaced on a single wrench. He concluded that the total costs in labor and materials for the five modified wrenches would approximate $19,500 a year (Tr. 105-119).

On cross examination, Mr. Erickson confirmed that only one wrench had actually been modified, and that he supervised

the work, but did not know who had made the actual modification design or recommendation (Tr. 120). He conceded that with the exception of the wrench muffler, the material used to modify the one wrench was available in the plant shop or was borrowed from another job. He also confirmed that routine maintenance work on the wrenches was performed by a contract maintenance vendor. He also confirmed that the labor and maintenance costs which he testified to concerning the one wrench which was modified was based on his experience with the wrench which was modified for test purposes, but he could not state how long the testing period lasted (Tr. 130).

In response to further questions, Mr. Erickson stated that the modified wrench was tested on four different operational occasions, and that during these tests the wrench operators expressed a desire to have the bit cover shroud and the bottom deflector removed from the wrench because it got in their way while they were operatint it. Conceding that he had no knowledge of the actual test results, he did confirm that the employees who operated the wrench expressed a preference to use the wrench in its original untreated form (Tr. 135-138).

Mr. Erickson stated that the wrench supplier was asked to inquire of the manufacturer as to whether or not muffler or other noise controls could be installed on the machine, but that the response was negative (Tr. 142). He speculated that if one wrench were shipped to MSHA for prolonged testing, this would affect production because the initial dumping process by use of the wrenches was a critical part of the plant's production process. This was particularly true when one or more of the wrenches are down for maintenance (Tr. 152). He confirmed that the wrenches were sent to the maintenance vendor at least once a month for routine maintenance and would remain there for a week to a month. All of the wrenches in use at the plant are approximately two to four years old. Although Mr. Erickson could not state a routine maintenance estimate for an untreated wrench, he did indicate that the vendor's bills rarely were for less than $175 to $200 for each trip to the shop (Tr. 154). He agreed that each new wrench probably cost in the area of $4500 each (Tr. 156). He confirmed that he was not present when the treated wrench was tested at the work site, and had no knowledge of any of the test procedures (Tr. 157).

Eugene I. Rowell, respondent's safety supervisor, testified as to his background and eight to nine years' experience in industrial safety and hygiene, including conducting noise surveys and using sound level meters and dosimeters (Tr. 159-161). He stated that shipments of rock to Port Sutton came in so

erratically that he was unable to guess at how many days per month unloading took place. However, he did estimate that an average of 18 to 20 cars per day were unloaded during the first shifts, and the cars were of varying size and design. Some could only be opened manually with a bar, and others had lower hoppers. In a full day, the workers might spend four to six hours unloading fifty to sixty cars. Only when the cars doors were being opened were the pneumatic wrenches utilized (TR. 164).

Mr. Rowell stated that the lead flagman had radio contact with the train engineer and was responsible for the recovery of cars which needed to be dumped, storing them after unloading, and opening the car doors on his side of the track. If time allowed, crew members were often assigned to other duties until a new shipment arrived. At times, three days passed without a single car being unloaded, and he added that he had never seen the shaker used in the rock unloading during his three years at the plant (Tr. 166).

Mr. Rowell described the employees' hearing conservation program at the Port Sutton facility. All workers involved in the unloading process were required to wear hearing protection, and they received some training in noise hazards as part of a mandatory MSHA course. Mr. Rowell approximated the weight of one pneumatic wrench to be 130 pounds. However, any sound treatment equipment would add 20 to 30 pounds extra weight to each wrench (Tr. 169). He further indicated that this additional weight would enhance the likelihood of back injury among the operators, and that the modifications would also obscure a worker's view of the wrench bit when he tried to insert it into the car door. An employee's attempt to operate the wrench without a secure connection could lead to the bit flying off and injuring someone (Tr. 170).

Mr. Rowell recalled that, in response to the MSHA citations, plant management conducted noise tests on four or five occasions, and he briefly described some of the testing. He reiterated the potential hazards which would result from decreased visibility on a treated wrench due to the flap covering the coupling. With regard to administrative controls for noise reduction, he stated that the existing union contract would frustrate any plan for personnel rotation, and that it would cost more money to add a part-time crew. The company does not own the railroad cars, and therefore it lacked the ability to modify their design. Mr. Rowell also discussed the dangers of using the car bar as an alternative to the pneumatic wrench, and indicated that one reason for the adoption of the wrench was to avoid the frequency of bar related accidents (Tr. 182-187).

Mr. Rowell estimated that the ear plugs supplied to the employees reduced the sound level 188 by 15 or 20 dBA. The annual cost for plugs would be about $20 or $30, while ear muffs sold for fourteen or fifteen dollars a pair. When asked if the company had consulted the manufacturers on the

subject of noise control, he replied that the manufacturer had actually requested the company to pass along its findings as they did not have any answers. Mr. Rowell also confirmed that he was unaware of any feasible engineering or administrative solutions for ameliorating the noise problem (Tr. 188).

On cross examination, Mr. Rowell denied that either he or his supervisor had been aware of the noise problem in the unloading area, and he could recall no noise surveys being conducted prior to the MSHA inspection. The employees were instructed in their training classes that whenever they felt a need for hearing protection or sound tests in their work area, they were to notify their supervisor or the safety department, who would then supply the protection and conduct the tests. Although he did not know of any other sections with noise problems, he stated that there were some workers who did choose to wear hearing protection (Tr. 189-190).

With regard to the company noise surveys, (exhibits R-8 and R-9), Mr. Rowell confirmed that he used a Quest Type 2 sound level meter, but that no dosimeters were used. He confirmed that he was not familiar with the error factor on the particular sound level meter used. He also confirmed that he accompanied Mr. Antel on both surveys, and in the 1982 testing took samples at the same time as the MSHA personnel. He agreed that there was about a five dBA reduction on the treated wrench, but was not sure if that was reflected in the company survey report, exhibit R-8. Nor was he sure how that figure was arrived at, and he admitted not knowing exactly how much weight would be added to the wrench because of the noise controls. He conceded that not all of the controls installed on the wrench corresponded to those suggested by MSHA. Mr. Rowell confirmed that he took the readings for the May 26, 1982, survey which was incorporated as respondent's exhibit no. 9, but he was unable to explain why Car. No. 5 emitted less noise with an untreated wrench then with a treated one (Tr. 193-203).

In response to further questions, Mr. Rowell stated that the company had at one time considered purchasing a hydraulic torque wrench to keep the work environment quieter, but did not do so because of certain safety factors. He agreed that the claimed 20 dBA noise reduction through the use of ear plugs was simply the manufacturer's claim, and that this reduction may not be accurate at the actual work locations (Tr. 212-217).

Richard Gullickson, Industrial Hygienist, testified that he has been in the respondent's employ for almost 15 years, 12 of which were as a professionally certified industrial hygienist.

He testified as to his professional background, and confirmed that he held a college B.S. Degree in chemistry and that he had participated in noise surveys and testing (Tr. 235-240). He was aware of the events surrounding the issuance of the citations in question and confirmed that he was familiar with the design, operation, and uses made of the cited pneumatic wrenches, including the modifications which were made during the past two years. Although he personally did not test the treated and untreated wrenches, he was familiar with the tests and the results, and in most cases the testing was done under his direction (Tr. 240).

Mr. Gullickson disagreed with MSHA Inspector McLaughlin's position that the pneumatic wrench was the primary noise source in the unloading facility. He did not believe that his measurements revealed the degree of noise reduction on the treated wrench as indicated by the MSHA inspector. Although he lacked supportive data, he advanced the notion that the longer a wrench was used, the quieter it became due to wear and refurbishing and he believed that this was why the wrenches seemed quieter after they were treated. Also, he claimed that MSHA tested different wrenches without determining what their individual noise levels were with the same treatment. Because of a possible ten decibel, or ten-fold, difference between various cars, he focused his experiments on only two cars. In some cases the treated wrench was higher in noise intensity than the untreated wrench, but he did not regard it as noisier, and thought that the contrast reflected two different wrenches with different intensities (Tr. 242-245).

With regard to MSHA's testing in May 1982, Mr. Gullickson expressed no quarrel with the scientific validity of MSHA's testing methods. However, he did express concern over the fact that the noise level measurements were made on two different untreated wrenches which were not of the same noise levels. As an example, he cited the April 1981, test results where the lead flagman averaged 90.2 decibles and the flagman averaged 95.4, both from untreated wrenches. He believed that it was critical to test the same wrench on the same car because the cars had up to ten decibel differences in their noise, which translated to a ten-fold difference in noise energy (Tr. 249).

Mr. Gullickson rejected MSHA's contention that scientifically valid conclusions could be drawn from an experiment in which a number of wrenches were tested with a certain number of cars and then simply averaged out. He also doubted the validity of MSHA's reading of 453% with the noise dosimeter in May 1982, because measurements taken on other occasions indicated that the noise exposure index of the untreated wrenches should be higher than 200% (Tr. 251-252). With regard to the four decibel variation detected between the treated versus the untreated wrench,

Mr. Gullickson pointed out differences in noise intensity ranging as high as ten-fold, which he attributed to disparate car designs. He believed that, with a small enough sample, it was conceivable that differences between rail cars would override the four dBA disparity. He regarded the vibration of the rail cars as the only significant source of noise, and therefore, wrench modification would be ineffective to reduce noise. In his opinion, noise reduction down to the 90 dBA time-weighted average was not feasible using MSHA's recommendations or through any other engineering innovation. Even if all the wrenches were treated, he believed that employees would still need to wear hearing protection (Tr. 260-261).

On cross examination, Mr. Gullickson reiterated that if properly fitted and worn, personal ear protection would reduce excessive noise exposure (Tr. 265). He confirmed that ear plugs and muffs are available at the plant, and he generally discussed the noise survey studies conducted at the plant, the results of which are recorded in the reports, exhibits R-8 and R-9 (Tr. 269). In response to a hypothetical, he stated that if there were two equivalent noise sources and one was reduced by 12 dBA, the overall noise exposure would be diminished by 3 decibels, or fifty percent (Tr. 272). Even if a totally silent wrench could theoretically be designed, he believed the noise problem would not be significantly affected due to the fact that the car doors were the major source of noise (Tr. 273). He also stated that the noise exposure would be less if a car bar was used because its impact would be less than that of a wrench, but he conceded that the pneumatic wrenches did contribute to the noise level. He further testified that the 114 decibel locomotive whistle would have to sound for 15 minutes a day to be out of compliance, as opposed to an isolated ten second blast (Tr. 274-277).

Procedural ruling

As part of his post-hearing brief, petitioner's counsel included as an "Exhibit A" certain tabular compilations purportedly reporting the results of certain noise test data not previously made a part of the evidentiary hearing record. By letter filed September 9, 1983, respondent's counsel objected to the document and moved that it not be considered by me as part of my decision in this case. Subsequently, by letter filed September 23, 1983, in response to the respondent's objections, petitioner's counsel withdrew the exhibit and requested that it not be considered in my decision in this case. Under the circumstances, petitioner's request to withdraw the document IS GRANTED, and I have not considered it in the course of this decision.

Findings and Conclusions

Respondent's Port Sutton facility unloads phosphate rock from its various mine sites for processing, storage, or shipment to customers, and the facility employs approximately 83 employees. The phosphate rock is unloaded from railroad hopper cars at the "dumping shed", an open-ended metal fabricated building approximately 100 feet long by 40 feet wide with a railroad track running through the center. The railroad cars are pulled through the building by a locomotive. After each car is placed at the unloading point, the material is unloaded from the bottom of the car and it drops through a grate in the floor under the cars to a belt conveyor system underneath the grate for transportation to the main plant for drying and storage.

The crew involved in the dumping or unloading process consists of three employees. The locomotive engineer is responsible for operating the locomotive to pull the railroad hopper cars into position over the dumping grates. The lead flagman assists in positioning the railroad cars over the grates, through radio communications with the engineer, and opens the hopper car doors on one side of the dumping shed. The flagman opens the railroad hopper car doors on the opposite side of the dumping shed. The flagman opens the railroad hopper car doors on the opposite side of the dumping shed opposite from the lead flagman. There are three crews available for working three shifts, seven days a week. The number of cars dumped on any given shift vary. On the day of the inspection, the inspector stated approximately 50 cars were dumped on one shift, and respondent's witnesses estimated that on a yearly average approximately 18 to 20 cars per shift are dumped.

The lead flagman and flagman use pneumatic impact wrenches to open and close the hopper car doors having rack-and-pinion mechanisms. A square "bit" on the end of a pneumatic wrench is engaged with the socket on the hopper car door pinion and the impact wrench is activated, causing the bit and pinion assembly to rotate and move the hopper car door which is attached to the rack. The doors can be opened or closed by adjusting the pneumatic wrench to rotate the bit and pinion assembly either clockwise or counter-clockwise. On some cars, a bar has to be used because the doors are not adapted for the pneumatic wrench.

The dumping shed must normally have three pneumatic wrenches in operating condition at all times. One wrench is located at the lead flagman's work station on one side of the shed and tracks; that wrench can be moved along the

railroad tracks the entire length of the dumping shed. Two wrenches are necessary on the opposite flagman's side of the shed, because a concrete partition perpendicular to the railroad track prohibits movement of a single wrench along the entire length of the dumping shed. Any of the wrenches can open any railroad car's rack-and-pinion mechanisms.

Each of the pneumatic wrenches is approximately four feet high, two feet wide, and four feet long (including the bit). The pneumatic impact motor, contained in a cylindrical housing approximately two feet in length, is mounted between two rubber-tired wheels that give the wrenches their mobility. A bit-directional control rod (allowing the operator to select clockwise or counter-clockwise rotation of the bit) extends directly upward from the top of the pneumatic motor housing. The power control for the pneumatic wrench is located on the right handlebar assembly. The wrenches have approximately four inches ground clearance. Each wrench weighs approximately 130 pounds and is connected by a long hose to an air compressor which is located outside the dumping shed. The bit of the pneumatic wrench rotates at approximately 1500 rpm when unconnected to a railroad car; under "load" conditions, that is, when connected to a railroad car door pinion socket, the wrench bit rotates at approximately 10 rpm. The wrenches do not have noise-suppression devices supplied by the manufacturer. (Photographs of the wrench are included as part of the record).

Inspector McLaughlin visited the Port Sutton facility on November 25 and 26, 1980. The first day was devoted to a general scheduled inspection, and after determining that the unloading area may have a noise problem, Mr. McLaughlin returned to the facility the next day and conducted a complete noise survey using dosimeters and a sound level meter. (A dosimeter measures accumulated exposure to noise over a measured period of time, while a sound level meter measures noise at any instant in time). Mr. McLaughlin calibrated the dosimeters, and properly placed them on the lead flagman and flagman who were working in the unloading shed area. The dosimeters were used to measure the noise exposure of the two employees for a full working shift, and during the course of the shift Mr. McLaughlin returned to the shed area four times to take noise level readings with the sound level meter during the opening and closing of the car doors.

The two employees sampled by dosimeter by Mr. McLaughlin on November 26, were found to be exposed to 95 dBA, which is equivalent to 201% and 203% of the allowable regulatory maximum noise exposure, or 2.01 and 2.03 times the allowable noise exposure. Mandatory standard section 55.5-50 limits employee exposure to less than 90 dBA for an eight hour duration, and

for employees exposed to 95 dBA, the standard limits the duration of exposure to four hours. At the time of the inspection, the employees were not wearing any hearing protection and Mr. McLaughlin observed no noise controls on the pneumatic wrenches operated by the sampled employees.

As a result of the November 26, noise sampling at the unloading area, Mr. McLaughlin issued two section 104(a) citations citing the respondent with violations of section 55.5-50(b), and as noted earlier in this decision the abatement times were extended several times and the citations finally terminated on September 1, 1981.

The respondent concedes that the two cited employees were not wearing personal hearing protection when the citations were issued, and that on that particular day, the cited employees working at the dumping operation were exposed to noise in excess of the regulatory maximum. Respondent also admits that it is appropriate for me to find it liable for civil penalties for the two violations, and that it cannot contest the citations nor a proposed penalty assessment insofar as petitioner seeks sanctions only for failure to wear personal hearing protection on November 26, 1980.

On the question of whether feasible engineering or administrative controls exist for the abatement of the noise levels described in the citations, respondent takes the position that neither the noise controls that it has implemented or those recommended by the petitioner are "feasible" as that term has been statutorily and judicially defined. Respondent maintains that none of the controls (whether implemented or merely recommended) have been proved effective in reducing the total noise of the unloading operation, have been shown to be economically feasible, or have survived a cost-benefit analysis.

The dispute in this case arises on the question as to whether the petitioner has established that feasible engineering controls are available to bring the respondent within compliance, and whether or not the respondent has implemented these controls in good faith so as to come within the requirements of the standard. Respondent takes the position that it has acted in good faith, and that it has made an attempt to implement MSHA's recommendations, as well as its own, but that they are not feasible to achieve compliance. On the other hand, petitioner takes the position that even though its recommendations, as well as the actions taken by the respondent acting on its own initiative, do not achieve total compliance with the standard, respondent is nonetheless obligated to implement them.

Citing Judge Morris' decision in MSHA v. N.A. Degerstrom, 5 FMSHRC 637, April 5, 1983, petitioner submits that in order to establish a violation of section 55.5-50, it must show that (1) the respondent's employees are exposed to noise levels in excess of those permitted by the standard; (2) there are, in general, technologically feasible engineering or administrative controls available which will reduce the noise; and (3) provide a rough estimate as to the cost of implementing the controls. Petitioner submits that it has made out a prima facie case.

Assuming that it can establish that the noise exposure measured by the inspector exceeded the allowable limits, petitioner asserts that the gravamen of the violations was that the respondent failed to institute or to attempt to institute any "feasible administrative or engineering controls to reduce noise exposure in the unloading area". Other than requiring employees to wear hearing protection, which was not done at the time of the citations, petitioner asserts that the respondent has still not instituted any controls to reduce the noise exposure. Although conceding that the respondent had modified one of its wrenches and conducted some tests, petitioner maintains that the modifications were not adopted. Petitioner advances the notion that since its studies have shown that some noise reduction has been achieved, respondent is obligated to implement them, even though they may not result in enough noise abatement to bring the respondent within the requirements of the cited standard.

At page 17 of its post-hearing brief, petitioner cites Judge Morris' decision in MSHA v. N.A. Degerstrom, 5 FMSHRC 637, April 5, 1983, in support of its argument that any feasibility consideration of noise controls to reduce employee exposure to excessive noise precludes the weighing of costs and benefits, and that the phrase "feasible" should be construed to mean "capable of being done" or "achievable" without regard to whether or not any recommended controls will reduce the noise to within the permissible limits. All that is required, suggests petitioner, is that some significant reduction is achieved, regardless of whether such reduction results in total and full compliance with the requirements of section 55.5-50. In support of its argument, petitioner states that the consideration of whether the cost of a control is wholly disproportionate to the benefits does not involve a cost-benefit analysis or the kind of weighing of costs and benefits involved in such an analysis. Petitioner suggests there is no need to calculate and quantify all the conveivable costs and benefits to determine where the balance lies. Instead, it is only

necessary to arrive at a general estimate of the cost and to ascertain that some measurable benefits can be expected to result. In considering the benefits, it is not necessary to prove that the results to be achieved by the control will, in fact, promote the purposes of the regulation or statute; the regulation or statute itself embodies that determination. Petitioner asserts that the question is whether the control can be expected to achieve any significant results and whether the costs are so great that it would be irrational to require the use of the control to achieve those results.

Aside from the fact that Judge Morris' decision in N.A. Degerstrom is not binding on me, I take note of the fact that he relied on several cases decided under the Occupational Safety and Health Act, as well as the legislative history of that statute in determining the meaning and application of the phrase "feasible". He also noted that "the law on this point continues in a state of flux". In short, he relies on an interpretation by OSHRC, as further refined by the Courts, to support his findings and conclusions in N.A. Degerstrom. This I decline to do.

Petitioner also relies on Judge Morris' decision in Jet Asphalt and Rock Co., 3 FMSHRC 940, April 14, 1981, where he construed section 55.5-50 as requiring the implementation of feasible controls in the event of excessive exposure regardless of whether such implementation would guarantee reduction of the noise to within the permissible levels. After review of Judge Morris' decision, my conclusion is that he simply held that a companion mandatory standard (56.5-50) requires an operator to explore the feasibility of administrative or engineering noise controls before relying on personal protective equipment, and that the mere use of ear plugs is not an absolute defense. I agree with Judge Morris' conclusion that "what I'm trying to say is that the first thing to be considered is administrative or engineering controls", 4 FMSHRC 945. However, I reject petitioner's attempts to read anything else into his decision, and I reject any notion that section 56.5-50 permits anything less than full compliance with the clear language of the standard. The second sentence of section 56.5-50, clearly permits the use of personal protection equipment in the event feasible administrative or engineering controls fail to reduce any noise exposure to within permissible levels. The permissible levels are those stated in the standard, and the standard makes no allowances or provisions for so-called "improvements" or "near" or "close to" compliance with the required noise levels. If the Secretary wishes to change or alter the standard he is free to do so through proper rule making, but I reject his attempts to do so in this proceeding.

With regard to any adverse economic impact on the respondent, I cannot conclude that the cost factors discussed on the record in this case would have any adverse impact on the respondent. Assuming that the engineering noise suppression methods advanced by both the respondent and MSHA are proved workable, I seriously doubt that the respondent would suffer economically. As a matter of fact, at page five of its posthearing arguments, respondent states that "Although MSHA's recommended noise controls are neither harmful nor costly, neither are they especially effective". Thus, the question presented is whether the engineering recommendations are cost effective. In other words, if it cannot be established through credible evidence that the implementation of the engineering methods explored in this case are feasible and realistically achievable, then respondent need not go through needless expenditures to implement them. On the facts of this case, I believe the critical question presented is whether respondent has explored all available feasible engineering and administrative noise controls to bring it into compliance with the requirements of the cited standard. As part of that determination, I cannot conclude that the estimated costs of "treating" each of the five wrenches which respondent has available at any given time is all that critical. What is critical is whether the "treated" wrench will do the job. Petitioner suggests that it has established that the results of the "treated" wrench tests clearly establish a reduction in noise exposure and that respondent should not be allowed to abandon this partial solution to the problem simply because it does not believe that total abatement can be achieved.

The thrust of the petitioner's case is the assertion that the May 1982, tests conducted by Mr. Antel (exhibit P-9), conclusively demonstrates an average noise reduction with the treated wrench of 4.5 dBA in closing and 5.1 dBA in opening the railroad car doors. Petitioner relies on Mr. Antel's testimony that this average reduction in the noise level was shown from tests on 10 to 15 railroad cars (Tr. 72), and that dosimeter readings he took for the employee's full shift showed a reduction of 6 dBA when using the treated wrench (Tr. 64). However, a closer examination of Mr. Antel's testimony reflects that some 50 cars passed through the unloading area at the time of the testing, that they varied in size and construction, that the treated and untreated wrenches were never tested on the same car doors, that measurements were only taken from 10 to 15 cars, and that the wrenches were not compared, one to the other on the same railroad car. In short, Mr. Antel conceded that his testing procedures would not attract any individual variations between the wrenches (Tr. 71-72). Further, when asked to explain and

reconcile Mr. McLaughlin's full shift test results showing noise exposure of 201% and 203% above the permitted limits for the untreated wrench, and his test results of 453% above the permitted limits for an untreated wrench, Mr. Antel replied as follows (Tr. 73-74):

> Q. In your July 12, 1982 report, Petitioner's Exhibit 9, you found under similar situation that the untreated wrench generated noise 453% of the permissible dosage; is that not correct?
>
> A. Yes.
>
> Q. Under similar circumstances, MSHA employees obtained readings of 201, 203 and 453%. That appears to be a rather large discrepancy. Can you account for that?
>
> A. I believe that can be accounted for due to the variables, not only in the types of cars, but also in the number of cars that, in which the wrench is used.
>
> If I could refer back to my first visit, we witnessed about fifty cars, fifty-two cars that were being unloaded that day, but only on about half of these the wrench was used. And the other half, they were used, the bar was used to open it. So certainly that would influence the exposures, the number of times the wrench was used.
>
> Q. Then you are suggesting that to compare those two numbers is improper?
>
> A. I am saying that one day might vary from another day, depending on the number of cars they are opening.
>
> Q. You are suggesting then that those figures are invalid?
>
> A. No, I am saying that those figures were valid for that day.
>
> Q. You only tested them one day? On the follow-up visit?
>
> A. The follow-up visit we did one full shift, sir.

Q. Could you tell me the, the activities of the employees working in the dry rock unloading area in the shed that we have been discussing?

A. My observation, I noticed the operators, besides unloading the cars with the pneumatic wrenches, between strings of cars they would go down into the rail yard -- and I am not sure what they were doing there -- but they would come up with another string of cars.

Q. Do you know how many days per month railroad cars are normally unloaded there at Port Sutton in the shed?

A. How many days per month?

Q. Yes.

A. No, I don't.

Q. Do you know how many hours per month the employees in the dry rock unloading area are exposed to that wrench noise?

A. No.

Q. Doesn't the potential harm from any loud noise source depend on the duration of employee exposure to that noise source?

A. Yeah, I guess that would be true.

Q. Since you don't know the activities of the employees in that area, either on a daily or a monthly basis, you cannot accurately testify as to any potential harm they may suffer as a result of their exposure to the wrench noise, can you?

A. I can only testify to the findings that I observed that day.

Q. But you can't give any professional estimate as to the magnitude of potential harm to the employees, can you?

A. No, I can't.

One major flaw in the petitioner's case is that its enforcement efforts are concentrated on the pneumatic wrench used to open and close the locomotive cars. In its post-hearing brief, petitioner maintains that both Inspector McLaughlin and Mr. Antel were of the opinion that the wrench was the primary source of the noise. However, as correctly pointed out by the respondent in its post-hearing arguments, the excessive noise levels which prompted the issuance of the citations emanate from the total dumping operation at the shed, and unless this total environment is considered, concentrating on one particular piece of equipment, which may or may not be significant, would be fruitless.

While it is true that Inspector McLaughlin testified that he considered the primary source of noise exposure as "the noise being generated by the pneumatic wrench while it was engaged with the car fitting" (Tr. 22), he conceded that he performed no noise measurements to differentiate and quantify the noise produced by the wrench from noises produced by the railroad car, and he explained as follows (Tr. 23-24):

> Q. Mr. McLaughlin, you just testified that the primary noise source during the unloading operation was the pneumatic wrench. But isn't it true that you never performed tests to quantify the various noise sources?
>
> A. Explain that. What do you mean quantify?
>
> Q. You never performed any tests when you were there on that day to differentiate various noise sources in the dry rock and loading area, did you?
>
> A. Well, I did use a sound level meter while the equipment was operating, and I guess that would be a quantified measurement, would it not?
>
> Q. But you never performed a test to distinguish the noise generated by the wrench from the noise generated by the railroad car or by the fans or employees dropping lunchboxes in the shed itself, did you?
>
> A. Well, I wouldn't be interested in that.
>
> Q. Isn't it true that you cannot perform such a test using the equipment that you had there on that day?
>
> A. Yes.

And, at Tr. 28-29:

> Q. Now, Mr. deMeza asked you a question about whether or not you actually tested all of the available noise sources there. Do I take it that the noise levels that you found to be out of compliance would be what? A composite or a totality of all the noise that these two fellows were engaged -- were exposed to during the course of a given shift?
>
> A. Yeah, as a, as the inspector -- I am not really concerned that much which piece of equipment is making the noise, because you, in this particular case, you have got a wrench making noise, you have got steel rattling on the cars, you have got all kinds of noise. What I am interested in is what the man is being exposed to. And so it is, it is the total noise in the area.
>
> Q. So I take it if you tested all of the available noise sources and you found that one in particular was the culprit, if I can use that word, in other words, if you were to take that particular piece of equipment out of the workers' environment and theoretically if that would bring them into compliance, that they would know what the particular noise source would be, wouldn't they?
>
> A. Yes. If they were not using a pneumatic wrench there wouldn't be, you know, hardly any noise.
>
> Q. Do you feel that that was the principle noise source there that was causing the problem?
>
> A. Uh-huh.
>
> Q. That was causing the problem?
>
> A. It was the pneumatic wrench opening the car doors. You see, it is a combination. You have two things. You have noise from the wrench and you also have noise when it is engaged.

While it is true that Mr. Antel testified that based on his April 1981, noise survey, it was his opinion that the primary noise source "was the wrench and operating during loading and unloading of the cars" (Tr. 51). He qualified his statement by readily conceding the existence of dumping operation noise sources other than the pneumatic wrenches, and his testimony in this regard is as follows:

Q. (Mr. deMeza) Why does the noise level increase when doors are being closed? The rail car doors?

A. Because the cars are being emptied at that time and the reverberation condition.

Q. Reverberation condition?

A. From the cars themeslves.

....

So, in closing Õthe hopper doorsÊ, that damping of the rock is, is absent, but the walls are pretty ÕsicÊ vibrating and shake in sympathy, I suppose, to the wrench?

A. Yes. (Tr. 94-95).

* * * *

Q. (The Court) Okay, now, with that flap device over there what, what kind of noise would come from that coupling and uncoupling?

A. It was a very loose fitting on some of these cars from, I suppose, continual opening and closing, where the bit or this part of the wrench would engage and sometimes it tended to rattle and jump around (Tr. 99).

* * * *

Q. (Mr. DeMeza) Did you attempt to identify and regulate those other noise sources?

A. There was no way that, that I was able to do that, since the wrench was not operating, certainly would not excite the car and there was no other means of generating the noise from the car, other than the wrench. (Tr. 69).

Q. And when he is opening the doors, that particular wrench generates noises?

A. Yes, sir.

Q. At that point and at what other point?

A. Closing. Opening and closing.

Q. So, if, if part of the noise problem is the, the doors clanging and that, I would think that somebody would want to address that, too, That would be a contributing factor, wouldn't it?

A. Yes. (Tr. 99-102).

Mr. Antel's April 1981, noise survey report (exhibit P-6), contain certain conclusions which recognize noise sources other than the wrench during the dumping operation, and these are as follows:

--- increased noise levels when car doors are closed due to the reverberant condition of the cars after the material has been removed.

--- the car shaker.

--- locomotive tramming through the building, including the whistle.

Mr. Antel's report also states that at times, two or three cars may be emptying simultaneously, and that on occasion it may be necessary to utilize a car shaker in emptying the car. Although he did not consider the car shaker to be a major noise source at the time of his survey, he conceded that in the event the shaker operating time is increased it "should be regarded as a potential problem and should be investigated". Mr. Antel notes that the shaker operated two times during his survey, and no data was collected from the locomotive cab.

In view of the foregoing, it would appear to me that Mr. Antel's noise survey included factors which were not present during the survey taken by Mr. McLaughlin to support the citations. It would seem to me that if two or three cars are being dumped simultaneously while one or more car shakers is in operation, significant noise sources other than the wrenches would be present. Yet, none of these variables are explained. The parties go through great lengths to try and explain their respective engineering methodology in support of their respective positions in this case, but it occurs to me that when one is dealing with such extremely complex matters as the noise suppression standards in issue what may work theoretically on paper may not work in the actual mine working environment.

In his report of the May 1982, noise evaluations, Mr. Antel again recognizes the fact that noises other than the wrench

contribute to the overall employee exposures. He takes note of the fact that there are differences in the noise levels when the wrench is coupled and uncoupled from the locomotive car doors. Although he notes that when the wrench is coupled to the car, "another noise source is activated", he speculated as to where these sources were located and concluded that the exact location could not be determined at the time of his survey. He also took note of the fact that the noise levels generated while opening the car doors are lower than the levels generated while closing the car doors. This fact lends support to the respondent's claim that the cars themselves contribute significantly to the overall noise exposure.

Feasible Engineering Controls

Respondent concedes that it did not follow MSHA's precise recommendations concerning the noise control measures described in the 1981 Antel Report. However, respondent has established that its tests included the use of a foam-lined metal shroud, a rubber flap extending over the wrench bit, and an exhaust muffler. Therefore, as correctly pointed out by the respondent, its attempted engineering controls were close to those recommended by MSHA and presented no significant operational differences, and Mr. Antel believed that one could expect approximately the same results from the noise controls measures implemented by the respondent as those recommended by MSHA (Tr. 93). Further, as pointed out by the respondent at page 20 of its post-hearing brief, during the abatement process MSHA never took issue with the respondent's testing (Tr. 213). As previously noted, the compliance time for both citations was extended for some ten months while both the respondent and MSHA were attempting to come up with some feasible engineering controls. The citations were then terminated "pending development of additional means of noise attenuation on this equipment which may be required at a later date". In the meantime, MSHA permitted the use of personal hearing protection, and when the inspector observed that the employees were not wearing such devices the citations followed.

With regard to the petitioner's assertion that respondent failed to accept MSHA's offer to test one of the wrenches in its laboratory, respondent explained that it could not afford to relinquish a wrench because it was required to be located at the loading site as a back-up in the event the other wrenches were down for maintenance. In the circumstances, respondent's reluctance to send one of its wrenches to MSHA's laboratory for testing seems reasonable. Aside from the fact that laboratory testing is significantly different than

operating such a wrench in the actual mine environment, I cannot conclude that on the circumstances here presented respondent's reluctance to take one of its wrenches out of commission was unreasonable.

Respondent's maintenance supervisor Erickson confirmed that one of the wrenches was "treated" with certain devices, including a muffler, in order to test the noise reduction (Exhibit R-3). He explained the modifications in great detail (Tr. 107-11), and aside from the fact that the particular modifications had to be "customized" to the particular wrench, he encountered no particular difficulties in making the modifications (Tr. 112). However, he did speculate on certain operational and maintenance problems which he believed would be encountered, and he estimated that the total additional labor and materials to maintain five treated wrenches would amount to $19,500 annually (Tr. 119). Mr. Erickson alluded to certain complaints made by the wrench operator after it was modified (Tr. 135-136; 138), and while he confirmed that testing was conducted before and after the modifications, he had no knowledge of the test results or whether the modifications resulted in any noise improvements (Tr. 138). Mr. Erickson's concern over the increased costs for the modified wrench stemmed from the fact that it would impact on his particular budget (Tr. 142).

Mr. Antel's testimony that he had previously constructed a wrap-around muffler for use on large pneumatic drills, that the cost would be approximately $65, and that no significant maintenance or employee problems would result is not persuasive. To begin with, the wrench in question is not a drill. With regard to Mr. Antel's assertion that he would expect a noise reduction of 5 dBA in the unloading area if his "wrap around" recommendations were followed, I take note of the fact that based on the results of testing as advanced by the parties, respondent would still not be in compliance. More importantly, on the facts of this case, it seems clear to me that MSHA's preoccupation with the wrench focuses only one part of the overall noise problems which result from the total unloading operation to which the two cited employees were exposed.

Safety supervisor Rowell indicated that the railroad owns the cars, and while the respondent leases some of them, it has no control over which cars appear at the unloading facility (Tr. 183). He discounted the use of car bars to open the car doors because the use of such bars has resulted in numerous accidents (Tr. 184-187). Petitioner's counsel agreed that the respondent has no control over the cars and cannot readily modify them (Tr. 230).

Mr. Rowell believed that the fully-treated wrench presented serious safety problems due to the lack of visibility during the insertion of the wrench chuck into the car due to the presence of the flap (Tr. 182). He also confirmed that the respondent considered purchasing a hydraulic torque-type wrench, which is quieter, but decided not to after determining that it was hazardous to the operator (Tr. 212). He also indicated that an untreated wrench weighs approximately 130 pounds, and that the modifications added an additional 20 to 25 pounds (Tr. 168). He also testified that the addition of the flap as shown on exhibit R-3 presented a visibility problem which has resulted in a misplaced wrench bit flying off and that this is hazardous to the wrench operator (Tr. 170-172).

Petitioner's suggestion at Tr. 231 that one cannot test the noise levels with the wrench attached to the car so as to determine the amount of noise given off by the car and the amount of noise given off by the wrench is simply not so. The record here establishes when respondent tested the treated wrench with and without a chuck while not coupled to the car, the sound level meter indicated noise in the range of 88 to 92 dBA (exhibit R-8). The test results for the treated wrench while opening and closing the car doors reflected significant increases in the noise levels. As a matter of fact, Mr. Antel's May 1982, tests indicated the approximate same results for the treated uncoupled wrench as well as for the treated wrench while coupled and used in the opening and closing of the car doors. Thus, I conclude that these test results support the respondent's assertions that the wrench in question is but one part of the noise problem.

Petitioner's counsel candidly admitted during the course of the hearing in this case that the parties "came away from those tests back in May of 1982 with a different interpretation of the results" (Tr. 209). While it may be true that the testing conducted by the parties reflect a reduction in the noise levels as between the treated and treated wrenches, it seems clear to me that in the actual mine working environment, compliance will not be achieved until such time as the total noise sources are addressed. Petitioner's counsel conceded that even if MSHA were to independently test the wrench, and its recommendations did not result in noise reduction, it would consider that there are no feasible engineering controls available, and the respondent would then be permitted to continue providing personal ear protection to its employees. This would be considered as compliance (Tr. 228-229). During a bench colloquy, counsel elaborated further as follows (Tr. 229-230):

JUDGE KOUTRAS: Once they operate under this standard and made a reasonable effort to comply with the feasible engineering controls -- and that's always the guts of the cases; right?

MR. WELSCH: Yes, sir.

JUDGE KOUTRAS: There is always a difference of opinion as to what is feasible and what is not?

MR. WELSCH: Yes, sir.

JUDGE KOUTRAS: But theoretically, assuming that they did all that, that was necessary and that MSHA agreed that they did all that was really necessary to bring the noise level on this particular wrench down into compliance, you could isolate that from all the other noise and find that they were in compliance.

And once they put that modified wrench back into production, it could very well be that other noise sources -- let's just take the empty cars --

MR. WELSCH: Yes, sir.

JUDGE KOUTRAS: That would put them back out of compliance again? Theoretically, that could happen?

MR. WELSCH: Yes, sir.

JUDGE KOUTRAS: And then I suppose MSHA could come back and say, "Okay, listen. We have eliminated the wrench now. What we want you to do now is take these cars that you are producing and buy some rubber ones."

MR. WELSCH: I, I don't think MSHA would --

JUDGE KOUTRAS: Theoretically?

MR. WELSCH: Theoretically, yes, Your Honor. In this case, though, it is my understanding that these are the controls that MSHA recommends and at this point in time this is probably all the controls that we can recommend to abate this noise.

On the basis of the preponderance of the evidence adduced in this case, I conclude that the petitioner has not established that feasible engineering controls are available to reduce the noise of the dumping operation in question to within the allowable levels mandated by section 55.5-50(b). I conclude further that the petitioner has failed to establish through any credible evidence that its recommended wrench engineering noise controls will reduce the dumping crew's noise exposure so as to bring the respondent into compliance. I reject the petitioner's suggestion that while the engineering controls tested by MSHA and the respondent may not reduce employee exposure below the permissible limits, the respondent must nonetheless implement them.

With respect to the question of economic feasibility, based on the record here presented, I cannot conclude that the estimated costs for the treated wrenches in question would place the respondent in dire financial need. Based on its overall resources, I cannot conclude that the expenditures testified to in this case are economically burdensome. However, since there is no dispute over the fact that the respondent was out of compliance and was in violation because the cited employees were not wearing personal hearing protection, and in view of my conclusions that the petitioner has not prevailed on the question of feasible engineering controls, the particular question of cost feasibility is not a critical factor in this case.

I further find and conclude that the respondent here acted in good faith in attempting to achieve engineering compliance through the testing of certain noise control measures similar to those suggested by MSHA, but that unless the total operational noise environment at the dumping location is addressed by both MSHA and the respondent, "piecemeal" consideration of the wrench in question will not achieve compliance. I also find that the respondent has established through credible testimony that its own modifications to the wrench presented safety problems to the operator which outweighed any resultant noise reductions.

Feasible administrative controls

In this case, MSHA recommended the following administrative controls:

1. Having the lead flagman and flagman leave the dumping shed when a trip of cars is being moved through.

2. Eliminating any unnecessary use of the locomotive whistle while the locomotive is passing through the shed.

3. Keeping the lead flagman and flagman outside the locomotive cab unless uncessary in the performance of their duties.

Although respondent on the one hand states that MSHA's administrative controls are not significant, it nonetheless at page 37 of its post-hearing brief "does not disagree with the wisdom of those recommendations". At page 31 of its post-hearing brief, respondent concedes further that MSHA's suggested administrative controls will, to some small degree, be effective in reducing the dumping crew's noise exposure, and that if MSHA's recommendations are followed the crew will occasionally be exposed to significant noise levels.

In addition to those administrative controls suggested by MSHA, the respondent states that one of the more common administrative noise controls, rotation of employees among various work stations of varying noise exposures to minimize the total daily noise dose, was never recommended by MSHA. Respondent assumes that MSHA accurately perceived that respondent could not implement such measures at the Port Sutton terminal because the facility's employees are solidly unionized and dumping crew jobs are subject to the "bid" system. Respondent states that any assignment of a less-senior employee to a preferred position on the unloading crew would result in union grievance proceedings or double payment of employees (i.e., payment of both the senior employee who was "bumped" by rotating off the dumping crew as well as the junior employee who actually performed the work) (Tr. 166-167).

Respondent's safety supervisor Rowell testified that since the citations were issued all employees working in the unloading area are required to wear personal ear protection as a condition of continued employment (Tr. 190). He also confirmed that on any given day, employees in the unloading area would spend from 4 to 6 hours per shift in that location, and that during this time the wrenches are in operation only when the car doors are opened (Tr. 164). He confirmed further that the respondent supplies all employees with ear plugs, that any employee working in the car unloading area is required to wear them as a matter of company policy, and that the annual training for all employees includes a portion devoted to noise (Tr. 168, 187). Although Mr. Rowell alluded to the possibility of bringing in additional part-time shifts to relieve the regular unloading crews, he did not believe this would be feasible due to the added costs (Tr. 183). However, no further details or evidence was offered with respect to this suggestion.

At hearing, respondent's counsel conceded that section 55.5-50(b) requires the respondent to implement feasible engineering or administrative controls to achieve compliance (Tr. 222). When asked whether he believed MSHA's recommended administrative controls to be unduly burdensome, counsel replied as follows (Tr. 224):

> JUDGE KOUTRAS: At any rate, I don't see anything in these three paragraphs that would, that would be an undue burden on the, on the Respondent in this case to comply with; wouldn't that be true? Do you agree or disagree with that? Counselor?
>
> MR. deMEZA: It would seem so, Your Honor, although I have not discussed it with the client.

I cannot conclude from the record in this case that the respondent has established that the recommended administrative controls are not feasible. By the same token, I cannot conclude that the parties have established that such controls will, or have had any significant impact in reducing the noise exposure. Quite frankly, I believe that the parties have concentrated on engineering controls, and have not fully considered the impact of any possible administrative solutions to the problem. Under the circumstances, I believe that the respondent has a continuing obligation to continue to explore feasible administrative controls, including those suggested during the hearing, in order to achieve full compliance with the noise requirements.

The parties are reminded that while the result of my decision in this case is to permit the respondent to use personal ear protection, as correctly stated by the petitioner, the use of such devices is not an absolute defense. My decision in this case focused on the pneumatic wrench, and my feasibility findings are in connection with that particular piece of equipment. Respondent may not sit idly by without making any further attempts to address its noise problems at the dumping location in question, and it has a positive duty to make good faith future efforts at achieving total noise compliance at the operation in question.

Fact of Violations

There is not dispute on the question of violation and the record supports a conclusion that the respondent is in violation of mandatory safety standard 30 CFR 55.5-50(b). Accordingly, the citations ARE AFFIRMED.

History of Prior Violations

The computer print-out submitted by the petitioner (Ex. P-1), reveals a moderate history of prior violations by the respondent with no previous violations of the cited standard herein, and I have considered this in the course of my penalty assessments in this case.

Size of Business and Effect of Civil Penalties on the Respondent's Ability to Remain in Business.

I conclude that the respondent is a large mine operator, and the parties agree that the payment of the proposed civil penalties will not adversely affect its ability to remain in business.

Negligence

Although respondent suggests that it was unaware of any noise problems at its unloading operation, and relied on its employees to bring such problems to its attention, since it did conduct noise tests on certain other equipment, I believe it had an obligation to insure that tests were made at the unloading area as well, particularly when its own safety supervisor (Rowell) candidly admitted that the unloading area was the only real source of any potential excessive noise. In these circumstances, I conclude and find that the violations resulted from the respondent's failure to exercise reasonable care, and that this amounts to ordinary negligence.

Gravity

Although there is no evidence of any specific damage to any employee as a result of excessive noise exposure, the fact is that in this case the employees were not wearing personal protective devices. Since the respondent concedes that it was out of compliance and that the two cited employees were not wearing such protective devices, they were exposed to noise above the regulatory limits. Accordingly, I conclude that the conditions cited posed a potential source of harm to the employees, and that the violations were serious.

Good Faith Compliance

I conclude that the respondent made a good faith effort to achieve compliance after the cited conditions were brought to its attention, and I have considered this in the penalties assessed by me for the two violations in question.

Penalty Assessments

On the basis of the foregoing findings and conclusions, and taking into account the requirements of Section 110(i) of the Act, I conclude and find that the following civil penalty assessments are appropriate for the citations which have been affirmed:

Citation No.	Date	30 CFR Section	Assessment
094927	11/26/80	55.5-50(b)	$180
094928	11/26/80	55.5-50(b)	180
			$360

ORDER

Respondent IS ORDERED to pay the civil penalties assessed by me in the amounts shown above within thirty (30) days of this decision and order, and upon receipt of payment by the petitioner, this case is dismissed.

George A. Koutras
Administrative Law Judge