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HETA 2001-0005

Lewis Karesh
Acting Secretary
U.S. National Administrative Office
U.S. Department of Labor
200 Constitution Avenue, NW, Rm. C-4327
Washington, D.C. 20210

Dear Mr. Karesh:

Thank you for your request to assist the U.S. National Administrative Office (NAO) on a January 21-25, 2001, site visit to two Breed Technologies, Inc. plants in Tamaulipas, Mexico. The purpose of this interim report is to summarize our findings and assist the NAO in more fully understanding the health and safety conditions at the plants related to your investigation of NAO Submission 2000-01. We will send a final report later which will include recommendations to Breed Technologies based on our observations. These recommendations for improvements in the existing safety and health program are being provided at the invitation of Breed management.

Background

NAO Submission 2000-01 was submitted by Mexican workers, U.S. and Mexican workers' rights organizations, and U.S.-based labor unions under provisions of the North American Agreement on Labor Cooperation. The major allegation in the Submission is that the Mexican government has failed to enforce its labor laws and protect workers in these two plants from hazardous exposures to chemicals (solvents and glues) and risk factors for musculoskeletal injuries.

In October 2001, the NAO initially requested National Institute for Occupational Safety and Health (NIOSH) technical assistance to review NAO Submission 2000-01. We provided technical comments in several phone conversations with your staff. In December 2000, the NAO collected testimony from submitters at a public hearing in San Antonio, Texas. The company did not comment at the hearing, but had previously invited NAO to visit the plants to observe working conditions. In January 2001, NAO invited NIOSH investigators, and an industrial hygienist from the Occupational Safety and Health Administration (OSHA) Technical Center in Salt Lake City, to accompany their delegation as technical experts.

On January 22, 2001, we conducted site visits to the two plants, Auto Trim de Mexico and Custom Trim/Breed Mexicana. The site visits included walk-through tours, interviews with

plant management, records review, and nonconfidential interviews with workers in their work areas. On January 23, we participated in meetings with two local unions representing Auto Trim and Custom Trim/Breed Mexicana workers, an affiliate of the Mexican Confederation of Workers (Spanish acronym CTM) known as the Union of the Maquiladora Industry of Valle Hermoso (Sindicato de la Industria Maquiladora de Valle Hermoso) and the Industrial Union of Maquiladora Plant Workers and Assemblers of Matamoros and its Municipalities (Sindicato Industrial de Trabajadores de Plantas Maquiladoras y Ensambladores de Matamoros y su Municipio), and spoke confidentially with current Auto Trim workers at an off-site location in Matamoros. An attempt was made to meet confidentially with some current Custom Trim/Breed Mexicana workers but it was not possible to arrange. On January 24, we met with another CTM affiliate representing Auto Trim workers, the Union of Day Workers and Industrial Workers of the Maquiladora Industry (Sindicato de Jornaleros y Obreros Industriales y de la Industria Maquiladora or SJOIIM).

Summary of Walk-Through Tours

Walk-through tours of Auto Trim and Custom Trim/Breed Mexicana plants were conducted. The focus of the tours was to determine whether the observed exposures were similar to what was described in the Submission and by workers in the official hearing in San Antonio. We were not permitted use of video recorders or cameras and could only spend a relatively brief period (about one hour for each facility) observing the work.

Ergonomic Observations

Observations were mainly made in the areas where the steering wheels and gear shift handles were glued and sewn. In Auto Trim, each product line was organized in a U-shaped table where the covering was first glued onto the bare wheel or gear shift, pressed, sewn and trimmed as was described in the worker testimonies. In Custom Trim/Breed Mexicana we observed both the new U-shaped design and the older long tables which had previously existed at Auto Trim. According to the workers there is no rotation, and we were able to observe several work cycles. Based on those work cycles observed there was little variability between cycles. Thus we can assume that, although our observation time was brief, the work process we observed was fairly typical of the kinds of ergonomic exposures during the course of an entire shift. The description of the work process and ergonomic exposures given in the hearing and Submission was similar to what we observed.

The work was manually intensive, involving repetitive, forceful, and awkward movements of both upper extremities. All aspects of the work cycle involved frequent pinch grip postures. Several of the workers used small hand tools to help attach the leather covering to the wheel or gear shift or to trim the edges. Some of these hand tools were poorly designed with grip diameters that were too small and that required an awkward hand posture and contact pressure on the palm.

The company had an ergonomic assessment done by an outside contractor in 1996 and subsequently improvements were made. However, the followup audit by the consulting company commented on several recommendations that had not yet been implemented. In particular, the operation continues to be as repetitive, and in fact the production rate has even increased following some of the redesign changes. The company consultant noted these continued deficiencies and recommended job rotation as a method of decreasing repetition. Also, the consultant noted that many of the hand tools were poorly designed for the task and need to be replaced with more ergonomically designed alternatives. The company had implemented a rotation program where workers alternated between sitting and standing positions. This intervention may have relieved some musculoskeletal stress due to sustained standing and static postures but had no obvious impact on the repetitiveness and forcefulness of the upper extremity movements. Most of the workers we talked with preferred the standing position while sewing because their upper extremities were in a more comfortable position.

Conclusion: Conditions described in the Submission are generally consistent with our observations. Based upon our experience conducting studies of manually intensive jobs involving repetitive and forceful upper extremity exposures in a variety of manufacturing facilities in the United States, the types of musculoskeletal injuries recorded on company logs and those expressed by former workers at the public hearing are consistent with the biomechanical risk factors which exist in both plants. The highly repetitive work involving awkward hand/arm positions, which we observed in both plants, has been linked to a variety of musculoskeletal disorders, including tendinitis and carpal tunnel syndrome.

Industrial Hygiene Observations

Review of potential health hazards

Submitters alleged that workers are exposed to health hazards associated with use of chemicals, glues, and solvents at Auto Trim and Custom Trim/Breed Mexicana (Submission 2000-01, V.,C.4.a). Our observations and information obtained from management representatives, product labels, and the material safety data sheets indicate that these substances are currently being used at both Auto Trim and Custom Trim/Breed Mexicana. The chemical products used are mixtures of solvents and other ingredients including acetone, n-hexane, toluene, ethyl cyanoacrylate, nitromethane, polymethyl methacrylate, trimethyl benzene, Stoddard solvent, and petroleum hydrocarbons. Workers have potential for direct skin contact and exposure to airborne vapors of these substances.

According to Breed Technologies officials, the company has made a number of improvements in working conditions since it acquired the plants in 1997. One important improvement, for example, has been the partial substitution of water-based glue (green glue), which is less irritating and less toxic, for the organic solvent-based glues (Hallmark 7158,

“yellow glue” and Loctite 4471) and the solvents used for cleaning up excess glue on parts. However, the solvent-based products are still used in the process.

None of the workers observed were wearing respirators, because the company had made a determination they were not necessary for protection of employees' health. Given the information available, the use of air-purifying respirators for protection against chemical exposures in the steering wheel/shift knob gluing and finishing areas may neither be necessary nor the best solution to potential over exposures. There are several reasons for our conclusion: (1) The use of respirators is the least preferred method of controlling hazardous chemical exposures because of inherent problems in their use (substitution and engineering controls are preferred), (2) it is not possible to make a determination whether any employees are overexposed to chemicals used until further monitoring is conducted due to the lack of monitoring and exposure data for several chemicals used in the process, and (3) if chemical over exposures are measured in the plants, it appears that the existing ventilation systems can be feasibly modified to prevent hazardous or irritating chemical exposures.

Workers had potential for direct skin contact with glues and solvents at glueing work stations. We were not able to collect enough information to determine if dermatitis is a significant problem in the plants. Workers we observed during the walkthroughs appeared to have only minimal skin contact with the glues and solvents because of their skill in using brushes to apply yellow and green glues, and small bottles with applicator tips to apply Loctite 4471 instant adhesive. However, there was still potential for skin contact with the glues due to accidental spills or drips, and hand contact with solvents used on cleaning rags to clean up spills or excess glue on parts.

Adequate chemically protective gloves should be available for workers' use, but the gloves should be used as a control of last resort. The reasons for this are: (1) wearing chemical protective gloves all day, especially in a hot environment, can itself cause dermatitis and skin problems, (2) all glove materials are permeable given time, and wearing gloves can give a false sense of protection to workers, and (3) adequately protective gloves may not allow the workers sufficient manual dexterity and could exacerbate musculoskeletal problems. Most of the workers observed in both plants did not use gloves, and those who did typically wore a single glove on one hand. When asked, one worker reported she was wearing a single glove because she couldn't manipulate the parts at her station with both gloves on. Some of the workers were observed wearing gloves which did not fit well; this problem could be reduced by having several glove sizes available to fit different sized hands.

A. Auto Trim

Management reported that all of the chemical products have been used since 1998; some of them were used before that as well. The water-based green glue is a less toxic substitute for a solvent-based product which was used previously. Some of the

employees who work in the steering wheel and gear shift knob work cells have potential dermal and inhalation exposures to glues and solvents that they use.

Loctite 4471 Instant Adhesive (aka goma loctite, goma blanca, superglue) is used in small bottles with a dropper tip. According to Material Safety Data Sheet (MSDS) (hoja de datos de seguridad), the glue contains ethyl cyanoacrylate 85-90%, polymethyl methacrylate (CAS # 9011-14-7) 5-10%, and hydroquinone 0.5%. Ethyl cyanoacrylate is a potent respiratory and dermal irritant and can cause dermal sensitization. An organic solvent mixture (Loctite 76820 X-NMS, consisting of nitromethane and toluene), stored in small bottles with a brush tip, is used to clean up excess Loctite glue on steering wheels and shift knobs. Green glue (aka goma azul) was stored in wide-mouth containers, about 1 liter capacity, and applied with a hand brush. This is a water-based glue, and is relatively nontoxic, with no strong odor. Yellow glue (aka goma amarillo, Hallmark 7158) which contains acetone, hexane, and toluene, is stored in wide-mouth glue containers about 1 liter capacity and applied with a hand brush. Varsol (aka Stoddard solvent, mineral spirits) is stored in small covered bottles and used with a rag for cleaning glues off parts.

The plant had a ventilation system providing local exhaust ventilation (LEV) to many of the glue storage locations. Generally, LEV was provided to green glue and yellow glue storage containers, but none of the Loctite glue containers or work areas had LEV. Many of the LEV inlets consisted of a flat PVC cover over the end of the 4–5-inch diameter duct with about 20 ¼-inch holes drilled in it. It appeared that these inlets were originally designed as down draft hoods to be installed in work tables flush with the work surface, and they have been converted to serve as side draft hoods near glue containers and work stations. For either purpose the flat face inlets are poorly designed and do not reflect generally accepted design principles for industrial LEV.¹ Qualitative evaluation of these flat inlets with smoke revealed they were not effective in capturing vapors from glue containers or glueing work stations. Some of the glue containers were provided with a different type of LEV, mini hoods constructed of plexiglass. Evaluation with smoke revealed that some of these were effective in capturing vapors above glue containers. Some of the mini hoods were not functioning because the LEV system overall was poorly balanced. LEV hoods close to the exhaust fans worked well and those on the opposite side of the plant at the end of long duct runs functioned poorly or not at all. It is possible that the exhaust fans are not of adequate size to serve this system, which had long horizontal and vertical runs of ductwork. The system efficiency is reduced by frequent use of 90-degree bends to connect vertical ducts to the ceiling-mounted horizontal ducts and long vertical runs of corrugated flexible duct.

¹ ACGIH [2001]. Industrial ventilation, 24th ed. A manual of recommended practice. Cincinnati, OH: American Conference of Governmental Industrial Hygienists.

B. Custom Trim/Breed Mexicana

Ten workers were in each cell. At least two of the workers in each cell applied glues and or solvents. There was no LEV at the work stations using the superglue, or "goma blanca." Although it was not labeled, this appeared to be the product identified at Auto Trim as Loctite (4471 Instant Adhesive) glue. LEV (air extractors) was provided at some of the green glue stations. All of the LEV inlets observed were flat PVC covers on the ducts, about 5 inches diameter, with about 20 ¼-inch drilled holes in the cover. These inlets appeared to have been designed for use as down draft hoods in a table. Qualitative evaluation with smoke indicated that the flat inlets were not effective in capturing vapors from the glue containers or the glueing work stations. The flat LEV inlets were not as well-designed as the mini hoods used over glue containers at Auto Trim.

Very strong air currents occurred in the cell work area due to general ventilation, consisting of overhead perforated flexible plastic air supply ducts and open, wire-framed industrial air recirculation fans. There was so much air movement that it may be increasing evaporation of solvents in the glues.

Conclusion: Workers have exposures to potentially hazardous solvents and glues by skin contact and inhalation. The LEV system in both plants was not functioning effectively due to a combination of design and maintenance issues: poor balancing of duct branches, poor inlet (hood) design, excessive friction losses, and/or inadequate exhaust fans. Many of the worker health complaints mentioned in Submission 2000-01 (V.,C.4.c), such as respiratory and dermal irritation and central nervous system effects, are consistent with overexposure to these substances.

Worker Interviews

Nonconfidential Interviews

During the walk-throughs of both facilities, an attempt was made to ask workers about training and whether they had specific health complaints. During almost all of these interviews a representative from the company was within hearing distance. This is not in keeping with normal NIOSH methods because nonconfidential interviews may hinder workers speaking freely. Some workers stated that the only training they had was when they were first hired while others stated that they received periodic training. Most workers did not express any health complaints or problems. One worker did complain of hand pain and stated that there were others who had similar problems but were afraid to make an official complaint for fear of losing their jobs.

Confidential Interviews with Current Auto Trim Workers

Interviews were conducted off-site with several current Auto Trim workers. The workers said that they had many of the same health complaints detailed at the public hearing by former Auto Trim and Custom Trim/Breed Mexicana workers. They discussed attempts to become part of the plants' safety and health mixed committees, but said they were blocked from participation by the union. The workers said that they were asked to sign forms indicating that they had safety and health training, but they reported that no information about the training was on the form and no training had occurred.

STPS Enforcement Activities

A review of relevant records at the two plants revealed that the Secretaría del Trabajo y Previsión Social (STPS), the Mexican equivalent of U.S. federal OSHA, had conducted annual inspections at Auto Trim and Custom Trim/Breed Mexicana since at least 1997. The company made copies of the inspection reports available to us for review. These are announced inspections. According to Breed officials, the company typically gets one to two days notice from STPS prior to an inspection. All of the reports we reviewed appeared to be periodic or verification inspections. There was no evidence that any of the inspections were special inspections done in response to worker complaints at Auto Trim or Custom Trim/Breed Mexicana.

The inspection reports reviewed indicate that STPS inspectors interview selected workers, usually two per site visit. These interviews are not confidential; the workers' name, job title, and employee identification number was listed in the inspection reports along with their answers to specific questions, such as whether they were provided hazard training. It is our experience that nonconfidential worker interviews are of limited utility because workers may not feel free to mention safety and health problems without fear of losing their jobs.

It was apparent from reviewing STPS inspection reports that inspectors use a checklist approach focusing primarily on reviewing documents provided by the employer to demonstrate the existence of certain components of a safety and health program. For example, the STPS inspector reviewed documents regarding maintenance of a ventilation system, but the reports provided no indication that the STPS inspector made a direct evaluation of the ventilation system in either plant. STPS inspectors did not conduct environmental monitoring for chemical exposures to verify results reported by the company. The inspections also included a walk-through in which the inspectors looked at a variety of safety issues, including storage and handling of chemical substances. A 1995 consultative visit (not a compliance inspection) by STPS to Auto Trim did address the working conditions of concern in the Submission, specifically ergonomic and chemical exposure concerns (see "Meeting with local labor unions") below. STPS provided a number of recommendations to the company. Subsequent STPS compliance inspections at both plants did not address the worker complaints outlined in the Submission or recommendation from the 1995 consultation visit.

Although the thoroughness of the inspection recommendations appears to have improved between 1997 and 1999, the major focus of the STPS inspection recommendations at Auto Trim and Custom Trim/Breed Mexicana was on issues of illumination, warning signs, or safety rather than chemical or ergonomic exposures. The Auto Trim report from 1999 did refer to a need for better labeling of chemical containers and to keep chemical containers closed when not in use, however, most industrial hygiene issues are deferred to reports of programs or to sampling reports done by private consultants. In no inspection was there any mention of any issues related to ergonomics.

The Auto Trim workers that we interviewed confidentially said they were not informed about any of the STPS inspections in their plant. STPS inspection reports are provided to the employer and the safety and health committees, however it was reported that they are not available upon request to any interested worker.

Conclusion: STPS has conducted routine inspections at both plants for at least the past several years. These inspections follow a checklist format and were primarily focused on review of company documents regarding their safety and health program and identification and abatement of safety hazards. When the inspectors attempt to validate the existence of the company's training programs they use nonconfidential worker interviews which may be unreliable. There is no evidence that STPS made special inspections as a result of the specific written ergonomic and chemical exposure complaints submitted by workers. There was no evidence that STPS has addressed prevention or reduction of risk factors for musculoskeletal injuries in compliance inspections.

Meeting With Local Labor Unions

Meetings were held with all three of the labor unions representing the workers. Representatives of two of these unions, Union of the Maquiladora Industry of Valle Hermoso (Sindicato de la Industria Maquiladora de Valle Hermoso) and Industrial Union of Maquiladora Plant Workers and Assemblers of Matamoros and its Municipalities (Sindicato Industrial de Trabajadores de Plantas Maquiladoras y Ensambladores de Matamoros y su Municipio), stated that there were no problems in the Breed facilities and that they had good functioning safety and health committees that found no significant problems. They also both denied any knowledge that workers from the plants had filed official complaints.

Representatives of the SJOIIM, which represents Auto Trim workers, were very aware of the concerns of the workers and stated that they had actively intervened to try and improve conditions in the facilities. They allowed us to view a series of three letters, all dated from September 1995, but would not provide a copy to us.

In the first letter, on September 5, 1995, the officers of the local branch of the national CTM union in Matamoros sent a letter to Fidel Velazquez, Secretary General of CTM, asking him to

look into a reported problem with working conditions at the Auto Trim plant. The letter referenced ergonomic problems reported by workers at Auto Trim de Mexico, and said that workers at the plant had reported musculoskeletal injuries. STPS made a site visit to Auto Trim (apparently a consultation visit) on September 14, 1995. On September 22, 1995, Dr. Juan Antonio Legaspi, Director General of Occupational Safety and Health, STPS, sent a detailed letter to Auto Trim management which referenced the September 14 site visit. His letter indicated that the STPS representative had found problems with the working conditions, and it provided many recommendations for improvements. It was clear that this was a technical consultation letter, not a compliance letter. Most of the recommendations concerned improving the ergonomics program and reducing risk factors for musculoskeletal injuries. He also recommended further air monitoring and biologic monitoring to assess workers' chemical exposures, and installation of LEV to control exposures at the glueing work stations. The company reportedly made a number of changes after this letter, including installing the air extractors, and obtained an outside ergonomic consultation which led to some changes in the work stations making them more ergonomically sound.

Conclusion: The STPS response in 1995 to the CTM complaint shows that it has the capability to address complaints regarding ergonomic and chemical exposure hazard and provide a relevant and competent response in a timely manner. However, in this instance it was done outside the compliance inspection process. There was no evidence in STPS compliance inspection reports that worker complaints at Auto Trim were considered, or that compliance inspectors were aware of the 1995 STPS letter.

Employer's Evaluation of Chemical Exposures and STPS Response

Annual air monitoring for various solvents (in glues and cleaning solvent products) has been done at Auto Trim and Custom Trim/Breed Mexicana. Exposures were measured by STPS-certified consultants in Matamoros including HARDT and EcoTech. Concentrations of all substances which were included in the evaluations, including n-hexane, acetone, mineral spirits, trimethyl benzene, and polymethyl methacrylate were reported to be below their individual STPS maximum permissible exposure limits (LMPEs) in NOM-10-STPS-1999, Appendix 1. However, the consultants' reports were significantly flawed in that they did not appear to be in compliance with Mexican standards on how chemical exposure evaluations are to be done. The three primary deficiencies are explained below.

Number of Workers Sampled

NOM-10-STPS-1999, Evaluation, Section 8.1 a), Table 4 requires that a minimum number of workers be monitored for each "homogeneous exposure group" defined for the workplace. In Auto Trim and Custom Trim/Breed Mexicana there were more than 50 workers at each plant (2 per cell) in a homogeneous exposure group that could be defined as workers who apply glues and solvents to cut leather pieces and attach them to steering wheels or shift knobs.

Workers in these groups were exposed to ethyl cyanoacrylate, polymethyl methacrylate, nitromethane, hydroquinone, toluene, acetone, hexane, and other compounds. For each exposure group of >50 workers, Table 4 indicates that a minimum of 22 workers are to be sampled. (Table 4 is from a random sampling strategy for “homogeneous risk groups” developed by NIOSH in 1977.)² It did not appear that the consultants sampled the minimum number of workers required for all of the potential chemical hazards at Auto Trim and Custom Trim/Breed Mexicana. Further, there was no information in the consultants’ reports about how the workers who were sampled were selected. Selection of workers for monitoring is a critical issue in conducting evaluations of workplace conditions which are valid and represent actual working conditions. In the records made available to us, there was no evidence that STPS noted this deficiency in the consultants’ reports or required that the employer comply with the requirements that a minimum number of workers be included in evaluations.

Selection of Contaminants to be Included in Workplace Evaluations

NOM-10-STPS-1999, sec 4, Definitions, defines contaminants of the workplace environment as all substances that are capable of affecting the workplace environment and altering or upsetting the health of workers. Under NOM-10-STPS-1999, sec 5.3 and 5.4, the employer is responsible for doing studies to evaluate exposures to all contaminants of the workplace environment. The primary ingredients of Loctite 4471 Instant Adhesive (ethyl cyanoacrylate, 85-90%), Loctite X-NMS Clean Up solvent (nitromethane, 90-100%), and Varsol (Stoddard solvent) meet the definition of a workplace contaminant. In the consultants’ reports which we reviewed, no workplace monitoring was done for these chemicals at Auto Trim or Custom Trim/Breed Mexicana. The consultants provided no information in the reports on their rationale for selection of chemicals to include in the evaluations.

The chemicals that were omitted from evaluations reviewed are generally recognized hazards. There is a Mexican LMPE (#417) for nitromethane of 100 parts per million (ppm) as a time-weighted average (TWA). The current American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Value® (TLV) for nitromethane is 20 ppm as a TWA. There is a Mexican LMPE (#242) for Stoddard solvent (disolvente stoddard) of 100 ppm as a TWA, which is the same as the ACGIH TLV. The ACGIH TLVs are updated

² NIOSH [1977]. Occupational exposure sampling strategy manual. Cincinnati, OH: U.S. Department of Health, Education, and Welfare, Centers for Disease Control, National Institute for Occupational Safety and Health, DHEW (NIOSH) Publication No. 77-173.

and published annually.³ TLVs are the primary international source of standards for industrial health. STPS has not established an LMPE for ethyl cyanoacrylate, evidently because the existing LMPEs were derived from a pre-1998 version of the TLVs. However, of the substances used in these plants, ethyl cyanoacrylate is potentially the most likely to cause eye, skin, and respiratory tract irritation or allergic sensitization. Based on the recognized health effects, in 1996 ACGIH proposed a TLV® of 0.2 ppm for ethyl cyanoacrylate, and it was formally adopted in 1998.

In the records we reviewed, there was no evidence that STPS noted this or required that the employer comply with NOM-10-STPS-1999, sec 5.3 and 5.4. As an example, on July 10, 1997, Breed sent a report of monitoring results to STPS in which results for mineral spirits, naphtha, trimethyl benzene, acetone, hexane, toluene, polymethyl methacrylate, carbon monoxide (CO), and carbon dioxide (CO₂) were presented. All of the results were below their respective Mexican LMPEs. According to the report, no monitoring was done to measure nitromethane or ethyl cyanoacrylate levels. STPS sent a letter to the company dated October 13, 1997, accepting the consultant's report and telling the company to maintain these conditions in the future.

Evaluation of Employee Exposures to Chemical Mixtures

NOM-010-STPS-1999, Evaluation, Section 8.5 requires that when workers are exposed to a mixture of two or more chemical substances for which there is an LMPE, the exposures should be evaluated according to the additive effects rule in Part I.4. This rule, which evidently was derived from a long-standing ACGIH rule for applying the TLVs,⁴ indicates that when two or more hazardous chemicals which affect the same organ system are present, their combined effects should be given primary consideration rather than individual effects. For example, according to the MSDS we reviewed, the yellow glue (Hallmark 7158) used at the two Breed plants contains a mixture of acetone, n-hexane, and toluene. All three substances affect the central nervous system, so Breed consultants should have used the additive effects rule in Part I.4.2 to evaluate the employee exposures to this mixture. This was not done in the reports; the consultant only compared the concentration of individual constituents to their respective LMPEs. In the records we reviewed, there was no evidence that STPS noted this deficiency or required that the employer comply with NOM-10-STPS-1999, Section 8.5.

³ ACGIH [2000]. 2000 TLVs® and BEIs®. Cincinnati, OH: American Conference of Governmental Industrial Hygienists.

⁴ ACGIH [2000]. Appendix C: Threshold Limit Values for Mixtures, In: 2000 TLVs® and BEIs®. Cincinnati, OH: American Conference of Governmental Industrial Hygienists.

Conclusions: The STPS-certified consultants' evaluations of chemical exposures at Auto Trim and Custom Trim/Breed Mexicana apparently did not meet several requirements of Mexican standards regarding methods for chemical exposure evaluations. Due to lack of adequate exposure monitoring for all potential chemical hazards present, their reports are inconclusive. It is not possible to make a conclusion from the reports reviewed whether employees are overexposed to (airborne) chemical hazards. There was no evidence that STPS inspectors conducted any monitoring of chemical exposures in the plants. STPS appeared to rely entirely on the consultants' evaluations of chemical exposures and the consultants' conclusions regarding acceptability of workplace conditions. The records provide evidence that over a period of several years the consultants reports to STPS failed to meet the Mexican standards regarding methods for chemical exposure evaluations, and there were no STPS citations for these deficiencies.

Reported Birth Defects among Workers' Families

In the Submission and at the hearing workers presented concerns that several cases of birth defects and other adverse reproductive outcomes among workers' family members were caused by the father's or mother's chemical exposures at Breed facilities. Several workers described specific birth defects that fall under the general category of neural tube defects. We were unable to make any determination regarding these concerns based on our site visit. In order to determine whether the rates of adverse reproductive outcomes are elevated, it is necessary to have data available on the total number of births and the number of cases of neural tube defects, miscarriages, or other adverse reproductive outcomes. Since this information was not available to us during the site visit it is impossible to determine whether the rates at the Breed facility are elevated. However, we are aware that the Texas Department of Health has been collecting statistics on neural tube defects at the U.S.-Mexican border for the past decade and has documented a continued but stable increase in the rates of neural tube defects in the border region compared to the rest of the United States. Based on these elevations, several large-scale epidemiologic studies have been initiated in the region by several Texas university researchers and by the Texas Department of Health. These studies are evaluating potential factors which may be associated with this increase in cases of birth defects, including occupational, environmental, nutritional, and other factors. The occupational portion of the Texas Department of Health study, which will provide scientific data on the potential link between occupational solvent exposures in the border region and birth defects, should be available later this year. The U.S. and Mexican governments have been collaborating under the auspices of the Border XXI program to improve joint programs of surveillance for neural tube defects in the border region and to develop prevention programs focusing on dietary deficiency of folic acid (or folate) among women of childbearing age. Continued support for these collaborative efforts as well as continued funding for ongoing and new research efforts is necessary to explain and prevent cases of neural tube defects in the border region.

We appreciate the opportunity to assist your office. If there are any questions, please feel free to contact us. Beyond this site visit, we are interested in working with your office on projects and activities designed to help build local capacity to provide safe and healthy working conditions on both sides of the U.S.-Mexico border.

Sincerely yours,

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bcc:

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Keywords:

SIC: 3199 Leather Goods, Not Elsewhere Classified

IH Determination: not determined

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