

ILLINOIS POLLUTION CONTROL BOARD
November 2, 2006

IN THE MATTER OF:)
)
PROPOSAL OF VAUGHAN & BUSHNELL) R06-11
MANUFACTURING COMPANY OF) (Rulemaking – Noise)
AMENDMENT TO A SITE-SPECIFIC RULE)
35 ILL. ADM. CODE 901.121)

Proposed Rule. Second Notice.

OPINION AND ORDER OF THE BOARD (by T.E. Johnson):

On October 20, 2005, the Board received a rulemaking proposal submitted by Vaughan & Bushnell Manufacturing Company (V&B) pursuant to Section 27 of the Illinois Environmental Protection Act (Act) (415 ILCS 5/27 (2004)). V&B seeks a site-specific rule amending a previously promulgated site-specific noise rule that would extend the allowable operational levels of its forging facility located at the intersection of Davis and Main Streets, Bushnell in McDonough County. The Board sent the proposal to first notice on July 20, 2006. A hearing was held on March 7, 2006.

By today's action the Board adopts the proposed rule for second notice pursuant to the Illinois Administrative Procedure Act. 5 ILCS 100/1-1 (2004). The following opinion will explain the proposal background, summarize the first-notice proposal, and discuss the economic reasonableness and technical feasibility of the rule.

BACKGROUND

V&B manufactures striking tools, and owns and operates a forging shop built in 1940 in Bushnell (facility). Pet. at 1,6. The facility consists of ten drop hammers capable of producing up to 2,500 lbs. of force in the production of striking tools. Pet. at 1. The facility is V&B's primary production facility, and is located in an area of Bushnell that is primarily industrial. Pet. at 1-2. V&B is the largest employer in Bushnell, currently employing 230 people. Pet. at 6.

V&B asserts that currently the land uses in the immediate area, in addition to industrial, are agricultural, residential, rail transportation and vacant land. Pet. at 2. V&B asserts that because the facility has received a site-specific rule with regard to sound emissions, the Board's noise regulations have generally not been applicable. *Id.* V&B contends that it is seeking an amendment to the previously promulgated rule that will establish a 24-hour period of operation. *Id.* V&B proposes that the site-specific rule amend the current rule at 35 Ill. Adm. Code 901.121. Pet. at 2-3.

In its statement of reasons, V&B asserts that the predominate industrial character of the area surrounding the facility creates heavy truck, vehicle and train traffic that combine to create an abundance of noise far in excess of the noise created by V&B at the facility. Pet. at 5. V&B

asserts that due to the substantial heat created during the forging process, the facility requires extensive ventilation provided by a process called “natural cooling” in which doors to the outside are opened. Pet. at 7. V&B contends that sound emission is a consequence of the forging industry, and that although there have been advances in technology, such changes have not adequately replaced the “natural cooling” system that most forging shops utilize. Pet. at 8.

V&B asserts that placing sound barriers around the facility would have the side effect of reducing the air flow needed for the “natural cooling” of the shop, and that ventilation systems placed in or around the furnaces cost upwards of \$500,000 each, and would not permit the complete closure of the side openings, as fresh air must be permitted to enter the shop. Pet. at 8. V&B argues that technological advances in the forging industry have not created an economically reasonable alternative to the “natural cooling” system used by most forging shops and that neither sound barriers nor ventilation systems are economically reasonable. Pet. at 8,10.

V&B asserts that the facility complies with the applicable Board sound emission standards and limitations and that it does not, therefore, have an adverse environmental impact on the area. Pet. at 10.

As proposed, the site-specific effluent standard requested by V&B would provide as follows:

Section 901.121 Vaughan & Bushnell Operational Level

Vaughan & Bushnell Manufacturing Company and the future owners of the forging facility located at the intersection of Davis and Main Streets, Bushnell, Illinois, shall comply with the following site-specific operational level:

- a) Operate no more than ten hammers at any one time during the hours of 6.00 a.m. and 1.30 a.m. Monday through Sunday; and
- b) Operate no more than ten hammers at any one time during the hours of 1.30 a.m. and 6.00 a.m. Monday through Sunday. Pet. at 3.

PROCEDURAL HISTORY

On October 20, 2005, V&B filed the petition seeking a site-specific rule. On December 1, 2005, the Board opened regulatory docket R06-11. A hearing in this matter was held on March 7, 2006, at City Hall, 138 Hail Street in Bushnell. V&B appeared and presented testimony at the hearing. The Agency appeared but did not present any testimony. A large number of members of the public attended the hearing, with 12 providing public comment. V&B filed a post-hearing comment on May 30, 2006.

On October 31, 2006, a second hearing was held on the requested economic impact study of this rulemaking, in order to fulfill the requirements of Section 27(b) of the Act. 415 ILCS 5/27(b) (2004). Section 27(b) of the Act requires the Board to request the Illinois Department of

Commerce and Economic Opportunity (DCEO) to conduct an economic impact study (EcIS) on certain proposed rules prior to adoption of those rules.

On January 24, 2006, the Board sent a letter to DCEO requesting a study for this rulemaking. In that letter, the Board asked the DCEO to provide a decision as soon as possible. No response to the letter was received. Based on this non-response and the DCEO's past assertions that it does not have the financial resources to perform ECIS studies, the Board considers that the DCEO decided not to conduct a study 30 days after the letter was sent – February 23, 2006. The Board's letter and the documents consisting of the DCEO's response were available to the public for more than 20 days prior to the October 31, 2006 hearing. The Board received no comments at the hearing on the DCEO's decision not to conduct an ECIS.

MARCH 7, 2006 HEARING

On March 7, 2006, a hearing was held in this matter at City Hall, 138 Hail Street, Bushnell, McDonough County. Jeremy M. Pelphrey appeared and participated on behalf of the petitioners. Mark V. Gurnik appeared and participated on behalf of the Illinois Environmental Protection Agency (Agency). Many members of the public attended the hearing, with 12 providing public comment.

At the hearing, Dan Chambers, Butch Mourning, and Mike Havens submitted written and oral testimony for V&B. The Agency did not provide any testimony. The transcript was received at the Board on March 15, 2006. Public comments were due on or before April 17, 2006. V&B timely filed a post-hearing comment.

V&B's Testimony

Dan Chambers

Chambers is the manager of quality assurance for V&B. Tr. at 14. He testified that the company was incorporated in 1892 and began supplying hammers to Sears & Roebuck in 1897. Tr. at 15. Chambers stated that at the Bushnell facility, the company produces hammers, hatchets, heavy-striking tools, and pry bars. *Id.* Chambers described the process at the facility. The bar steel is purchased and cut to length. The steel is heated to 2100 – 2200 degrees and placed in between two dyes before it is drop-forged to make the shape of the hammer. The drop forge process takes between five to eight blows, depending on the size of the drop hammer and the size of the steel. After the forging operation, the hammerheads are ground, heated, inspected, and polished before being painted, re-polished and brand-stamped. Tr. at 15.

Chambers testified that V&B has approximately 263 employees, and is the largest employer in Bushnell, a town of approximately 3,300 people. Tr. at 16. V&B has a gross annual payroll of 8.4 million dollars and paid the city of Bushnell \$39,000 in property taxes. *Id.*

Chambers testified that V&B produces between 13,000 and 15,000 pieces a day, with orders increasing by approximately 15% last year. Tr. at 17. Some buyers penalize V&B if they do not ship on time, while other buyers – such as Lowe's and Home Depot – have policies that

require V&B to cancel the order if it cannot be filled promptly. *Id.* Chambers asserted that if a particular item is canceled too often, it is dropped from the store. *Id.* Chambers testified that to keep up with demand, V&B must increase the amount of hammers it produces. *Id.* Currently, he stated, V&B has ten drop hammers that run two shifts. Adding another drop hammer would require the construction of an additional building that would be very costly. Tr. at 18. Chambers testified that it was determined in November that to meet the demand for orders, V&B had to add a third shift in the forge shop. *Id.* A third shift was added at that time, and the company has added 30 employees. *Id.* Chambers testified that V&B has not received any complaints since it added the third shift. Tr. at 19, 21.

Butch Mourning

Mourning is the process engineer for V&B. Tr. at 28. Mourning testified that V&B is located directly across the railroad tracks from Archer Daniels. Tr. at 29. Mourning testified that it's 300 feet from the forge area to the first residence. Tr. at 34. He testified that the forge shop itself is where the drop hammers are located and is 118 feet by 77 feet. Tr. at 38. Each drop hammer is part of a unit also containing a furnace and a press. *Id.* He testified that the majority of the scrap goes out the east door that is located no more than 12 feet from Main Street. Tr. at 42. Mourning testified that the door is opened and closed very often, and in the summer is also used for ventilation. *Id.* He testified that only the doors opening to the east and the south open to the outside, whereas the remaining doors lead to the interior of other buildings. Tr. at 45.

Mourning testified that the hammers are installed according to the manufacturer's recommendation to minimize vibration and noise, and are also covered with sound dampening material including one to two inches of fabrica, a dense rubber-type material designed to absorb noise and vibration. Tr. at 47. V&B does not have any spray-on foam material on the walls because of the heat. Tr. at 48. He testified that V&B could not build a berm around the site because they are very close to the street, and such a berm would leave no room to get material in and out. Tr. at 51.

Mourning stated that the noise is created from the dropping of the hammer, and that the number of blows necessary for each piece of material varies, depending on the amount of steel that needs to be moved. Tr. at 55-56. He characterized the noise as not a constant, but an impact-type noise. Tr. at 56. Mourning testified that fresh air is necessary because of the intense heat. Tr. at 57. He testified that it would cost an estimated \$994,000 to seal up the building and install the necessary ventilation system, and even then, it would be necessary to open and close the door for getting scrap in and out of the building. Tr. at 60.

Mourning testified that it would not be feasible to install removable sound barriers in light of the number of times V&B employees go in and out of the door per day. Tr. at 63. He further testified that it is not feasible to move raw material in and out through any of the interior openings in the forge shop. Tr. at 64. Mourning testified that it is possible to forge with a forging press that would be quieter than a drop hammer, but that the cost of the equipment goes up tremendously. Tr. at 65. He testified that just one press alone would cost well over \$850,000, which does not include the associated trim press and other necessary items. Tr. at 66. He testified that V&B has approximately 75,000 impacts per 24-hour shift. Tr. at 69.

Mourning testified that he was not directly involved in the study prepared by the Forging Industry Educational Research Foundation in 1977, that found it was not economically reasonable or technically feasible to have sound control at V&B. Tr. at 72. He did state that no similar studies have been conducted since that time. Tr. at 73. He testified that operations at the forge shop have not significantly changed since 1977, the only difference being that more parts per hour are being produced. *Id.* He testified that the surrounding neighborhood has become less residential since that time. Tr. at 76.

Mike Havens

Havens is a process engineer for V&B. Tr. at 77. He testified that the facility is primarily in an industrial area of Bushnell. Tr. at 78. In 2005, Havens performed several sound tests to determine the effects of adding a third shift to areas surrounding the forge shop. Tr. at 79. On July 13, 2005 and September 1, 2005, sound levels were taken with a sound meter. *Id.* Havens is not an expert on sound gathering. *Id.* Havens used the meter to record the maximum reading at each location and identified the source of the noise. Tr. at 80. He checked the houses closest to the facility. *Id.* He testified that in many areas the main source of noise was not from V&B. *Id.*

On July 13, 2005, he took measurements with the forge shop not running, and on September 1, 2005, he took varying measurements with the forge shop running about nine hammers, and not running. TR. at 84. Havens testified that he has not received any complaints from the public regarding sound levels or noise pollution at the facility. Tr. at 88.

PUBLIC COMMENTS

A number of public comments were received at the hearing. V&B also filed a written public comment on May 30, 2006. The Board will first summarize the public comments received at hearing, and then address V&B's written comment.

Public Comments Made at Hearing

The mayor of Bushnell, Steve Russell, testified that approximately 45 trains per day come through Bushnell. Tr. at 97. He testified that the noise from the trains definitely impacts Bushnell, especially in the spring when the windows are open, and that the trains run at night as well as during the day. Tr. at 99. He testified that the city of Bushnell has a big demand for jobs. Tr. at 100. He stated that he and the Bushnell city council were unanimously in favor of the request of V&B to increase their hours to meet demand for their products. *Id.* He testified that he has had no complaints about the plant during his time as alderman and mayor, a period of three years. Tr. at 101.

Steve Holland is the president of the Bushnell Economic Development Corporation, and has been the city attorney for 30 years. Tr. at 102. He testified that there is no zoning in Bushnell, but that the location of the facility is primarily manufacturing. Tr. at 103. He testified that the trains have a far bigger negative impact than V&B would ever have. He testified that the Development Corporation totally supports the request of V&B and noted that it is important that

V&B continues to be a part of the community. *Id.* Holland stated that he could recall no complaints regarding V&B's facility. Tr. at 104.

Richard P. Myers is the State Representative for the 94th legislative district. Tr. at 104. He testified that he has represented the residents of Bushnell for 12 years and supports the proposal of V&B. Tr. at 104-05. He feels that V&B is an integral part of the economy of Bushnell, McDonough County, and the entire region. Tr. at 105. He testified that in the 12 years he has represented the district, he has had numerous complaints concerning noise and air pollution, but never once has he received any complaints from anybody in Bushnell regarding V&B. Tr. at 107.

Michael Steelman is the Chairman and Chief Executive Officer for Farmers & Merchants Bank of Bushnell. Tr. at 108. He is also the secretary and director of the Bushnell Economic Development Corporation, and has lived in Bushnell since 1955. *Id.* He testified that the bank is located three blocks from the facility. *Id.* He stated that the economic well-being of V&B is central to the city of Bushnell, and that the city has a unique mix of commercial and retail businesses, all within a six-block area of downtown. Tr. at 109. He testified that the manufacturing plants have always been located in the downtown area, and that the city has no applicable zoning laws. *Id.* He testified that the bank and the Development Corporation fully support the proposal. Tr. at 110.

Don Swartzbaugh is the president of the Bushnell Chamber of Commerce. Tr. at 111. He testified that the Chamber fully supports the proposal. *Id.* Daniel Roberts is a resident of Bushnell, and he has lived at 123 South Dean Street, located less than one block southwest from the facility, for 18 years – marked as location 8 on Exhibit C to the proposal. Tr. at 111-12. He testified that he had not noticed any additional hammer activity, even though V&B had been running the third shift for weeks. Tr. at 112. He testified that he has no objection and the facility doesn't impact him at all. *Id.* Mike Howell is a Bushnell city alderman, and is employed by V&B. Tr. at 113. He testified that V&B has always been a good partner with Bushnell, and he supports the proposal. *Id.*

Justin Hood lives on the corner of Davis and Dean, across the street to the north of the facility – marked as location 3 on Exhibit C to the proposal. Tr. at 114. He has a family of four and has resided at the house for over five years. *Id.* He testified that there has been no noticeable difference in the running of the hammers since V&B has gone to a third shift. *Id.* He testified that there is not any excessive noise that comes from the forgings and there are plenty of other sources of noise in the area. Tr. at 115.

Ron Miller is an employee of V&B. Tr. at 116. He testified that shutting down the furnaces for four or five hours, only to restart them prior to the next shift, is inefficient and would make V&B less competitive. Tr. at 117-18. Dave Norton is a Bushnell City Alderman. Tr. at 121. He has a place of business two blocks from the facility. Tr. at 122. He testified that as he sits in his office, the light fixtures and windows rattle as the trains go through, but that he never hears V&B's hammers. *Id.*

Merlin Evans lives one block northwest of the facility – across the street from location 2 on Exhibit C to the proposal – and has lived there for 16 years. Tr. at 122. He testified that the trains are the worst, and that he can feel the vibration of the noise from Norforge, but never from V&B. Tr. at 123. Bill Cameron testified that has lived in the area for over 30 years and has never had any problems with any noise from the drop hammering. Tr. at 124.

V&B's Post-Hearing Comment

V&B filed a post-hearing comment that addressed issues raised by the Board at hearing and provided additional argument on the proper avenue of relief. V&B notes that Havens testified that he was only able to identify one point during his sound-level survey in which the sound emitted from the facility was in excess of the current regulations promulgated by the Board, and that point of testing was immediately outside the large door of the facility when the door was open to transfer raw material into the shop. PC at 7. V&B asserts there are no residences in that area. *Id.*

V&B argues that based on the testimony elicited at hearing, the community health impact of the proposed change in hours of operation will be, at most, negligible, while the economic benefit to the city that will result from granting the proposed change would be far greater. PC at 10.

V&B argues that sound emission is an unavoidable consequence of the forging industry, and that technology in the area of sound dampening has not adequately replaced the “natural cooling” system most forging shops currently utilize. PC at 11. V&B asserts that though it might be possible in some situations to install sound barriers in front of the facility’s openings, the amount of sound actually dampened or reduced would be minimal when compared with the side effects of decreased cooling, which results in unsafe conditions for the workers and greatly lowered production. *Id.* Additionally, V&B contends, due to the location of the facility, such sound barriers would cross city sidewalks and streets and block pedestrian and vehicle traffic, making them technically infeasible. *Id.*

V&B acknowledges that the ventilation systems discussed at hearing would keep the facility cooler and allow the side openings to be closed for longer periods of time, thereby reducing the duration of sound emissions. PC at 11. However, V&B contends that the ventilation systems cost upwards of \$1,000,000 and would not permit the complete closure of the side opening,s as fresh air must still be allowed in the shop, so that even though some reduction in sound emissions may result; the cost of the ventilation systems far outweighs the benefits, making them economically unreasonable. PC at 12.

V&B agrees that the record of its previous petition for site-specific rulemaking (Vaughn & Bushnell Manufacturing Petition for a Site-Specific Operational Level Pursuant to 35 Ill. Adm. Code 901 105(d) R83-32, Feb.20, 1985) should be incorporated into the record of this proceeding as it provides additional proof that the community impact of the proposed rulemaking is slight, and that the original rule creates limitations that are no longer economically reasonable or technically feasible for V&B. PC at 12-13. V&B notes that in Vaughan & Bushnell, R83-32, it was asserted that approximately 50 residences would potentially be exposed to sound levels in

excess of those allowed by Board rule, but that most of these residences no longer exist due to the increasing industrial nature of the facility's location. *Id.* V&B asserts that only a handful of residences, all more than 300 feet from the facility, may be exposed to sound levels in excess of those allowed by the regulations. *Id.*

V&B asserts that the sound-level survey indicates that the area immediately surrounding the facility will be exposed to noise levels of approximately 55 decibels during the proposed four and one-half hours of additional operation proposed. PC at 14. V&B argues that for reasons consistent with those found in Vaughan & Bushnell, R83-32, such a sound level would have almost no perceivable impact on the public. *Id.* V&B asserts that they have demonstrated the requested relief is necessary and warranted, and the consequences to the community slight, primarily due to noise already present in the area. PC at 15-16.

DISCUSSION

At first notice, the Board found that V&B presented information indicating that adoption of the proposed site-specific rule for the purposes of first notice was warranted. The Board found that the change in hours of operation proposed by V&B for its facility is reasonable, and fully supported by the noise studies and evidence contained in the record. In addition, the Board noted that V&B presented evidence regarding the character of the surrounding land area and land use, highlighting the minimal impact that noise emissions from the V&B facility causes.

Specifically, the Board found that V&B is appropriately located in an area that is heavily industrial in nature, and that the installation of noise-abatement equipment to dampen the sounds from the facility would not be economically reasonable or technically feasible. The Board noted that the Agency did not file any post-hearing comments, and did not object to the proposal at hearing. Accordingly, the Board finds that the proposal is economically reasonable and technically feasible, and will proceed to second-notice review.

In the first-notice order, the Board modified the language proposed by V&B in the petition. As noted previously, this modification does not alter the substance of the proposed regulation, but is merely an attempt to provide more clarity. In the petition, V&B proposes that it comply with the following site-specific operational level:

- a) Operate no more than ten hammers at any one time during the hours of 6.00 a.m. and 1.30 a.m. Monday through Sunday; and
- b) Operate no more than ten hammers at any one time during the hours of 1.30 a.m. and 6.00 a.m. Monday through Sunday. Pet. at 3.

The Board modified the language at first notice to read that V&B must comply with the following site-specific operational level:

- a) Vaughan & Bushnell may operate no more than ten hammers at any one time; and

- b) Vaughan & Bushnell may operate twenty-four hours per day, Monday through Sunday.

The Board did not receive any comments on the modification, and the same language is included in today's order. Finally, the Board has made further non-substantive clarifying changes that are not summarized in this order.

CONCLUSION

Based on the record developed to date in this matter, the Board finds that adoption of the proposal is warranted. The Board proposes this rulemaking for second-notice review by Joint Committee on Administrative Rules (JCAR).

ORDER

The Board directs the Clerk to cause the filing of the following with the Joint Committee on Administrative Rules for its second-notice review.

TITLE 35: ENVIRONMENTAL PROTECTION
SUBTITLE H: NOISE
CHAPTER I: POLLUTION CONTROL BOARD

PART 901
SOUND EMISSION STANDARDS AND LIMITATIONS FOR PROPERTY LINE-NOISE-SOURCES

Section	
901.101	Classification of Land According to Use
901.102	Sound Emitted to Class A Land
901.103	Sound Emitted to Class B Land
901.104	Highly - Impulsive Sound
901.105	Impact Forging Operations
901.106	Prominent Discrete Tones
901.107	Exceptions
901.108	Compliance Dates for Part 901
901.109	Highly - Impulsive Sound from Explosive Blasting
901.110	Amforge Operational Level
901.111	Modern Drop Forge Operational Level
901.112	Wyman-Gordon Operational Level
901.113	Wagner Casting Site-Specific Operational Level (Repealed)
901.114	Moline Forge Operational Level
901.115	Cornell Forge Hampshire Division Site-Specific Operational Level
901.116	Forgings and Stampings, Inc. Operational Level
901.117	Rockford Drop Forge Company Operational Level
901.118	Scot Forge Company – Franklin Park Division Operational Level
901.119	Clifford-Jacobs Operational Level

- 901.120 C.S. Norcross Operational Level
- 901.121 Vaughan & Bushnell Operational Level

APPENDIX A Old Rule Numbers Referenced
 APPENDIX B Land-Based Classification Standards and Corresponding 35 Ill. Adm. Code 901 Land Classes

AUTHORITY: Implementing Section 25 and authorized by Section 27 of the Environmental Protection Act [415 ILCS 5/25 and 27].

SOURCE: Originally filed as Part 2 of Chapter 8: Noise Pollution, effective August 10, 1973; amended at 2 Ill. Reg. 27, p. 223, effective June 26, 1978; amended at 5 Ill. Reg. 6371, effective June 1, 1981; amended at 5 Ill. Reg. 8533, effective August 10, 1981; amended at 6 Ill. Reg. 10960, effective September 1, 1982; codified at 7 Ill. Reg. 13646; amended at 7 Ill. Reg. 14519, effective October 17, 1983; amended in R83-35 at 8 Ill. Reg. 18893, effective September 25, 1984; amended in R83-33, 26, 29, 30 and R83-34 at 9 Ill. Reg. 1405, effective January 17, 1985; Section 901.105(f)(1), (2) and (3) recodified to Sections 901.110, 901.111 and 901.112 at 9 Ill. Reg. 7147; amended in R83-25, 31 and 32 at 9 Ill. Reg. 7149, effective May 7, 1985; amended in R83-7 at 11 Ill. Reg. 3136, effective January 28, 1987; amended in R04-11, at 28 Ill. Reg. 11910, effective July 30, 2004; amended in R03-9 at 30 Ill. Reg. 5533, effective March 10, 2006; amended in R06-11 at 30 Ill. Reg. _____, effective _____.

Section 901.121 Vaughan & Bushnell Operational Level

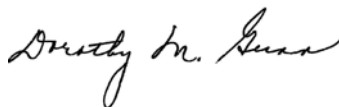
Vaughan & Bushnell Manufacturing Company and the future owners of the forging facility located at the intersection of Davis and Main Streets, Bushnell, Illinois, must comply with the following site-specific operational level:

- a) Operate no more than ten hammers at any one time; and
- b) Vaughan & Bushnell may operate twenty-four hours per day, Monday through Sunday.

(Source: Amended at 30 Ill. Reg. _____, effective _____)

IT IS SO ORDERED.

I, Dorothy M. Gunn, Clerk of the Illinois Pollution Control Board, certify that the Board adopted the above opinion and order on November 2, 2006, by a vote of 4-0.



Dorothy M. Gunn, Clerk
 Illinois Pollution Control Board

