



Health, Safety and Environmental Issues in Haiti

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Prepared for the Inter-American Development Bank by the Cahn Group, LLC

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I. Introduction

This project was initiated and funded by the Inter-American Development Bank (IDB) with the goal of two distinct outcomes: (i) the delivery of training on health, safety and environmental (HSE) issues directly to supervisors and workers of apparel factories in Haiti, and to the Enterprise Advisors of Better Work Haiti (BWH) who are responsible for apparel factory assessments and advisory services, and (ii) the creation of a document which summarizes the major HSE issues confronting the industry in Haiti and throughout the world, the best practices which are developing around these issues, the role of the Better Work program in Haiti, and recommendations and proposed actions to enhance HSE performance in the Haitian apparel industry. This project has encompassed three missions to Haiti (in May 2012, and April and October 2013), the preparation of an initial Discussion Paper after the first mission, and now this update and revision of that Discussion Paper.

The IDB has a keen interest in the apparel manufacturing sector in Haiti, in part due to the Bank's investment strategy in Haiti. As a means of risk management in this sector, the IDB seeks opportunities for collaboration with organizations such as Better Work, which during the past decade has established a presence in the apparel industry in seven developing nations around the world, one of which is Haiti.¹

Better Work is a global partnership of the International Labor Organization (ILO) and the International Finance Corporation (IFC) which utilizes the labor expertise of the ILO with that of the IFC in private sector development. The focus of Better Work is on the working conditions in global apparel supply chains, offering monitoring and customized advisory and training services to factories in this sector. The Better Work program aims to improve factory compliance with the ILO core labor standards and national labor laws, and to enhance the competitiveness of participating factories.

Serge-Henri Troch, Stephanie Brackmann and Melissa Barandiaran, all members of the IDB's Environmental Safeguards Unit (VPS/ESG), were the liaisons from the Bank for purposes of creating, implementing and funding this project. Richard Lavallée, the Chief Technical Advisor for BWH, and Janika Simon, Technical Officer, were the principal liaisons from that organization for the purpose of supporting the delivery of the training workshops.

The Cahn Group, LLC, a corporate responsibility consultancy, was selected to lead the training workshops and draft this Discussion Paper. Doug Cahn, principal of The Cahn Group, and Bob

¹ The other nations in which Better Work programs operate are Cambodia, Nicaragua, Jordan, Lesotho, Vietnam and Indonesia.

Clifford, senior advisor to The Cahn Group and industrial hygienist, comprised The Cahn Group project team.²

As mentioned, this paper represents one of the two desired outcomes of this project. It is intended to serve as a resource on the current status of HSE issues in the apparel industry in Haiti.

Section II of this document provides a brief description of the content of the workshops which have been conducted in Haiti and the target audiences. The possible future utilization of the training information and materials in shorter training modules is discussed.

Section III is intended to be a resource for IDB staff and other stakeholders with interests in the apparel industry, whether globally or specifically in Haiti. The HSE issues which comprise the core of this section have provided the focus of the training workshops. The recommendations and proposed action plans on these issues are offered to enhance HSE performance in the Haitian factories and to further collaborative efforts with Better Work in Haiti and in other developing countries.

Section IV serves a cohesive role by providing some conclusions and final thoughts on the issues which have been addressed in the paper.

II. Inter-American Development Bank Workshops Presented in Collaboration with Better Work Haiti in Port-au-Prince and Caracol during 2012-2013

A. Background and Workshop Objectives

The first objective of the project was the delivery of training on HSE issues directly to management personnel and workers from apparel factories and to the Enterprise Advisors of BWH. The IDB selected BWH as its collaborating partner in Haiti for the delivery of these training workshops, and a brief description of the broader role of BWH in the garment industry is appropriate for a better understanding of this project.

The BWH program was launched in June 2009. An Act of the U.S. Congress which was enacted into law during the previous year (Haitian Hemispheric Opportunity through Partnership Engagement, or HOPE II) requires that apparel producers in Haiti which

² For more information about The Cahn Group, LLC, see: <http://www.thecahngroup.com>.

export to the United States participate in the BWH program as a condition for the trade program benefits. BWH has released Biannual Synthesis Reports (as required by HOPE II), the most recent being in October 2013³, which included a summary of findings for the twenty-three apparel factories that underwent assessments by BWH during the period from May to August 2013, as well as a discussion of the BWH training and advisory services which were provided to factories during the same time period.

The Better Work Compliance Assessment Tool (CAT) is the audit document which is utilized by the Better Work programs to compare factory performance against the ILO core labor standards and the national labor codes. In the absence of benchmarks from these sources, the CAT relies on relevant international standards and/or acknowledged best industry practices. There are eight main “clusters” of labor standards which are uniform across the Better Work programs: child labor, discrimination, forced labor, freedom of association and collective bargaining, compensation, working time, contracts and human resources, and lastly, occupational safety and health (OSH).

Within each of the eight clusters, there are several compliance points, each of which further has its own set of questions (or aspects). At the level of the compliance points and questions, there may be differences among the Better Work programs which reflect variations in labor codes and the relative importance of particular labor issues in each country. The result is a CAT document, slightly different for each country program, which may contain a total of as many as 200 - 400 questions. Individual factory reports are generated based upon the CAT findings, and are available for purchase by factory and industry stakeholders such as their customers, other apparel brands, investors such as IDB, non-governmental organizations (NGOs), etc., with the consent of the factory.

While the CAT and its guidance document provide the content and benchmarks for a BWH assessment, the related investigative process is equally thorough: there are interviews with workers, management and union representatives, document review, and observations made during walks through the factory. All of this evidence is utilized in a determination of the factory compliance status on these issues.

The recent BWH Synthesis Report commented that “Despite Better Work Haiti’s numerous efforts ... OSH continues to be a cluster where there are high rates of non-

³ Better Work Haiti: Garment Industry 7th Biannual Synthesis Report Under the HOPE II Legislation (see: <http://betterwork.org/global/?cat=12>)

compliance.”⁴ The Report also described the efforts made by BWH to mitigate these OSH deficiencies, including:

- Assisting in the establishment of OSH Committees at the factories;
- Building the capacity of OSH Committee members to conduct OSH assessments in their factories;
- Providing training sessions on fire safety (a global Better Work priority in 2013), including an inspection checklist which can be used by the factories, and enlisting the assistance of the Port-au-Prince Fire Department; and
- Raising worker and management awareness on a broad range of OSH issues by various means, such as the annual “Safety and Health at Work” fairs, which have been held at the SONAPI Industrial Park in Port-au-Prince on April 30, 2012 and April 27, 2013.

To reinforce these capacity-building efforts, one major objective of this consultancy was to support a collaboration between the IDB and BWH in the presentation of various training workshops which would focus on health, safety and environmental (HSE) issues. As mentioned, the target audiences would be representatives of factory management and worker members of the newly established factory OSH Committees. After the first mission, it was decided to include the Enterprise Advisors of BWH as a third target audience. While the workshop content for the first two audiences would entail a similar broad range of the HSE issues that face the apparel industry, there would be differences in the material based on the anticipated roles to be assumed by management and workers in the achievement of a safe and healthy workplace. In addition, workshops for the BWH staff focused on more technical HSE information in support of their assessment, training and advisory efforts. All workshops were designed to foster as much audience participation as possible, and to include an element of guided in-factory practicum whenever appropriate and feasible.

To begin, IDB staff identified the need for OSH training in Haiti as a priority for support of its private sector lending investments in Haiti and elsewhere in the region. The IDB then conceptualized an initial approach to training that included both factory managers and OSH committee members in the Haiti garment sector industry that would provide lasting benefit in Haiti and, potentially, to other IDB investments in the region. Eventually, the BWH staff was included as a separate target audience for their own capacity-building workshops. After preparation of Terms of Reference and selection of The Cahn Group, LLC as the project partner, the IDB provided periodic advice and

⁴ Ibid. Page 19.

comment during the development process of the training content. Together with BWH, the IDB provided input on the desired learning objectives of each workshop. BWH provided numerous photographs that had been taken by Advisors in Haitian apparel factories, some of which were incorporated into the workshop presentations (and into this Discussion Paper as well). Brief videos, case studies, and/or group exercises were integrated into the presentations. BWH handled the publicity for the workshops and arrangements for the training locations in Port-au-Prince, including food and beverages, while IDB addressed other support and logistical matters, most notably securing a skilled and engaging interpreter so that the sessions could be conducted in Creole and French as well as English. The IDB handled all of the logistical arrangements for the workshops at the Industrial Park in Caracol. Finally, the IDB assisted in the development of the workshop evaluation forms which were provided to attendees.

B. Workshops for Garment Factory Management Representatives

Training workshops for representatives of the factory management teams have been held on all three of the missions to Haiti. Generally the core content includes an overview of HSE issues in the apparel industry, a summary of the BWH experience in the Haitian garment sector, global best practices in addressing these issues, the possible benefits of an OSH Committee and the role of management in the function of these Committees, and the evidence of a relationship between improved worker health and safety and increased productivity. In Port-au-Prince, these workshops have been conducted in a classroom environment only.

In April of 2013, to support the declared global Better Work priority on fire and life safety issues in the apparel industry, a half-day workshop was conducted in Port-au-Prince for factory management representatives which focused predominantly on these issues. Several disasters in the global apparel industry had occurred since the beginning of this project, and these served as the driver for the Better Work effort.⁵ Information from these events which had been reported in the international press was presented during the workshop, so that attendees were made aware of the alleged facts, factory conditions and other factors which may have played a part in causing the fires and/or contributing to the loss of life. The group then identified risks associated with these two catastrophes which may be relevant to their own factories in Haiti, and a discussion on risk mitigation ensued. Coincidentally, the factory building collapse at Rana Plaza in

⁵ These included a factory fire at Ali Enterprises in Pakistan in September 2012, with approximately 112 fatalities, and a fire at the Tazreen Fashions factory in Bangladesh in November 2012 where an estimated 289 workers died. At the time of their occurrence, these were the largest industrial disasters (in terms of fatalities) in the history of these two countries.

Bangladesh which resulted in more than 1100 deaths and focused worldwide attention on the hazards of the apparel industry had occurred only a few days before this workshop, so that the audience could not have been more sensitized to the subject matter of this session.

During the mission in October of 2013 a workshop was conducted at the new Industrial Park in Caracol in the north of Haiti. It was intended for factory management as well as representatives of other stakeholders at the Park, including the construction companies, the Park management, the utility services and the Haitian government (UTE). Because apparel production is not the only type of manufacturing operation at the Park, and given the heterogeneous nature of the audience, the breadth of information went beyond that presented at workshops in Port-au-Prince to include HSE issues associated with paint manufacturing (Peinture Caraïbes) and power generation. This workshop also provided the opportunity for in-factory practicum on HSE hazard recognition with tours of the Peinture Caraïbes factory (paint) and the S&H Global factory (apparel).

Over the course of the three missions to Haiti, an estimated total of 75 factory management representatives and other stakeholders have attended these workshops on HSE issues.

C. Workshops for Worker Representatives of OSH Committees

During the first and particularly the third mission, workshops were offered for garment workers who served on the OSH Committees at their factories. The emphasis on active OSH Committees comes from the Better Work philosophy that this is a necessary mechanism to ensure worker/management cooperation on OSH issues.

These workshops included some of the same information as those for management. An overview of common HSE issues on the apparel industry, the BWH experience in Haitian factories, and global best practices on HSE issues were discussed. But because the audience consisted of OSH Committee members, more time was spent on Committee representation, Committee activities and appropriate roles for members. And emphasis was given to HSE hazard recognition and risk assessment, since factory inspections are a Committee activity that is envisioned by BWH.

During the third mission, a separate “advanced” workshop was offered to workers at factories in the Metropolitan Industrial Park (PIM) in Port-au-Prince who had attended the initial training session in May 2012. The intended benefits from this workshop

included: a review of basic HSE information, a reality check on the actual activities of these OSH Committees during the intervening time period, an opportunity to share experiences with workers from other factories, and the introduction of more detailed information on hazard recognition and risk assessment, particularly as this applies to hazardous chemicals, the information on Safety Data Sheets (SDS), and the use of personal protective equipment. It was hoped that this workshop could include walk-through visits to one or more factories in the PIM to practice what had been learned, but no factories were willing to permit access for this activity. As an alternative, a group exercise was designed to draw on the collective resources of the audience. At the beginning of the session, attendees were asked to identify a difficult or unresolved HSE issue at their factory. These were reviewed by the instructors, and then presented as a group of hypotheticals. Each hypothetical was assigned to an OSH Committee from a factory other than the one which had raised the issue initially, for discussion and recommendations to the group as a whole.

At Caracol, the workshop for OSH Committees was limited to workers from S&H Global, since Peinture Caraibes had not yet established a Committee. Factory management permitted access to the production areas for practice in hazard recognition and risk assessment, so the classroom element was condensed to allow time for the in-factory practicum.

Over the course of the three missions to Haiti, these workshops reached an estimated total of 160 workers who serve on factory OSH Committees.

D. Workshops for BWH Enterprise Advisors

During the first mission to Haiti (May 2012), some BWH Advisors attended the workshops for factory management representatives and for workers on OSH Committees by virtue of their role as logistical facilitators. Discussion with these Advisors, and subsequently with Richard Lavallée, the Chief Technical Advisor for BWH, identified a possible need for training of the BWH staff on specific HSE issues.

The tragic fatal fires in the garment sectors of Pakistan and Bangladesh late in 2012 (see footnote 5), and the subsequent decision by the global Better Work program to make fire and life safety issues a priority in 2013, provided the backdrop for a workshop for the BWH Advisors. A classroom session devoted to many aspects of fire and life safety, including some that were beyond the scope of the CAT document, was convened during the second mission in April of 2013. Again, the coincidental timing with the Rana Plaza

disaster heightened the interest of the attendees. In addition to the classroom activity, BWH obtained permission from two factories for practice on assessment of fire and life safety issues. These factory walk-throughs also were attended by several representatives from those factories who had been participants in earlier workshops.

During the third mission to Haiti in October 2013 another workshop was conducted for the BWH Advisors. This dealt with the common chemical hazards in the apparel industry, and some time was devoted to the reading of Safety Data Sheets, and distinguishing information which may be relevant and useful from that which may simply be generic. Again, a good deal of the discussion went beyond the content of the CAT on chemical safety issues.

E. Future Use of Workshop Materials

While the workshops which were conducted in 2012 and 2013 have reached a total audience of almost 250 factory managers, supervisors, workers and BWH Advisors, clearly it would be desirable to provide similar training opportunities to additional personnel in the apparel industry in Haiti. However, day-long workshops can be difficult to schedule, so a first step may be the identification of discrete segments of these presentations that could be offered as stand-alone training sessions of shorter duration e.g., one to two hours.

The information on OSH Committees could be adapted and packaged easily as a single, short training session for other audiences of Committee representatives or managers with HSE responsibilities, particularly at those factories in which the OSH Committee is newly or not yet created. Since BWH has already been engaged in such training during the past year, it may be more effective to integrate the relevant information from these workshops into the existing training framework which is utilized by BWH to create a single session on OSH Committees.

A related training module derived from these workshops could address OSH hazard recognition and risk assessment, and while OSH Committee members would be the primary target audience for this module initially, eventually this could be expanded to include the entire worker population. It is likely that additional notation to the original PowerPoint materials and the handouts for case studies and group exercises would be needed to ensure that the intended message is understood and delivered by whoever would present the subsequent training.

Similarly, the information on the commonly recognized OSH issues in apparel manufacturing and the best practices in regard to these issues could be presented as an independent training module to all levels of factory personnel, or in combination with one or more of the other proposed modules. Again, the original PowerPoint materials may require supplemental notes to ensure that the message is consistent with the original intent.

In addition, the sessions which were conducted for BWH Advisors on fire and life safety and aspects of chemical safety could be modified and the information packaged as discrete modules for a more advanced factory audience whose members have already participated in other workshops on OSH issues in the apparel industry and on the basics of hazard recognition and risk assessment.

The information on environmental issues that has been presented in the workshops to date may be too superficial to utilize in a separate training session. Fortunately, the major environmental concern associated with apparel manufacturing – wastewater effluent from finishing processes – has not yet been encountered in Haiti because the operations in virtually all of the factories are limited to “cut and sew” processes with very limited environmental impact. However, it is anticipated that some finishing operations will come on-line in the Park in Caracol soon.

The brief segment on the economic benefits of worker safety and the relationship among worker safety at the factory, general worker health and worker productivity may serve as the foundation for a more fully developed training presentation to upper management personnel at Haitian apparel factories, but as it exists currently it is likely not adequate as a separate training module. Alternatively, the information could be incorporated into any existing session materials that BWH may use at meetings with the upper management personnel of newly engaged factories or recalcitrant factories.

It seems reasonable that any use of the training materials and information which have been created for the workshops of this project should be consistent with those utilized by BWH, since that organization is the principal OSH training provider in the Haitian garment industry at the present time.

III. Discussion Paper: Assessment and Mitigation of Health, Safety and Environmental Risks in the Garment Assembly Industry in Haiti

This Discussion Paper is based largely upon and adheres to the framework of the information and materials which were presented in the workshops in Haiti. However, it also draws on the observations and experiences of the TCG personnel during the three missions to Haiti, and it reflects the learnings from the several disasters that the global apparel industry has suffered recently. It is intended that the paper will serve several purposes:

- Provide basic information on HSE issues in the apparel industry, including generally recognized best practices;
- Discuss the capacity of BWH in regard to the current and future HSE issues likely to be encountered in the apparel industry in Haiti;
- Identify general recommendations for improvement on HSE issues and propose a specific action plan for future steps to enhance HSE performance in the apparel industry in Haiti; and
- Lead to the recognition of potential opportunities for improvement on HSE issues in IDB investments related to the apparel industry.

As a preliminary matter, common terms should be distinguished: “garment assembly industry” and “apparel industry” (or “garment industry”). In the context of this document, the term “garment assembly industry” refers specifically to the limited industrial operations resulting in the export of clothing that currently exist in Haiti i.e., virtually all “cut and sew” operations in which garments are assembled with few, if any, finishing operations. The broader terms “apparel industry” or “garment industry” are used interchangeably to refer to manufacturing which encompasses the entire gamut of processes which may be involved in the production of apparel including dyeing, printing and washing. “Garment assembly industry” should be viewed as a subset of “apparel industry” and “garment industry”.

A. Current Status of Health, Safety and Environmental Issues in Garment Assembly Factories in Haiti

Before the specific status of the factories in Haiti is discussed, some basic information on the common HSE issues which are generally encountered in the apparel industry is appropriate. The list is not intended to be exhaustive, but simply to provide an overview of the major HSE issues which are encountered in apparel factories throughout the world.

A.1. Common Health, Safety and Environmental Issues in the Apparel Industry

A brief discussion of the following issues may provide some context before the experience of BWH is presented. These HSE issues have been identified as pervasive throughout the apparel industry and certainly are concerns in Haiti:

- Fire and Life Safety (including related aspects of Electrical Safety) ;
- Machine Safety issues;
- Chemical Use for spot cleaning;
- Ergonomics; and
- Personal Protective Equipment (PPE).

Certainly, other HSE issues beyond those on this list exist in the apparel industry in developing countries: electrical safety issues related to worker safety, noise, first aid and health services, the need for safe drinking water, toilets and associated facilities, among others. Of course the major concern in the industry after the catastrophe at Rana Plaza in Bangladesh is the structural integrity of the factory buildings. However, building structural safety is not thought to be a traditional HSE issue, and discussion here will be limited to related Life Safety considerations. The major environmental issue is wastewater effluent, but because that is not currently a significant concern in Haiti, no discussion is presented here, but appears instead in section III. B.

A.1.1. Fire and Life Safety (including related aspects of Electrical Safety) are actually two distinct issues, although often considered as one. Fire Safety involves the protection of persons and property from a single type of harm – fire – while Life Safety addresses the protection of persons from harm associated with many types of potentially catastrophic events, such as fire, but also encompasses natural disasters such as hurricanes, floods or earthquakes, and other incidents such as structural failures in buildings and large-scale chemical spills or releases. Consideration of Fire and Life Safety as a single issue creates the possibility that factory planning related to other life-threatening events such as natural disasters is neglected.

Fire Safety issues include both reactive and proactive elements. Traditionally in the factory assessment efforts in the global apparel industry, it is the reactive side of the issue that receives the greater attention: the fire detection and alarm systems in a factory, the fire-extinguishing equipment which is available, and the personnel in regard to their roles in the event of a fire. The availability of appropriate fire-extinguishing equipment such as portable extinguishers, fire hoses or sprinklers is merely one

necessary element of a fire safety program. Factory personnel must understand the expectations associated with a fire, and must be prepared to fulfill those expectations. Response planning is critical in several respects, such as the coordination with local community services and responders in the event of an incident.

However, there are also proactive elements of Fire Safety which if addressed properly can reduce the likelihood of the occurrence of a fire. These include considerations related to two of the three “sides” of the “fire triangle”: (1) flammable or combustible materials which may serve as fuel, and (2) potential ignition sources. (Oxygen completes the fire triangle, or the three required elements for the occurrence of a fire.)

The primary planning consideration associated with flammable and combustible materials is their location, both with respect to potential ignition sources in the factory and in relation to the emergency egress routes. Such materials are plentiful in apparel factories: the fabric materials, the apparel products, the packaging, and often the chemicals that are used for spot cleaning. These all represent potential “fuels” for a fire. In general, large quantities of these materials should be kept segregated from major egress aisles, emergency exits, and possible ignition sources, such as electrical panels and potentially excessively hot equipment such as boilers and emergency generators.

Obviously, the considerations pertaining to potential ignition sources include their isolation from bulk storage of flammable and combustible materials. This is particularly significant in locations where flammable liquid chemicals may be stored or used, such as spot cleaning areas. In these locations, it is the chemical vapors that represent the primary concern, and so the focus should be on reducing the amounts of airborne vapors in the space (e.g., closed liquid containers and good dilution ventilation) and the removal of ignition sources from the space (or the use of intrinsically-safe electrical equipment).

However, another aspect of this issue is the reduction or elimination of possible ignition sources, including electrical wiring that has been incorrectly installed or poorly maintained. The importance of this has been demonstrated by evidence from the two disastrous factory fires of 2012 in Pakistan and Bangladesh: in both cases, investigation suggested that faulty wiring or electrical short-circuits may have served as the ignition source for the fires.



Figure 1. This electrical panel represents a possible ignition source as well as a potential source of shock or electrocution to workers.

The related issue of Life Safety has a history which is intertwined with that of the apparel industry, as several of the greatest workplace tragedies are associated with inadequate Life Safety measures in that industry. The Triangle Shirtwaist factory fire in Manhattan in 1911, in which 146 workers perished, raised awareness of the need for life safety precautions and led to the development of the Life Safety Code in the United States.⁶

However this issue continues to warrant concern in the apparel industry a century later, as demonstrated by the disturbing number of fatalities associated with the fires at the Tazreen Fashions factory in Bangladesh and the Ali Enterprises factory in Pakistan, as well with as the building collapse at Rana Plaza.

A fundamental term in the subject matter of Life Safety is “means of egress”, which has been defined by the National Fire Protection Association (NFPA) as: “a continuous and unobstructed way of travel from any point in a building or structure to a public way consisting of three separate and distinct parts: (1) the exit access, (2) the exit, and (3) the exit discharge”.⁷ Hence, the concern is not merely with the exits, but also with the egress paths by which to reach the exits and the safe assembly areas beyond the exits.

⁶ For more information about the Triangle Shirtwaist factory fire, see: <http://www.dol.gov/shirtwaist/>.

⁷ NFPA, Life Safety Code Handbook, Chapter 7, page 99 (2003).

The spectrum of considerations surrounding “means of egress” is quite broad: the number, spatial distribution and width of exit doors and stairwells, the nature of the floor surfaces, the arrangement of the main egress aisles leading to exits, and components such as signage and emergency lighting, among others. Generally, these are best planned and provided for during the pre-construction phase of a factory, since it becomes difficult to remediate some inadequacies after construction.

Preparation remains a significant continuing element of Life Safety in a factory even after its construction, and includes both planning and practice. The layout of equipment and operations on the factory floor should be consistent with the convenient evacuation of workers from the space. Good housekeeping is a continuing obligation. Workers should be familiar with the evacuation procedures and should practice various scenarios, since disasters are usually not predictable.



Figure 2. Examples of poor (on the left) and good (on the right) housekeeping and workplace organization, and how these factors may impact means of egress on the factory floor and the ability of workers to evacuate the building. Note on the left how the manufacturing equipment has been allowed to encroach upon the designated egress aisle.

Finally, evacuation plans for all reasonably foreseeable disasters should be developed, since one plan may not fit all. Simply getting the workers to the nearest exit door is not sufficient.

Beyond the planning elements associated with Life Safety, there are some simple operational issues which may seem too obvious to mention, but which have been identified as contributing factors to the loss of life in the recent disasters in Pakistan and Bangladesh. The most important of these, and seemingly the most obvious, is the failure to maintain unlocked exit doors, which occurred in both of the disasters. Another remarkable contributing factor in one of the incidents was the assertive action taken by supervisors on one floor of the burning building to prevent worker evacuation, by

insistence that the fire alarm was merely a test and that no evacuation was necessary. Emergency lighting that failed to function during a power loss (a common effect of fires) also was an issue at one of the factories.

For a brief description of best Fire and Life Safety practices in the global apparel industry, see section B.1 on page 29.

A.1.2. Machine Safety issues constitute an obvious concern in an industry where so many workers operate machinery or use tools. The two principal sources of risks to workers are sewing machines and band knife cutters.

Sewing machines present a range of risks to the operators, both at the point of operation i.e., the needle and the means of power transmission (the pulley and wheel arrangement). The needle presents a puncture risk to the fingers as well as a risk to the eyes of a flying sharp in the event of breakage. At the two in-running points of the pulley (one at each wheel), there is risk that fingers, hands, long hair, other body parts or loose clothing can be caught and pulled between the belt and the wheel. Generally, all of these hazards may be mitigated by the installation of appropriate guards.

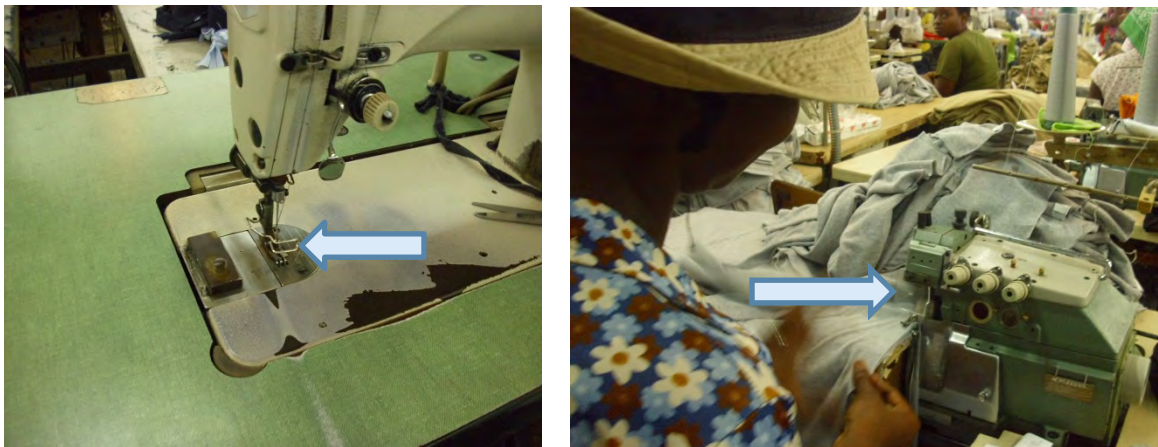


Figure 3. On the left is an example of a needle guard, also known as a finger guard, which protects against puncture injuries, while on the right is an example of an eye guard, which would shield the worker from any flying shards of needle if it should break. Note that the machine on the left is not equipped with an eye guard.

Blade knife cutters present an obvious hazard to the users and even some degree of risk to other workers in the vicinity. Typically, a combination of blade guard and appropriate PPE for the hand(s) of the operator is utilized to reduce the risk of injury (see Figure 6, page 22).

Other machines may present similar hazards, and an appropriate risk assessment should focus on the moving parts, which as mentioned are generally the point of operation and the means of power transmission. If these moving parts are easily accessible to the operator or other workers, then guards or other protective measures may be warranted. Suitable guards should eliminate access to the hazard zone while creating no new hazards of their own or interfering with the job performance of the worker.

A related aspect of Machine Safety is the awareness which workers should have of the various risks which are presented by the equipment and of the purpose which is served by the machine guards. In the absence of such awareness, workers may remove or override the guards, thus exposing themselves to the hazard.

For a description of best Machine Safety practices in the global apparel industry, see section B.2 on page 31.

A.1.3. Chemical Use for Spot Cleaning in the apparel industry is an HSE issue which is often addressed inappropriately by factories. An emphasis on the use of PPE as the primary means of exposure control seems to “jump the queue”: the preliminary focus should be on the selection of the specific chemical cleaner (and its inherent toxicity) and on the available ventilation at the process location.

Chlorinated solvents such as trichloroethylene, perchloroethylene (tetrachloroethylene) and methylene chloride (dichloromethane) are generally effective in removing oil spots from apparel materials and evaporate quickly from fabric, but their use presents the risk of inhalation, skin and eye exposure. The potential adverse health effects associated with exposure to these three chemicals are significant: all three are associated with some degree of increased risk of cancer, in addition to other toxic effects.

Alternative cleaning solvents which are composed of petroleum-based hydrocarbons may contain Benzene, Toluene and/or n-Hexane, often without specific identification on the Safety Data Sheet of their presence in the solvent (if such information is available at all). These chemicals also are highly toxic, as well as flammable, and do not represent an improvement over the chlorinated solvents.

The location(s) of such spot cleaning operations within a factory often determines which workers have exposures to the chemicals and to what extent. When spot cleaning work stations are distributed throughout the factory floor, then most workers will receive some degree of exposure to the cleaning solvent vapors. Generally it is preferable that

these operations be conducted at a location which is relatively remote from other workers who are not involved directly in chemical use. The availability of effective local exhaust ventilation e.g., a fume hood or spray booth, or nearby general exhaust ventilation e.g., a window or wall fan, should reduce the potential inhalation exposure to the chemical vapors which are emitted from the use of such cleaning solvents.

It seems that the informed selection of low toxicity chemical solvents and their use at well-ventilated locations in the factory would be more advantageous as means of exposure control than the regular use of respiratory protection by workers. The reasons for this statement will be expounded in the discussion on PPE.

However, chemical selection and adequate ventilation do not completely obviate the need for PPE use. If the chemical solvent is applied by spraying, then eye protection is warranted. Also, the likelihood of hand contact with the solvent creates the need for the use of chemical-impervious gloves.

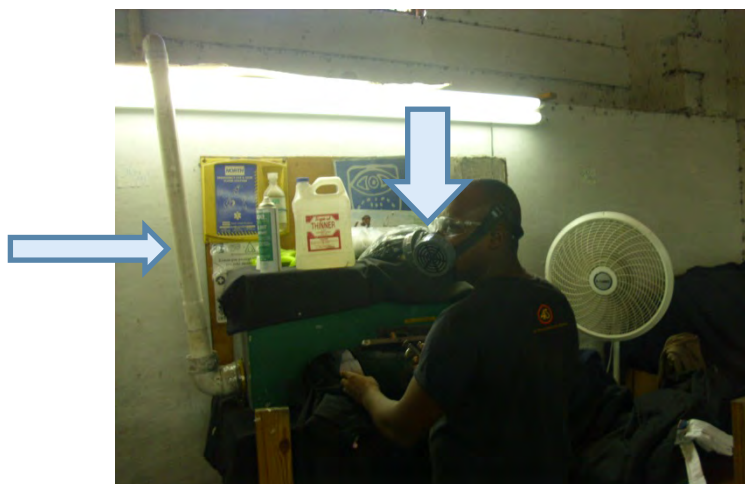


Figure 4. An example of a spot cleaning operation: the respirator is presumably the proper type; that depends upon the specific type of air-purifying cartridges which are provided (vertical arrow). Eye protection is provided, but note that gloves are missing. The ventilation at this work station is questionable: while there appears to be some type of local exhaust ventilation provided via the white pipe (horizontal arrow), the operation of the white fan on the right of the worker would likely disrupt any chance of its effectiveness, and appears to be positioned so that it will blow chemical vapors directly at the worker. Proper chemical selection, location and ventilation could eliminate the need for use of that respirator (imagine wearing it throughout the workday during the summer in Haiti).

For a description of best practices in the global apparel industry associated with Chemical Use for Spot Cleaning, see section B.3 on page 31.

A.1.4. Ergonomics and the associated risks of physical injury (known as Musculoskeletal Disorders, or MSDs, and alternatively referred to as Cumulative Trauma Disorders or Repetitive Strain Injuries) is a recently recognized HSE issue in the apparel industry. Ergonomics has been described briefly as “fitting the task to the worker”. It involves matching the work environment, equipment, tools and task activities to the physical capabilities, dimensions and needs of the worker. Attention has been called to this issue during the past decade largely through an alliance between the Occupational Safety and Health Administration (OSHA, refer to <http://www.osha.gov>) in the United States and the American Apparel and Footwear Association (AAFA, refer to <http://www.apparelfootwear.org>). Awareness and assessment of ergonomic risks in the apparel industry has been a primary focus of this alliance.

Ergonomic risks and even their associated MSDs are often difficult to recognize in the apparel industry, which obviously makes their mitigation unlikely. Several reasons for this situation are:

- Traditionally, the ergonomic risk factors have been considered to be “part of the job” (which they are, but need not be);
- The range of activities which may be associated with ergonomic risks is incredibly broad; and
- The physical injuries or MSDs generally begin with reversible symptoms and occasional pain, and develop slowly and progressively over time, so that the associated risks may not be recognized, if at all, until after the injury has occurred.

Three categories of activities in the apparel industry with possible ergonomic risks are:

- Sewing: the risk factors are the repetitive motions associated with the shoulders, elbows, wrists and hands; posture associated with sitting for long durations; and fine work by the fingers, hands and wrists which may involve the application of pressure and non-neutral positioning.
- Cutting, Folding and Packing: the risk factors include postural considerations again, although in this case it is associated with standing for long durations which creates strain on the legs, knees and lower back, and the intermittent bending and reaching which may be integral to the task, which create strain on the back and shoulders.
- Manual Material Handling: generally the movement of fabrics and other bulk materials, with risk factors associated with the various lifting, bending and twisting activities.



Figure 5. In the illustration on the left, the operator demonstrates poor posture that can lead to strain on the back, neck and shoulders. On the right, the operator achieves good posture with the use of an adjustable chair and a footrest, supporting the upper and lower back and the legs. Task lighting is provided to reduce the tendency to bend in order to inspect the work.

In general, ergonomic risks demand a relatively thorough yet common-sense approach to assessment and mitigation, and such risks are not easily recognized in the traditional compliance auditing process of apparel brands and non-governmental organizations (NGOs).

For a description of best Ergonomics practices in the global apparel industry, see section B.4 on page 32.

A.1.5. Personal Protective Equipment (PPE) is the last of the common HSE issues for discussion. The range of PPE options is as broad as the range of the health and safety risks which are encountered by workers. As a threshold consideration, it should be acknowledged that in the hierarchy of hazard control measures PPE is the least favorable since it is the last resort to protect a worker from a particular hazard before there is “exposure” to the body. So for example, an eye guard on a sewing machine is a preferable control to the use of safety glasses in protecting against the risk of flying needle fragments, though they need not be mutually exclusive alternatives.

The need for the use of PPE ideally should derive from a hazard assessment, and as mentioned, only after consideration of other hazard reduction alternatives. Selection of PPE encompasses the following factors:

- The proper type of PPE should be selected i.e., the protective characteristics of the PPE should be consistent with the specific hazard against which its use is intended to protect. Not all types of gloves

are intended to protect against the same hazards, nor are all types of respiratory protection alike;

- The PPE must fit the workers properly; and
- Depending upon the type of PPE, regular replacement may be necessary to ensure its effectiveness (e.g., respirator cartridges or chemical-impervious gloves).

Not only must the PPE be the proper type, but it must be used properly by the workers. When provided with PPE, workers should receive training on three related points: how the PPE should be worn or otherwise used, what hazard the PPE is intended to eliminate, and how the PPE accomplishes this. Without such information, workers are less likely to actually use the PPE, or the PPE is more likely to be misused or used in a manner which offers little or no protection to the workers.



Figure 6. A cutting area in an apparel factory where workers are wearing metal mesh gloves while using blade knife cutters on sheets of fabric. The risk to their hands in the absence of such PPE is clear from the proximity of the hand to the moving blade (arrow).

The common types of PPE which are utilized in the apparel industry are gloves, eye protection, hearing protection and respiratory protection. Two quite distinct types of gloves are used: chemical-impervious e.g., rubber gloves for chemical spot cleaning, and metal mesh gloves for cutting tasks which involve the use of a blade knife cutter. Hearing protection may come in the form of either ear plugs or ear muffs. Eye protection (safety glasses or goggles) is used at chemical spot cleaning operations where chemical spraying occurs, in order to prevent the inadvertent spraying of solvent into the eyes. The use of safety glasses by workers at sewing operations is a less preferable alternative to eye guards on sewing machines, since they protect only the eyes and not the entire face.

The use of respiratory protection is accompanied by a number of issues which comprise a reasonable argument against its use, and it seems to be the type of PPE which is most often misused in the apparel industry. Use of filtering face pieces, or loose-fitting disposable dust masks, is appropriate only for protection against the relatively low toxicity dusts associated with fabric material handling or general housekeeping activities. These provide virtually no protection against the chemical vapors associated with spot cleaning.



Figure 7. This illustrates the problem which is discussed in the preceding paragraph. The workers at this spot cleaning operation have been provided with loose-fitting dust masks (arrow), which are ineffective against chemical solvent vapors. However, it should also be noted that this location, with windows and overhead exhaust fan, may be preferable for these activities than the location in Figure 4.

The proper type of respiratory protection against solvent vapors, if needed by virtue of inadequate control of the worker exposure by other means, is either a half-face or full-face air purifying respirator with cartridges which are approved for organic vapors. The full-face option provides eye and face protection as well as respiratory protection. The use of these respirators is associated with a number of related obligations or requirements for successful protection of the worker, and regular use is uncomfortable and burdensome to the worker. Unfortunately, even if a factory provides the proper type of respirator and cartridges, it virtually always ignores these other issues. In turn, even if the proper type of respirator is provided, the wearers are often so uncomfortable that they wear the equipment loose on their face, or even less effectively, around their necks. These include, in no particular order:

- Determination of the proper fit of the respirator to the worker's face;
- Medical clearance of the worker for fitness to wear the equipment on a regular basis;
- Frequent replacement of the organic vapor cartridges (generally more often than once per week, depending upon the duration of use); and

- Worker training to ensure proper use, cleaning, maintenance and storage of the respirator.

Refer back to the worker in Figure 4 on page 20. While the worker appears to be protected against exposure to chemical vapors, this actually can only be true if the factory has properly addressed all of the bullet points listed directly above.

For a description of best Personal Protective Equipment practices in the global apparel industry, see section B.5 on page 33.

A.2. The Experience of Better Work Haiti in Haitian Garment Assembly Factories

The current status of HSE issues in the garment assembly industry in Haiti, as well as their history, is reflected in the collection of Biannual Synthesis Reports which are prepared by BWH and released on the Better Work website (www.betterwork.org) These Reports present the audit findings of the BWH monitoring team in Haitian factories during the preceding several months. One caveat must be acknowledged: while their approach provides adequate coverage of the common H & S issues, the E - environmental issues - are not evaluated by BWH in their monitoring process.

As described previously on page 5, the BWH CAT, or Compliance Assessment Tool, contains eight clusters of labor-related issues, one of which is Occupational Safety and Health. The OSH benchmarks in the CAT are drawn from the Haitian Labor Code or from OSH-related ILO Conventions, none of which are considered to be a core labor standard. In a very few instances, the OSH audit benchmarks are derived from other sources. This cluster has the highest percentage of non-compliance findings among all the clusters of the CAT. The BWH Reports further break down the audit data by compliance point (eight in the OSH cluster), and ultimately by individual audit question within the more problematic OSH compliance points. While comment on the Better Work method for determination of compliance is withheld for a later section in this paper (see section II.C.), the details of the most recent BWH Synthesis Report (October 2013) are useful for the identification of pervasive OSH deficiencies in this set of twenty-three factories, twenty-one of which had earlier separate assessments which had been included in the previous Synthesis Report of April 2013.⁸ Suffice to say that the summary statistics used in Better Work compliance reporting are more dismal than the individual factory performances on any particular CAT question.

⁸ Better Work Haiti, op. cit., page 7.

The relevant compliance points are: worker protection, health services and first aid, emergency preparedness, welfare facilities, working environment, chemicals and hazardous substances, and OSH management system. The eighth compliance point – worker accommodation – addresses issues related to worker dormitories and associated facilities, and is not yet relevant for the industry in Haiti.

The “Worker Protection” category encompasses PPE, machine guarding, and several issues which are related to ergonomics. This had a reported summary non-compliance rate of 91%. The most common compliance problems were identified on questions pertaining to machine guarding, provision and use of PPE, and accommodation of standing workers. The machine guarding deficiencies were related principally to the failure of the factory to establish a system to fix and/or replace guards, rather than the absence of guards per se. PPE deficiencies were associated with the absence of worker training on and management encouragement of its use.

“Health Services and First Aid” had a non-compliance rating of 100% of the assessed factories, and included two audit questions on which at least two-thirds of the factories were found wanting. The relevant issues were the adequacy of on-site medical facilities and staffing and the absence of initial and annual medical examinations for workers.

The “Emergency Preparedness” compliance point addresses some of the fire and life safety issues which have been discussed, and had a summary non-compliance rate of 83%. While at least half of the factories satisfied all of the CAT questions, the most common deficiencies included: clear and accurate marking of emergency exits and routes of egress, and posting of maps in the workplace; the availability of accessible, unobstructed and unlocked exit doors; and insufficient fire-extinguishing equipment. While operational and equipment issues are evaluated, there appears to be no assessment of the overall factory planning function.

“Welfare Facilities” encompasses toilets and hand washing facilities, designated eating areas, and the availability of free and safe drinking water. This compliance point also had a summary rating of 100% non-compliance. The major issue of non-compliance (~91% of factories) was the number of toilets, which is acknowledged by BWH to be the result of a rather demanding requirement of the Haitian labor code. The code requires separate toilet facilities for each gender, with at least one toilet for every twenty-five men and one for every fifteen women.⁹ However, the adequacy of eating areas and the

⁹ Code du Travail (1984), Chapter V, articles 469-470.

availability of safe drinking water were also found wanting in a sizeable percentage of the factories.

“Working Environment” broadly includes the issues of noise, lighting, heat and ventilation. This had a summary rating of 83% non-compliance, with the two most frequently encountered problems being lighting, which may well be more of a product quality issue than an OSH issue, and temperature, which is a seasonal issue in Haiti related directly to the timing of the assessment since the criterion of 30°C is often much less than the ambient temperature. A more important finding for the affected workers was that five of the factories had work areas where the sound levels exceeded 90 decibels.

The compliance point “Chemicals and Hazardous Substances” covers a number of aspects of chemical usage, including storage, container labeling, information (e.g., Safety Data Sheets and a chemical inventory), training, and eyewash station availability. While the summary rate of non-compliance was 83%, the only two issues on which half of the factories were non-compliant were the availability of Safety Data Sheets in the language of the workers and the proper labeling of chemical containers.

Within the same compliance point, there is a quite broad audit question which inquires about factory action to “assess, monitor, prevent and limit workers’ exposures”. Reportedly, there was only 13% non-compliance with this question, yet the use of “and” requires all four actions to have occurred for compliance, and it is doubtful that any of the factories actually have monitored worker exposures in any meaningful way.

The final compliance point, “OSH Management System”, touches on four elements of an OSH management system: documentation and reporting of injuries and illnesses, availability of a written OSH policy, mechanisms to ensure cooperation between management and workers on OSH issues (which envisions the existence of an OSH Committee), and performance of an OSH hazard assessment in the factory. This point had the lowest summary rate of noncompliance within the OSH cluster at 35%. The most common deficiency was the failure to conduct regular OSH assessments. BWH clearly states that this should be a role for the factory OSH Committees.

The limited nature of the assessment within the topic “OSH Management System”, and the relatively good factory compliance which is reported, belie what is likely the actual status of OSH Management Systems at these factories. One need only be reminded of the two most frequent non-compliant issues within “Chemicals and Hazardous

Substances”: Safety Data Sheets in Creole and proper labeling of chemical containers. These are two issues which would be addressed by an adequate OSH management system.

The summary table on compliance in the Seventh Biannual Synthesis Report¹⁰ portrays a rather bleak picture of OSH conditions in Haitian apparel factories: for the seven relevant compliance points, at least 83% of the factories (19 of 23) are considered to be non-compliant on every point except OSH Management System, and the possibly misleading statistic for that compliance point has been discussed above. For two of these compliance points (Welfare Facilities and Health Services & First Aid) the non-compliance rate was 100%. As pointed out by BWH in the Report, this phenomenon is due at least in part to the method by which Better Work calculates and reports non-compliance. If a factory is found deficient on any one question, or aspect, within a compliance point, then it is considered to be non-compliant on the entire point. So for example, if a factory was compliant on six of the seven questions pertaining to Emergency Preparedness, but non-compliant on the other question, it would be considered as non-compliant on that point as a whole.

A comparison of the BWH summary statistics on OSH compliance to those in a different Better Work country – Vietnam – may be useful in reaching some appreciation of their meaning. The Better Work program for the apparel industry in Vietnam also was begun in 2009, but each of its Biannual Synthesis Reports covers many more factory assessments than do the BWH Reports – typically more than 100 factories. The OSH compliance points are identical, although specific questions within each point may vary depending upon differences in the Vietnamese labor code. As in Haiti, the OSH cluster typically has the highest rates of noncompliance. The following table presents the noncompliance rates on the seven relevant compliance points which were revealed in two earlier Synthesis Reports from these countries, released in April 2012 and April 2013. The statistics from the earlier reports are presented first (i.e., %2012/%2013).

Compliance Point	Haiti Noncompliance Rates (April 2012/April 2013)	Vietnam Noncompliance Rates (April 2012/April 2013)
OSH Management	70% / 42%	68% / 74%
Chemicals & Hazardous Substances	70% / 75%	92% / 84%
Worker Protection	100% / 92%	80% / 80%
Work Environment	75% / 50%	23% / 19%

¹⁰ Better Work Haiti, op. cit., page 15.

Health Services & First Aid	100 % / 100%	97 % / 93%
Welfare Facilities	95 % / 88%	97 % / 95%
Emergency Preparedness	95 % / 67%	58 % / 60%

Based on the summary statistics which are utilized by Better Work, OSH conditions in the two countries seem to be reasonably similar in their relatively high rates of noncompliance. Work Environment is the only compliance point with a noticeable difference between the two countries. Clearly, there must be some findings of deficient conditions in the apparel factories in both countries that form the basis for these unfavorable percentages. On the other hand, the fairly stringent method by which Better Work calculates factory compliance may contribute to the obvious difficulty which apparel factories seem to have in achieving compliance in Better Work assessments, and this may obscure some very real differences in the status of OSH performance among the individual factories.

B. Best Health, Safety and Environmental Practices in the Global Apparel Industry

As the apparel factories in the BWH program develop increased internal OSH capabilities and achieve improvements in both factory conditions and BWH assessment performance, what should their future aspirations be? Ideally, these will evolve from considerations of their corporate HSE priorities, relevance to the particular circumstances and needs of the industry, their customers and the workforce in Haiti, and other appropriate factors.

Presumptive “best” HSE practices in the industry can be identified from the expectations of the major global apparel brands. These can be found in documents such as the Guidelines or Standards which support their Codes of Conduct for vendor factories, and which form the basis for their own factory monitoring efforts.

Other useful sources of information on best practices are the HSE Guidelines which have been developed by the IFC and similar global investment institutions. The IFC has a set of General Environmental, Health and Safety Guidelines as well as a specific set of Guidelines related to Textile Manufacturing.¹¹

¹¹ For information on these IFC Guidelines, see http://www1.ifc.org/wps/wcm/connect/Topics_Ext_Content/IFC_External_Corporate_Site/ifc+sustainability/sustainability+framework/Sustainability+Framework+-+2006/Environmental,+Health,+and+Safety+Guidelines/ehsguidelines.

There appears to be nearly universal agreement on one aspect of HSE best practice, not only for the apparel industry but for all types of operations: a systematic approach to the management of HSE issues at the factory and the corporate level. HSE management systems focus on accountability and documentation, and operate on the activity cycle of “Plan – Do – Check – Act/React”, which is the core scheme of every management system. However, a cautionary note is warranted: the imposition of a generic written management system on a factory whose staff lacks the necessary HSE capabilities, and which generally is deficient on HSE operational issues, is likely to be of little benefit.

This is not intended to be an exhaustive review of HSE best practices in the apparel industry, but rather a brief overview. Five categories of common OSH issues in the apparel industry were identified and discussed in Section II.A. For these, what best practices are recognized which may serve as guidance to the apparel factories in Haiti? And while significant environmental issues may not yet confront these factories, what best practices are identified to address these issues in the global apparel industry?

B.1. Fire and Life Safety

Fire and Life Safety issues require the type of planning and preparation which are best served by documentation, such as that which would be an element of a management system. The significant roles and responsibilities of factory personnel in the event of a fire or other emergency situation should be defined clearly and should be understood by the relevant personnel. Those workers who are designated to use fire-extinguishing equipment e.g., portable extinguishers or fire hoses, should be trained periodically in its use; such training should include the opportunity for actual use of the equipment. Regular e.g., monthly, inspection and testing of the equipment and of fire detection and alarm systems should be conducted to ensure their performance in the event of an actual fire.

Best practices in Life Safety are not limited to factory operations, but encompass construction and equipment layout considerations. A comprehensive detailed guide to such practices would be the Life Safety Code in the United States, which is published by the NFPA (Code 101). Similar codes exist in other jurisdictions.

Construction considerations include the number, location and width of exits and stairwells from each level of the building, and the distances from occupied locations on the floor to the nearest exit. Two available exits are considered the minimum acceptable; more may be necessary depending upon the total width of the exits, the

floor area of the space, and the anticipated number of occupants. It becomes quite difficult to address inadequacies in regard to these issues after building construction has been completed.

The arrangement of the occupants and the equipment on the factory floor, and their relationship to the exit locations, is another consideration. There should be wide (generally 36 to 42 inches or more) aisles which provide relatively direct egress to the exits. Workers should not have to follow circuitous routes in order to evacuate the building.

Planning for factory evacuation should extend beyond the exit doors of the building, and safe assembly areas for workers should be identified for the various types of foreseeable emergencies e.g., fire, hurricane, flood, earthquake, etc., since presumably there may be some differences in the locations where workers may assemble safely. The location of these safe assembly areas should be coordinated with the responding emergency services and with other factories in the vicinity, as in the case of an industrial park. Evacuation drills should be conducted periodically, both announced and unannounced, and should simulate various emergency scenarios so that routes may differ, and all workers should be familiar with at least two evacuation options.

All levels of factory management have some role to play in the planning or in the operational aspects of emergency response, and because of the potentially dire consequences, this should not be viewed merely as an inconvenience to production goals. Management behavior which neglects aspects of the planning process or which actually obstructs worker egress in some way should be considered intolerable.

Finally, the issue of building structural safety must be mentioned here because of the international attention which has been focused on the garment industry in Bangladesh since the Rana Plaza collapse. Such a structural failure represents one of the plausible types of disasters that should be included in emergency response planning, particularly in Haiti where the real possibility of earthquakes exists. Factory building structural issues are best addressed at the design and construction phases. However for existing buildings, any such design or construction plans or other relevant historical documentation may be useful in a subsequent structural safety evaluation.

B.2. Machine Safety

Machine Safety practices are closely associated with a key element of any good HSE management approach i.e., the systematic identification and mitigation of safety risks. To a great extent, the practices can only be as effective as the quality of the risk assessment permits. Existing, modified and new machinery and equipment all should be evaluated for potential risks to workers, beginning with the moving parts. Fixed physical guards which prevent exposure to the hazard are the typical means of protection, but more sophisticated guarding may be necessary if physical barriers would interfere with the operation or the worker. Worker instruction on the identified risk and the purpose of the guards will increase their acceptance and proper use.

The most common equipment in the apparel industry - sewing machines - should have needle and eye guards, as well as guards at the in-running points of the two wheels of pulley systems. Blade knife cutters should have blade guards. While such may be considered best practice, it really is simply the avoidance of bad practice.

Best practice on Machine Safety also includes the development and utilization of lockout/tagout (LO/TO) procedures during maintenance and repair activities on machines and other equipment. LO/TO represents a systematic approach to the identification of the risks of any type of energy release (e.g., electrical, mechanical, hydraulic, pneumatic, chemical, thermal, etc.) during such activities, and their control by methods including the placement of warning tags or locks on switches, power sources and valves, the blocking of potential moving parts, etc. Such procedures, preferably written, should be designed to protect workers from the unexpected activation or movement of the equipment and the release of electrical or other energy during the activities. Worker training is also an essential element of a LO/TO program.

B.3. Chemical Use for Spot Cleaning

Chemical Use for Spot Cleaning in apparel factories is an OSH issue in regard to which the opportunities for best practice are often overlooked. Compliance assessment typically considers the availability of a Safety Data Sheet, the presence of ventilation, and the use of PPE. Unfortunately, this falls short by neglecting to question the preliminary selection of the cleaning solvent itself, which should be done on the basis of its chemical ingredients and their toxicity, obviously in addition to its cleaning properties. As mentioned, several of the chlorinated and hydrocarbon chemicals which are ingredients in cleaning solvents (trichloroethylene, perchloroethylene, methylene

chloride, benzene, toluene and n-hexane) are potential human carcinogens and/or have significant chronic health effects associated with exposure. Best practice dictates that if the Safety Data Sheet identifies one or more of these chemicals in the cleaning solvent(s) that are in use, then the factory should make efforts to identify alternatives which are less toxic. Clearly, testing a water-based detergent product would be a reasonable first step.

Beyond chemical selection, best practice would establish conditions of use for the cleaning solvents which would eliminate the necessity for the use of respiratory protection. A well-designed spray booth or other type of ventilated work station which captures the solvent vapors and discharges them outdoors should be adequate control for potential exposures to the chemical vapors. Actual monitoring of the worker exposures could be performed to determine the need for respiratory protection. These points – work station design and worker exposure monitoring – are significant because factories typically just put those workers in respirators, often at the insistence of auditors from their brand customers or NGOs. The factories rarely do all that is necessary to ensure effective respirator performance, and workers are generally uncomfortable, unhappy and unprotected. Establishing appropriate ventilation at a work station with the use of a low toxicity cleaning solvent, and having worker exposure data to support the absence of respirators, represent best practices on this issue.

Finally, an alternative approach to the production problem of machine oil stains is to consider the source of the stains, and to try to eliminate the problem at that point in the process. Improved maintenance on machines could reduce the frequency of staining. Water-based machine lubricants may be associated with stains that are easier to clean i.e., with soap and water. This type of problem-solving certainly constitutes a best OSH practice, although superficially it may not appear to be OSH-related.

B.4. Ergonomics

Ergonomics is another OSH issue in which competent risk assessment is often missing, yet is the key to achieving best practice. Tracking the development of possible ergonomic-related injuries may be accomplished by reviewing worker injury reports and by investigating worker concerns or complaints of physical aches and pains, which have not yet resulted in an injury report, but which may be related to particular tasks or work stations. The optimal proactive approach is the evaluation of each category of work station e.g., sewing machines, cutting stations, folding and packing benches, etc., and all the tasks which are performed at each.

The previously mentioned AAFA-OSHA alliance has produced a two-volume guide to the implementation of an ergonomics program in the apparel and footwear industries which is available for purchase on the AAFA website. However, other useful information on ergonomic issues in the apparel industry, particularly related to sewing, is available at no cost on the OSHA website.¹² Such basic information may be particularly helpful in building the capacity for the ergonomic risk assessments which are necessary to achieve best practice at the level of individual apparel factories.

Once ergonomic risks have been identified, there are steps which can be taken to reduce the likelihood of the development of MSDs. Height-adjustable chairs and tables are appropriate since workers will present a range of physical dimensions. Also, periodic work breaks with the opportunity for stretching and muscle-specific exercises may help to reduce the risk of MSDs.

Possible aids for workers who spend most of the workday on their feet include the availability of chairs or stools for intermittent breaks and the use of anti-fatigue mats (if the workers stand in one place). An additional ergonomic aid would be an elevated footrest or bar at the work benches, which would allow the workers to comfortably raise and support one foot or the other, thus shifting their weight occasionally and taking stress off the lower back.

B.5. Personal Protective Equipment

The lynchpin for a successful Personal Protective Equipment (PPE) program is once again competent hazard assessment, since the selection of the proper type of PPE depends upon the particular hazard against which it is intended to protect. All gloves are not alike, and the same is true for respirators. Hence, only qualified factory personnel should be involved in the selection and purchase of PPE for workers.

In best practice, hazard recognition may identify the possible need for PPE, but it should not dictate its use without a further evaluation of alternative hazard control methods so that the use of PPE can be avoided. As mentioned, in the hierarchy of control measures PPE should be considered the last resort, to be used only when other means of hazard control are not feasible. Such other means may include engineering controls, hazard elimination, substitution, and/or administrative controls. This type of evaluation is

¹² See <http://www.osha.gov/SLTC/ergonomics/outreach.html%23etools>.

particularly true in the case of respiratory protection, where the opportunities for mistakes and misuse of the PPE are numerous, and the likelihood of the existence of a comprehensive respiratory protection program with medical evaluations, fit testing, training and regular cartridge replacement is slim.

While hazard assessments represent the proactive aspect of a PPE program, the review of accident and injury reports can be used to identify incidents in which the absence of PPE, or the wrong type of PPE, may have been a contributing factor. Such review will supplement the regular performance of hazard assessments on the factory floor.

Once reliance on the proper type of PPE has been deemed necessary for worker protection, then worker training becomes an essential element. Workers should receive instruction on the potential hazard, and on how use of the PPE can be expected to prevent exposure to the hazard. Training should also cover the proper use of the PPE, its limitations, and the appropriate care, maintenance and replacement of the PPE.

B.6. Occupational Safety and Health Committees as a Resource

One additional OSH best practice – the creation and utilization of OSH Committees – warrants discussion here because of its wide recognition as such, and because of the particular emphasis which it has received in the Better Work program. Several global brands require that their vendor factories have such committees, and in fact provide detailed guidance on how the committees should be created and should function. In the Global Reporting Initiative (GRI), the most widely used reporting framework on corporate sustainability, one aspect of OSH which is reportable is “the percentage of the total workforce represented in formal joint management-worker health and safety committees that help to monitor and advise on OHS programs”.¹³

The establishment of such OSH Committees is also a significant element of the Better Work OSH cluster in its CAT document. One of the audit questions within the compliance point “OSH Management Systems” is: “Has the employer developed mechanisms to ensure cooperation between workers and management on OSH matters?” Clearly, the intended positive response is the existence of an OSH Committee as one such mechanism.

¹³ GRI Sustainability Reporting Guidelines, version 3.1 (2011), Aspect LA6. See: www.globalreporting.org for further information.

Worker participation in OSH issues has long been a priority for EU-OSHA (the European Agency for Safety and Health at Work), most recently evinced by a two-year campaign initiated in April of 2012 entitled *Healthy Workplaces: Working Together for Risk Prevention*. The emphasis of the campaign is the necessary contributions of both management and workers toward the achievement of a healthy workplace. A study which was commissioned by the agency and published in 2012, entitled *“European Survey of Enterprises on New and Emerging Risks”*, identified two key elements of successful OSH performance: worker participation and management commitment. Management of OSH risks is more likely, and also more likely to be perceived by workers as effective, in workplaces where both of these elements exist. Similarly, the management of such risks and its perceived effectiveness are more likely in workplaces where worker representatives have an active and recognized role and are provided with sufficient resources.

While the creation of an OSH Committee at a factory is merely the initial step towards the eventual Committee activities which would constitute the best OSH practice, the composition of the Committee may have a significant impact on its effectiveness. Generally, an OSH Committee should have worker and management representatives in roughly equal numbers, of both genders, distributed across the various work departments and operations within the factory and from every work shift, if applicable. Management representatives should not only come from administrative positions such as compliance or human resources, but also from production areas. Ideally, the members would bring different work experiences, skills and abilities to the group. They may be appointed or elected, but should have the requisite interest level in OSH issues and the willingness to participate in Committee activities. The number of members should be appropriate for the level of activity that the Committee will perform. Typically, there should be a chairperson (or co-chairpersons). One or more of the management representatives on the Committee should have the authority, or direct access to such authority within the factory, to follow-up and act, by allocation of manpower or other resources, on OSH issues which are addressed by the Committee. Generally, membership terms should be established and should be staggered initially so that the entire Committee does not turnover at one time.

Members may play multiple roles during their service on the Committee. Clearly, they should represent the OSH interests of other workers at the factory beyond themselves, and serve as a conduit via which OSH concerns may be raised by workers, and hence they must function as communicator - both talker and listener – in this regard. Inspector and investigator are two more roles which members may be called upon to play as part

of the overall OSH program to identify and mitigate risks at a factory. Training on various OSH issues is an important element of an OSH program, and Committee members may be both students and teachers in this regard. While interacting with other Committee members and factory management, members may play the roles of advocate and negotiator as well.

Once established, the two most common activities of any OSH Committee are to meet and to inspect. These two activities are anticipated by the global brands which are the proponents of such Committees. Meetings should be convened at regular intervals e.g., monthly, and should be brief, limited to 1 - 2 hours. An agenda should be created and distributed to membership before each meeting, and a written summary of each meeting should be prepared and distributed to relevant management personnel and to the factory workforce as a whole e.g., by posting at conspicuous locations. The chairperson(s) should manage the conduct of the meetings, without dominating the discussion of substantive OSH issues. Input and opinions from all members should be sought, and civility should reign. If particular OSH issues are identified as priorities which are believed to necessitate subsequent action of some sort, then perhaps a separate document which identifies the issue and states the Committee recommendations and their rationale should be presented directly to the appropriate factory management representative with a request for a timely response to the Committee.

The inspection function of an OSH Committee may have both formal and informal components. In both cases, the usefulness of the work product depends upon the knowledge and experience of the inspectors and the manner in which the inspections are conducted and documented. Complex OSH issues may not be identified or addressed in any meaningful way by most Committee members without additional specific OSH training. On the other hand, the daily presence of OSH Committee members as workers in production areas provides the opportunity for continuing oversight of many obvious yet potentially significant OSH risks.

Periodic formal inspections of the various areas of the workplace should be conducted by groups of OSH Committee members, though it is not necessary to have the entire Committee inspect each area. A basic and brief written checklist of the OSH issues which are relevant to factory operations should be provided to the inspectors to ensure a uniform approach to the inspections. BWH has prepared and provided such a checklist to OSH Committees to support them in this effort.¹⁴ When deficiencies or unsafe

¹⁴Better Work Haiti, op. cit., page 21.

conditions are identified, they should be corrected immediately by factory personnel whenever possible. If not, the findings of the inspection, with recommendations for corrective action, should be documented and provided to the relevant management personnel for resolution. The workplace inspection findings are appropriate subject matter for Committee meetings. Again, factory inspection for the purpose of evaluating OSH issues is a function of OSH Committees that is envisioned by Better Work.

The extent to which these inspections can provide comprehensive coverage of OSH issues is dependent upon the level of training, skill and experience possessed by the OSH Committee members. Hazard or risk assessment in the apparel industry ranges from the simple (e.g., are the exit doors locked?) to the relatively more sophisticated (e.g., is the respiratory protection the appropriate type for the exposure?). However, some benefit to the factory is derived from the performance of even basic OSH inspections which could address the following issues (among others): adequacy of exit doors and aisles, fire extinguisher and/or fire hose readiness and access, performance of emergency lighting, basic electrical safety issues, availability of container labels and Safety Data Sheets for chemical materials, availability of appropriate PPE for worker use, general housekeeping conditions and walking/working surfaces, etc.

While formal periodic inspections have their place, risks and hazards may arise at any time during factory operations, and the informal inspection activities of OSH Committee members may be more important. During their daily activities in their own work areas, members should be vigilant in regard to unsafe and potentially hazardous conditions, operations and work practices, and should communicate their concerns to supervisors and co-workers. For example, such OSH issues may include temporary obstructions to aisles and exits, improper use of machine guards or PPE by workers, or inappropriate use of chemicals, tools or electrical equipment. Also, they should encourage their co-workers to be similarly vigilant, in an attempt to foster the development of an active OSH culture in the factory.

Beyond “meet and inspect”, another activity which may be appropriate for members of an OSH Committee is participation in accident or injury investigations. It may be most effective to involve only certain members in any particular investigation, depending upon their knowledge and work experience. The objective of such investigations is to identify the factors which may have contributed to or caused the incident, and if possible, to recommend corrective actions which might reduce the likelihood of recurrence. The report of accidents/injuries and accident investigations is also useful subject matter for Committee meetings.

Other Committee activities are possible as well, depending upon the priorities and particular approach of the factory management to OSH issues. Some of these are:

- Serve as coordinators during evacuation drills to ensure the orderly egress of co-workers and their safe assembly outside the building;
- Conduct proactive risk assessment of anticipated new or modified processes, equipment, tools or chemicals so that possible hazards are identified, considered, and mitigated if warranted, before they exist on the factory floor;
- Provide training for their co-workers on basic OSH topics;
- Assist in factory activities intended to promote general worker health, such as medical screening opportunities for workers; and
- Communicate regularly on OSH Committee activities to both factory management and workers.

However, even the most enthusiastic worker participation without factory management commitment to OSH issues and support of Committee activities may eventually prove to be frustrating and lead to ineffectiveness. The extent to which management is engaged in communication with the Committee, and provides administrative, technical and financial support as appropriate, are critical factors in determining the success of OSH Committees and the benefits which they may provide to their factories.

Management should assist in the printing and distribution of Committee meeting agenda and minutes, and in providing a suitable space for the meetings. Management personnel should respond, in writing if appropriate, to specific communications from the Committee on OSH issues which have been identified as priorities. A suitable balance of Committee activities – some requested by management and others proposed by the Committee or workers – should reflect management commitment to OSH issues and should be integrated into the factory OSH program as a whole. Management should encourage, and provide the time without financial loss, for OSH Committee members to attend training workshops and other capacity-building opportunities.

B.7. Environmental Issues and Best Practices

The common environmental issues associated with the global apparel industry are:

- Water management, including the various types of wastewater effluent;
- Waste management, including both non-hazardous and hazardous; and

- Air emissions from stationary combustion sources such as electrical generators, boilers and incinerators.

Real innovation in the global apparel industry focuses on two aspects of water management: (i) water use reduction because of the scarcity of that resource in many developing countries, and (ii) the quantity and specific contaminants in process wastewater, to reduce the burden on wastewater treatment systems and to improve their effectiveness, while minimizing the impact on the receiving waterway.

Concerns about wastewater discharge into nearby waterways encompass three types: water from industrial processes, particularly finishing operations such as dyeing, bleaching and printing, and laundries; sanitary sewage from toilet facilities and other sources; and finally, storm water drainage and discharge. Best practice demands that factories identify these wastewater streams, their quantities and the likely contaminants that each contains. Characterization of the wastewater streams is necessary to determine the need for and the proper method of treatment of the water prior to discharge. The three common categories of treatment are physical, chemical and biological, with the proper choice(s) depending upon the constituents in the wastewater.

Wastewater monitoring at the point of discharge is necessary to determine compliance with any applicable regulatory limits or guidelines, or simply to identify the content of the effluent and the effectiveness of the treatment. In the absence of local regulation, guidelines are available from IFC, Business for Social Responsibility (BSR) and global apparel brands.¹⁵

Waste management, covering a range of activities from generation to disposal, is a second broad environmental challenge. Many possible waste materials, both hazardous and not, should be included in a factory program. Alternatives to disposal, such as reuse by the factory, recycling, or energy recovery, should be considered, but waste minimization efforts to limit the generated quantities of all types of waste represent the best preliminary step in the management process. Pattern efficiency or control is a planning method by which major apparel brands get more usable pieces from the same

¹⁵ For example, see IFC guidelines at <http://www1.ifc.org/wps/wcm/connect/2a66470048865981b96efb6a6515bb18/Final%2B-%2BTextiles%2BManufacturing.pdf?MOD=AJPERES&id=1323162617789>, and Levi Strauss guidelines at <mailto:http://www.levistrauss.com/sites/default/files/librarydocument/2010/6/global-effluent-requirements-2010.pdf>.

amount of material, thus reducing the amount of scrap.¹⁶ Development and implementation of a Restricted Substance policy is a means by which companies can reduce the toxic characteristics of their wastes (and of their products as well). The accumulation of waste streams of different materials should be segregated, depending upon their eventual fate. Hazardous wastes should always be segregated from non-hazardous wastes.

The selection of legitimate and qualified waste transport and disposal vendors is a necessary element of the waste management program. This issue is as important for environmental protection as it is significant for the reputations of the factory and its customers. The discovery of illegal and/or improper waste disposal could create serious reputational risk if the waste can be traced back to its source. Documentation of the waste handling after it leaves the factory is critical for credibility and a manifest or receipt for each shipment of waste should be obtained. An additional best practice would entail periodic visits by factory representatives to their waste disposal sites to verify receipt and to examine conditions. This issue is of particular significance in Haiti since at the present time there is no suitable site for the disposal of hazardous chemical wastes.

The final environmental issue for discussion is the emission of air pollutants from stationary combustion sources which are associated with factory operations. These include generators, boilers, incinerators, and perhaps others. The principal air contaminants of concern are oxides of nitrogen, oxides of sulfur, and particulate, although depending upon the material being used as fuel, other emission constituents may require attention. Best practice dictates that the emissions are characterized via monitoring, and that appropriate pollution control devices be installed to ensure that the emissions satisfy any local regulatory limits. In the absence of such regulation, emission guidelines are available from IFC documents as well as other sources.¹⁷

C. The Capacity of Better Work Haiti in Regard to Health, Safety and Environment Issues

The BWH approach of assessment plus training and advisory services is appealing for an industry which currently is undergoing development in Haiti and has need for capacity-building. The emphasis on OSH Committees and their ability to do regular hazard

¹⁶ See the Nike experience at http://www.nike.com/nikeos/p/gamechangers/en_US/cd_waste.

¹⁷ See: IFC emission guidelines at <http://www1.ifc.org/wps/wcm/connect/532ff4804886583ab4d6f66a6515bb18/1-1+Air+Emissions+and+Ambient+Air+Quality.pdf?MOD=AJPERES>.

assessments in the factories is appropriate for at least two reasons: it satisfies a significant need for OSH training among workers, and it aims at creating the capacity to conduct credible hazard assessments, which is a critical element of any OSH program. It has been evident during the mission workshops that there is a need for and an interest in OSH training and information, at the levels of both factory supervisors and workers and within the ranks of the BWH advisors. Expanding the reach of BWH services in this regard would provide a significant benefit to the industry.

The OSH Guidance and Good Practice sheets which have been developed by BW provide generally useful information in a convenient format on a range of OSH topics.¹⁸ However, the intended audience for these documents seems to be factory management. Regardless, the content of these Good Practice sheets could be utilized in other applications, such as analogous work practice sheets which could be used in worker training sessions, or as the basis for an OSH hazard assessment checklist for use by the OSH Committees or other relevant factory personnel. Again, the dissemination of OSH information as broadly as possible throughout the apparel industry in Haiti can only be beneficial.

The Safety and Health at Work fairs which have been sponsored by BWH in April of 2012 and 2013 at the Metropolitan Industrial Park in Port-au-Prince were unique events during which OSH issues in the workplace were integrated with the concept of the general health status of workers. These two related issues, and their relationship to worker productivity, have received increased attention during the past decade across all types of industries. A developing body of evidence suggests that corporate investment into OSH and worker wellness programs can yield a significant return in terms of improved productivity. This type of approach seems to offer particular benefits to both the workforce and the factory in a developing country such as Haiti where healthcare services to the general population are often wanting. Worker demand for the services that were offered at these fairs was evident. The fairs represent a progressive element of the BWH program, and similar efforts should be encouraged.

The content of the monitoring aspects of BWH services derives from the core ILO labor standards and the Haitian labor code, reflecting the uniform approach of the global Better Work program. As such, there is no consideration of environmental issues in their factory visits or in their related training and advisory services. This emphasis is clear from the consistent use of “OSH” by Better Work, whereas the broader range of IDB

¹⁸ See: BW OSH Guidance Sheet at <http://www.betterwork.org/EN/resources/Documents/Guidance 7 - Occupational Safety and Health.pdf>.

interests is reflected in its use of “HSE”. “OSH” may be considered a subset of “HSE”. It may fairly be said that currently BWH has no intention or apparent capacity to identify and mitigate environmental risks which may arise in the apparel industry in Haiti. However, it has been reported that the global Better Work program may be considering an expansion of services into the environmental arena.¹⁹

Consideration of the questions in the OSH cluster of the BWH CAT document, as discussed in the recent Synthesis Report, must be tempered by the following: the general breadth of OSH issues, and the level of detail within the available benchmarks for each, could easily lead to an audit tool in which the emphasis on OSH issues dominates that which is received by the seven other compliance clusters. Any critique of the CAT in regard to its adequacy in coverage of relevant OSH issues for the apparel industry should be sensitive to the fact that OSH is but one compliance cluster of eight which demand the attention of BWH monitors.

Given this constraint on the performance of a detailed OSH audit, it still may be said that the eight OSH compliance points and their associated questions provide adequate coverage of the common OSH issues in the apparel industry so that any significant risks or imminent hazards should be identified by a competent monitor. Of the eight compliance points, it seems that “Chemicals and Hazardous Substances” may be the most problematic. There is no apparent attempt to distinguish among the relative toxicities of the various chemicals – only the requirements for a Safety Data Sheet, an inventory, labeling, storage and training. While worker exposure risks may arise because of deficiencies in any of those requirements, it seems that the actual risk is most directly related to the specific chemical, its inherent toxicity and other characteristics. So while the CAT coverage of issues associated with chemicals and hazardous substances is good as far as it goes, it does fall short on the issue of chemical selection.

A related question for that compliance point, which was mentioned previously, poses an inquiry into employer “action to assess, monitor, prevent and limit workers’ exposures to chemicals”. If interpreted as written, it is unlikely that this question could ever be answered in the affirmative. On the other hand, if the “and” is replaced by “or”, then it becomes likely to never receive a negative response. While this question attempts to evaluate a significant OSH issue pertaining specifically to the spot cleaning operations and other chemical processes in the garment industry, some rethinking is likely needed to achieve a more credible evaluation of this complex OSH issue.

¹⁹ Personal Communication with Ms. Eleonore Richardson, Operations Officer for the IFC in their office in Ho Chi Minh City, suggesting that an environmental pilot program may be undertaken by Better Work Vietnam.

Also, the questions associated with the “OSH Management Systems” compliance point merely scratch the surface on this issue, relative to the best practice expectations of the global brands. Ideally, the development of documentation for such management systems coincides with the implementation of procedures and operational aspects of the system. This compliance point may provide BWH with the opportunity to foster the development of a management system approach in apparel factories through the periodic addition of pertinent questions over the next several years.

The final comments have little bearing on the capacity of BWH per se. The summary compliance statistics which are presented in the Synthesis Report, and which have been mentioned previously in this document, seem to provide a relatively pessimistic view of the compliance status of factories in Haiti (and elsewhere, as seen in the analogous Reports from Vietnam). In fact, BWH acknowledged this feature of the compliance calculation method in one of its earlier Synthesis Reports.²⁰ Perhaps a different approach to the reporting metrics might provide a more realistic reflection of individual factory conditions and allow for the ready identification of meaningful differences in factory performance by readers of these semi-annual reports.

Some means of prioritization of the noncompliance findings might be useful to the factories and to the stakeholders who rely on the BWH Synthesis Reports and individual factory monitoring reports. When a significant or widespread OSH risk is identified or an imminent hazard is found to exist, that finding should be called out as a priority for factory attention and mitigation.

D. Recommendations for Improvement of Health, Safety and Environment Performance in Garment Assembly Factories in Haiti and Proposed Actions for the Future

In general, the recommendations for improved HSE performance in the Haitian garment assembly industry are all related to a single issue: the capacity of the Haitian factories to recognize, mitigate and manage the risks that exist as a result of their operations. As capacity-building occurs at all levels of factory personnel from upper management to workers, they will be better able to appreciate and to address the HSE issues with which they will be confronted, and in regard to which they seem to have present difficulty in satisfying the expectations of BWH.

²⁰ Better Work Haiti, Garment Industry 4th Biannual Synthesis Report under the HOPE II Legislation (April 2012), page 12.

D.1. Information and Training for Factories

And so the primary recommendation is for the improved dissemination of HSE information by all means available. While this should not be the sole responsibility of BWH, that organization is uniquely positioned to reach the target audiences and to evaluate progress over time. However, the need and apparent demand for training on HSE issues (and other labor issues as well) has been apparent from the mission workshops, and it may be that BWH cannot satisfy the volume of demand. The identification and engagement of other capable HSE training providers in Haiti should be pursued.

Upper management personnel at the factories should be engaged in the process, so that they have a general awareness of the HSE issues associated with their factory operations, an appreciation of the relationship between worker health and productivity, and are informed of any critical or emerging HSE issues in the industry. Continued efforts should be made to reach middle management personnel and OSH Committee members on a broader range of HSE issues, particularly if, as anticipated, factory production is expanded beyond its current “cut and sew” operations. This change in status likely would introduce a variety of new equipment and chemical materials to the Haitian factories, accompanied by the related environmental issues which are common in the global apparel industry.

Emphasis on the role of OSH Committees in the factories and the development of a well-trained group of supervisors and workers will be critical going forward. These individuals can be involved in the presentation of in-factory training to co-workers, in the conduct of the risk and hazard assessments which are pivotal in HSE performance but are currently inadequate, and eventually in the development and implementation of an HSE management system approach to these issues at the factory.

Communication of HSE issues to the general factory workforce is essential, and may best be delivered on a breadth of topics to a large audience via a train-the-trainer approach. The training materials from the workshops associated with this project can be adapted for use in shorter sessions, or supplemented to create new sessions, which can be conducted by BWH staff or other training providers, and eventually by factory personnel. Further development and use of the BWH OSH Good Practice sheets in worker training sessions is recommended. Translation of all written training materials into Creole and/or French should increase the effectiveness of such training efforts.

D.1. Proposed Action Plan for Information and Training

- 1. Upper Management Training.** Develop HSE training sessions which focus on the upper management personnel of factories, and consider modules in which the audience may include both upper management and workers. Introduce the concept of an HSE management system approach.
- 2. Segmented Training Modules.** Adapt the workshop training content and materials into separate, brief modules on topics such as an overview of HSE issues in apparel factories, activities for OSH Committees, HSE risk and hazard assessment, PPE, chemical safety, and worker health and productivity, among others.
- 3. Expanded Training Module on Risk Assessment.** Expand the risk assessment training module with greater emphasis on chemical hazards, ergonomics, and hazard controls other than PPE, and include in-factory practicum in risk and hazard assessment. Continue to focus these efforts on middle management and OSH Committees.
- 4. Train-the-Trainer Program.** Collaborate with the BWH advisory team to develop a train-the-trainer program which would enable HSE information to be communicated directly and effectively to workers in the factories.
- 5. Translation Services for HSE-Related Materials.** Identify translation services for the factories so that Safety Data Sheets (or related chemical fact sheets), training materials, and other HSE-related information are available in the language of the workers (Creole).

D.2. Enhanced Hazard/Risk Assessments in Factories

The capability to conduct competent and credible hazard and risk assessments is a prerequisite for the successful implementation of other programs such as PPE, machine safety and ergonomics, and is a basic element in any management system approach to HSE issues. The paucity of experienced HSE professionals in Haiti places the onus for hazard assessments on relatively inexperienced factory personnel. Enhanced training content and the concurrent opportunity to apply the learning in the factory environment have been proposed above (see item 3). In settings such as the Metropolitan Industrial Park, the CODEVI Park and the Caracol Industrial Park, where several different apparel factories may exist in close proximity, there is a unique opportunity to enhance the knowledge of the managers and workers who have the responsibility for such assessments via “cross-pollination”. Factories should permit hazard assessments to be conducted by joint teams with representatives from their own

OSH Committee and other OSH Committees within the Park. If such inter-factory access is not favored, then there should at least be opportunities for multiple OSH Committees to meet and discuss current HSE issues at the factories.

A recommendation to better ensure the quality and uniformity of periodic factory inspections by OSH Committee members is training on the use of the checklist which has been developed and provided to the factories by BWH. The most effective approach might be the performance of an inspection by OSH Committee members in the company of one or more BWH Advisors. Reliance on such a document during inspections represents a systematic approach which is consistent with the next set of recommendations, which pertain to HSE management systems.

The final recommendation on hazard assessment represents a best practice which is observed infrequently in the apparel industry but which occurs with more regularity in footwear and other industries. Formally, the need for the use of respiratory protection, and the identification of the proper type of such protection, depend upon the concentration of air contaminants to which the worker is exposed. For virtually all of the chemical vapors associated with the range of cleaning solvents that are in use, this type of quantitative exposure assessment can be performed by a convenient passive sample badge method. Sample analysis can be conducted by laboratories which are accredited by the American Industrial Hygiene Association (AIHA) or other relevant accreditation organization.

If other methods of hazard control such as chemical selection or ventilation cannot be implemented or may not be adequate, then such exposure monitoring would reveal whether or not the use of respiratory protection is necessary to prevent hazardous exposures to airborne chemicals. The reliance on respiratory protection to protect workers who are involved in spot-cleaning, without consideration of other hazard control measures or determination of the actual extent of the exposure, can be misplaced because of the several aspects of respirator use which are often neglected by factories yet are necessary to ensure proper protection of workers (see pages 22 – 23 of this report). In addition, the burdensome nature of this PPE often results in its misuse by workers.

D.2. Proposed Action Plan for Enhanced Risk/Hazard Assessments in Factories

- 1. Joint OSH Hazard Assessments.** Encourage factories in industrial parks to conduct joint OSH hazard assessments, or at the least, convene joint OSH Committee meetings to discuss current issues.

- 2. Training on the BWH Inspection Checklist.** BWH should assist in the utilization of its hazard assessment checklist by training by OSH Committee members during a routine inspection at their factory.
- 3. Rigorous Assessment for Spot Cleaning Operations.** Initiate a more rigorous hazard assessment process in regard to spot cleaning operations, which would include review of Safety Data Sheets for specific chemical ingredients, documentation of the conditions of use at spot cleaning work stations, and ultimately the monitoring of worker exposures to chemical vapors at those e factories whose operations are thought to present the highest risk to workers.

D.3. Initial Phase of Health Safety and Environmental Management System Development

Ultimately, a long-term objective would be to have the apparel factories in Haiti develop and document a suitable HSE management system to address these issues in a credible and systematic manner. Presumably, this eventually would result in less need for monitoring by BWH, the apparel brands, or other stakeholders to ensure adequate HSE performance by the factories. As mentioned, this is a universally acknowledged aspect of HSE best practice, and while incremental improvements in HSE performance are desirable and may be noteworthy, continued performance is best assured via the management system approach.

The seed for such a written HSE management system exists currently in the Haitian apparel industry due to the BWH requirement for a written OSH policy at each factory. According to the findings of the most recent Synthesis Report, only a single factory of those that were assessed did not have such a policy. Getting from the policy to an entire HSE management document may be a gradual process, but that process can be started by posing the appropriate questions to the factory in regard to how they plan to achieve the goals and objectives that presumably are stated in their policies. The need for written plans and procedures should become evident.

However, it is recommended that this HSE system development process be allowed to occur gradually, and that a comprehensive HSE management system framework not be imposed on these factories all at once. The BWH experience indicates that the factories are far from substantial compliance on OSH issues, and so the better approach would seem to be a dual focus on improved performance and enhanced HSE capacity, which in turn may lead to recognition of the benefits that an HSE management system can bring to factory operations.

This is not to imply that no documentation should be developed in the short term. It seems that two HSE aspects of factory operations should be addressed, and would represent a convenient initial factory foray into the world of management systems. The first is Fire and Life Safety, which represents a potentially costly risk to the factory if roles and responsibilities are not understood and if planning and related factory conditions are inadequate. The other present opportunity for documentation is with the OSH Committees, where it can involve the identification of their appropriate roles and activities within the factories as well as the use of the inspection checklist. The need for the development of an OSH Committee plan or procedure should create some momentum for the process.

D.3. Proposed Action Plan for the Initial Phase of HSE Management System Development

- 1. Factory Compliance with BWH Documentation Requirements.** Emphasize factory compliance with BWH requirements for a written OSH policy, a chemical inventory and Safety Data Sheets.
- 2. Framework for Fire & Life Safety Plans.** Provide factory personnel with the framework or template for Fire & Life Safety Plans, which can then be used to create individual Plans based upon the particular factory details. This action item is closely related to the Action Plan in section D.4.
- 3. Written Procedures for OSH Committees.** Work with the OSH Committees to create a written procedure which details all aspects of the Committees, including membership, roles, activities, etc. and which includes the commitment by upper management to support this function.

D.4. Coordinated Emergency Response Planning at the Industrial Parks

During the missions to Haiti, it has become evident that several factors exist which may impact the ability of individual factories at industrial parks to conduct successful emergency response activities. This in turn points out the need for some type of coordinated planning and response activity that includes all tenant factories, the park management, and the community responders, in order to reduce the likelihood of the occurrence of a disaster such as Tazreen Fashions and Ali Enterprises. These factors include:

- The relatively slow response time that is anticipated for arrival of community fire-fighting personnel;
- The security measures at individual factories, such as perimeter fences and locked gates; and

- The heavy vehicle traffic that is present on the roadways within the parks.

The first of these factors makes it imperative that individual factories have adequately equipped and trained incipient-stage fire-fighting capability, since at present if a fire gets beyond the incipient stage then the building is likely to be destroyed. It also raises the reasonable question of the need for professional fire-fighting services and equipment within the parks.

The other two factors are more pertinent at the Metropolitan Industrial Park than the other parks, and they indicate that the evacuation of workers from a factory building to a safe assembly area may not be as simple as the factory management may think. Evacuation to the area immediately outside most buildings at the PIM puts workers in a relatively enclosed, fenced and gated area which would not be considered safe during a fire or other emergency event. However, going beyond the fences may put workers on a busy roadway.

Mechanisms should be established for notification of park management in the event of an emergency, the implementation of traffic control measures, and the identification of safe assembly areas for evacuated workers which are free of fences and distant from any vehicle traffic, including response vehicles. The safe assembly areas identified by one factory should be consistent with those that have been selected by adjacent factories, so that overcrowding and confusion do not result if multiple building evacuations are necessary during the same incident.

D.4. Proposed Action Plan for the Development of a Coordinated Emergency Response Plan at the Industrial Parks

- 1. Convene meetings of all affected parties at the Parks.** There should be regular meetings (e.g., monthly or quarterly) attended by representatives of the park management, each factory tenant, and civil organizations which may be involved in emergency response. The issues that are identified above should provide the subject matter for discussion and planning, particularly traffic control and the establishment of safe assembly areas for evacuated workers.
- 2. Periodic opportunities for training of incipient-stage fire-fighting responders.** Since the incipient stage response is critical under present circumstances, it should be mandatory for every factory in the Parks to send representatives for this training, which is best offered at each of the Parks on some regular basis.
- 3. Written Plans for Fire & Life Safety (see Action item 2 in section D.3. above).** Each of the relevant parties in the Parks – park management, tenant factories, and civil responders – should prepare appropriate written plans which are

consistent with those of the other parties, something which can be ascertained by review of these plans at the regular group meetings at the Parks.

- 4. Professional fire-fighting services at each Park.** Park management or other appropriate Park representatives should meet with the relevant government authorities to discuss the possibility of establishing fire-fighting services, with adequate equipment, personnel and associated utilities, at each of the industrial parks in Haiti.

It is hoped that all of these recommendations and proposed actions can be implemented nationwide. While the workshops of the past two years have been well attended, attempts should be made to extend future activities to other segments of the Haitian apparel industry.

IV. Conclusions

The apparel sector provides needed employment to approximately 30,000 Haitians today. In order to ensure the economic growth of the sector and to protect the workers who are employed in it, it is prudent to increase the capacity of garment factory managers and workers to adhere to internationally recognized standards and applicable Haitian law in the area of Occupational Safety and Health as well as other labor standards. With support from a variety of stakeholders including the IDB, Better Work Haiti is in a position to facilitate the improvement of Occupational Safety and Health conditions in Haitian garment factories.

In addition, the following concluding points are offered to summarize key learnings from the Discussion Paper and the missions to Haiti:

A. Demonstrated need. There is a demonstrated need for improvement in Occupational Safety and Health performance as evidenced by the Biannual Synthesis Reports, which are prepared to communicate progress on compliance on all key BWH compliance clusters.

B. Priorities for improvements. Notwithstanding this demonstrated need, in the BWH system of measuring compliance, if a factory is found deficient on any one question, or aspect, of a compliance point, then it is considered to be non-compliant on the entire point. In terms of summary reporting on factory performance on the most important Occupational Safety and Health issues, this can lead to a skewing of the results. A system of compliance assessment and reporting that reflects some degree of prioritization among the risks might lead to a more nuanced understanding of the status of Occupational Safety and Health issues in Haitian garment factories and in turn to the creation of priorities for improvements.

C. Appetite for training. The appetite for training amongst garment factory managers and OSH committee workers in Haiti has been whetted. Evaluation forms from the several workshops demonstrate that a/ the training workshops were very well received and b/ additional training workshops are desirable. This appetite can be strengthened further by underscoring the developing body of evidence that suggests that corporate investment into Occupational Safety and Health and worker wellness programs yields a significant return in terms of improved productivity.

D. Broader dissemination of Occupational Safety and Health information. In order to reach a critical mass of factory managers and workers who serve on OSH committees, it will be necessary to modify, and expand in some cases, the training content that has been provided during the missions in 2012-2013. This should be done in close collaboration with BWH and other suitable HSE training providers if necessary. The development of an additional module on *how* to teach Occupational Safety and Health issues in the factory context may be of value in order to establish a train-the-trainer approach. A high-level module should be created for executive management so that an appreciation of the value of improving Occupational Safety and Health performance can be supported. Brief training modules on targeted topics of high relevance can then be used by trained instructors in factories. In settings where several different apparel factories may exist in close proximity, there is an opportunity to convene collaborative training workshops involving more than one factory.

E. Role of hazard and risk assessments. The capability to conduct competent and credible hazard and risk assessments is an identified prerequisite for the successful implementation of Occupational Safety and Health programs and for enhanced factory performance and worker safety, and is a basic element in any management system approach to environmental issues as well. The paucity of experienced health, safety and environmental professionals in Haiti adds to the compelling need to further populate training content.

F. Key OSH issue(s). Of the eight OSH compliance points identified by BWH, it seems that “Chemicals and Hazardous Substances” may be the most problematic. There is no apparent attempt in the apparel factories of Haiti, nor by BWH, to distinguish among the relative toxicities of the various chemicals in use, which is an integral aspect of the risk assessment for worker exposure to chemicals. However, performance on Fire and Life Safety issues in the global apparel industry is receiving close scrutiny. Coordinated emergency preparedness and planning in the industrial parks of Haiti,

requiring the cooperative though not technically demanding efforts of multiple parties, should be undertaken promptly.

G. Key Environmental issue. At this time, the Haitian apparel industry is not confronted by most of the major environmental issues which face the global industry because most Haitian factories are limited to “cut and sew” operations. Hence the important current issue may be solid waste reduction and disposal. However, looming in the not-too-distant future is the likely need for hazardous waste disposal, and there is no existing appropriate disposal site in the country.

H. Relationship of capacity building to risk mitigation. Recommendations for improved Health, Safety and Environmental performance in the Haitian apparel industry are related to the capacity of the Haitian factories to recognize, mitigate and manage the risks that exist as a result of their operations. As capacity-building occurs at all levels of factory personnel, they will be better able to appreciate and to address the Health, Safety and Environmental issues with which they will be confronted, and in regard to which they seem to have present difficulty in satisfying the expectations of BWH and other stakeholders.

I. Reliance on Better Work programs. BWH and its sister programs in the apparel industries of other nations provide relatively comprehensive coverage of Occupational Safety and Health issues as well as the seven other labor issues which are addressed in their CAT document for assessment and in their other advisory services. However, consistent with the focus of the ILO, the Better Work programs do not currently consider environmental issues in their factory evaluations or their advisory services.

J. Applicability of the Haiti experience to other countries in the region. The comparison of the current level of Occupational Safety and Health performance in Haiti to that of other countries in which Better Work is operating demonstrates that, with slight variance, this continues to be an area of significant underperformance. As such, it is possible to deduce that the findings and recommendations in this Discussion Paper will be generally applicable to other garment factories in emerging economies elsewhere in the region and the world.