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Analysis of Work-Related Safety & Health Hazards of Unrepresented Workers in the Iron Working Industry

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ANALYSIS OF WORK-RELATED SAFETY & HEALTH HAZARDS OF UNREPRESENTED WORKERS IN THE IRON WORKING INDUSTRY

ABSTRACT

Brady Bratcher, Iron Workers Regional District Council & Iron Workers Local 845; Ruth Ruttenberg and Maria Obando, Ruth Ruttenberg & Associates, Inc. February 2010.

CPWR - The Center for Construction Research and Training awarded a research grant to the Iron Workers Regional District Council & Iron Workers Local 846 to analyze work-related safety and health hazards of unrepresented workers in the iron working industry. Interviews were with 87 non-union iron workers employed by 17 different companies and were based on a 69 question survey, in Spanish.

This report documents the poor working conditions in which many work. The research focuses on 7 main areas: demographics of the study group, working conditions, safety and health hazards and practices on the job, safety and health awareness and concerns about work, benefits, workers' rights and training, and increases in awareness and hazard identification.

Five key findings:

1) 86 of 87 workers said that they were afraid of getting hurt at work.
2) Every one of the 87 iron workers said that they would like to have formal health and safety training.
3) While over 95 percent of workers used chop saws, over 90 percent did not receive face shields or eye protection.
4) 45 percent of workers said that they did not receive body harnesses from their employer.
5) Less than 20 percent of workers received healthcare benefits from their employer and only one worker had healthcare that covered the entire family.

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"Sometimes the company makes us work too much and they don't give us even time to eat. We only eat in the morning but no lunch. We have to keep working without food. Sometimes it is already midnight, and we have to keep working, and try to stand without food."

"I hurt my back. I lost 7 months of work…"

"A co-worker broke his foot because the employer forced him to carry too much."

In 2008, CPWR awarded a research grant to the Iron Workers Regional District Council & Iron Workers Local 846 to analyze work-related safety and health hazards of unrepresented workers in the iron working industry. A survey of 69 questions was developed with the help of consultants at Ruth Ruttenberg & Associates, Inc. It was translated into Spanish and interviewers were trained in survey techniques and IRB principles. By year's end 2009, interviews were completed with 87 Spanish-speaking iron workers employed by 17 different companies in the west and southwest. Students from Southern Methodist University assisted in conducting interviews in the Dallas / Fort Worth area.

This report summarizes these in-depth interviews and the poor working conditions in which many of them work. The research focuses on 7 main areas: demographics of the study group, working conditions, safety and health hazards and practices on the job, safety and health awareness and concerns about work, benefits, workers' rights and training, and increases in awareness and hazard identification.

All workers thought their jobs were dangerous and all, but one, were afraid of getting hurt on the job. They complained of lack of PPE and poorly constructed scaffolds.

Many workers had problems accessing drinking water and many had no rest or lunch breaks.

Few workers had received safety and health training, but all wanted it. Nearly all workers felt that a union would improve their working conditions.

There was a clear appreciation among these Spanish-speaking iron workers for the respect and concern shown to them by the iron workers union.

ANALYSIS OF WORK-RELATED SAFETY & HEALTH HAZARDS OF UNREPRESENTED WORKERS IN THE IRON WORKING INDUSTRY

I. INTRODUCTION

In 2008, CPWR awarded a research grant to the Iron Workers Regional District Council & Iron Workers Local 846 to analyze work-related safety and health hazards of unrepresented Spanish-speaking workers in the iron working industry. A survey of 69 questions was developed with the help of consultants at Ruth Ruttenberg & Associates, Inc. It was translated into Spanish and interviewers were trained in survey techniques and IRB principles. By year's end 2009, interviews were completed with 87 iron workers employed by 17 different companies in the west and southwest. (See Appendix 1 for details of interview respondents.)

This report summarizes the 87 in-depth interviews with Spanish-speaking iron workers. The research focuses on 7 main areas: demographics of the study group, working conditions, safety and health hazards and practices on the job, safety and health awareness and concerns about work, benefits, workers' rights and training, and increases in awareness and hazard identification.

II. BACKGROUND

A. The Construction Industry and Its Hazards

Building trades work is extremely dangerous. Falls are a major hazard. While construction represents about 8% of all workers, construction workers experienced nearly 50% (384) of the 770 fall fatalities that occurred across all industries in 2005.[1] Falls are the leading cause of fatal injuries and the second most common cause of nonfatal lost work day injuries in construction. In 2005, falls caused 396 of 1,243 work-related deaths from injuries (32%),[2] and 36,360 nonfatal injuries

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1 U.S. Bureau of Labor Statistics (BLS), 2005, cited in National Occupational Research Agenda (NORA), National Construction Agenda For Occupational Safety and Health Research and Practice in the U.S. Construction Sector, Developed by the NORA Construction Sector Council, October 2008, available at http://www.cdc.gov/niosh/NORA/comment/agendas/construction/pdfs/ConstOct2008.pdf, retrieved January 2010.

2 U.S. Bureau of Labor Statistics, 1992-2005 Census of Fatal Occupational Injuries. Calculations by CPWR Data Center. Cited in CPWR – The Center for Construction Research and Training, *The Construction Chart Book*, *The U.S. Construction Industry and Its Workers*, Fourth Edition, December 2007, produced with support from the National Institute for Occupational Safety and Health grant number OH008307, available at http://cpwr.com/pdfs/CB%204th%20Edition/Fourth%20Edition%20Construction%20Chart%20Book%20final.pdf, retrieved February 2010.

– 23% of the total.[3] Some construction occupations have much higher rates of deaths from falls than others.

Construction workers face a number of other serious hazards on the job. These include building and structure collapse, compressed gases, confined spaces, dangers associated with cranes and hoists, potential of crushing, electricity, fire and explosions, dangers posed by motor vehicles and heavy equipment, scaffolds, slips and trips, and trenches and excavation.

Chemicals also poise significant health risks to construction workers. These include: acids, adhesives, asbestos, asphalts, beryllium, carbon monoxide, cleaning products, epoxies, isocyanates, lead, metals, paints and coatings, silica, solvents, thinners, welding fumes and wood dusts.

Construction workers also face extreme temperatures, ergonomic problems, noise and vibration, and radiation.

B. Iron Work and Its Hazards

Iron work ranks among the top 10 most dangerous jobs in the United States. Ironworkers held about 97,800 jobs in 2008. Structural and reinforcing iron and metal workers are employed in all parts of the country, but most work in metropolitan areas, where the bulk of commercial and industrial construction takes place.[4]

In 2008, iron and steel work was named the fourth most dangerous job in the United States with a fatality rate of 46.9 per 100,000 FTE's after fishing workers, logging workers, and aircraft pilots and flight engineers.[5]

According to The Center for Construction Research and Training (CPWR):

> "Injury numbers and rates vary widely among construction occupations. For the period 2003-2005, ironworkers (structural iron and steel workers in the U.S. Bureau of Labor Statistics' occupational code) and electrical power installers had the highest rates of work-related deaths at, respectively, 68.9 and 57.3 per 100,000 full-time workers. The death rate for ironworkers during that same three-year period was almost six times higher than the rate of 11.6 per 100,000 full-time

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3 U.S. Bureau of Labor Statistics, 2005 Survey of Occupational Injuries and Illnesses, Table R75, available at http://www.bls.gov/iif/oshwc/osh/case/ostb1731.pdf, retrieved November 2007, cited in *The Construction Chart Book*.

4 U.S Bureau of Labor Statistics, *Occupational Outlook Handbook, 2010-11 Edition*, Structural and Reinforcing Iron and Metal Workers, available on the Internet at http://www.bls.gov/oco/ocos215.htm, retrieved January 29, 2010.

5 U.S. Federal Bureau of Labor Statistics, "National Census of Fatal Occupational Injuries In 2008," *Economic News Release*, available at http://www.bls.gov/news.release/cfoi.nr0.htm, retrieved January 2010, as reported in *The MetroWest Daily News* by Sue Scheible, Aug 15, 2008, available at http://www.ironworkersdcne.org/news/234IWDangerousMetroDailyNewsBHarvey.htm, retrieved January 2010.

> workers for all construction occupations co mbined. Still, fatal injury rates have declined for these two high-risk occupations since 1992, when ironworkers experienced 143.3 deaths per 100,000 full-time workers and power installers had 149.3 deaths per 100,000 fulltime workers." [6]

For nonfatal injuries, iron workers had the third highest rate of nonfatal injuries, 392.7 per 10,000 full-time workers after construction helpers and sheet metal workers.[7]

Work-related deaths from falls among ironworkers are 10 times higher than the construction average. More iron workers are killed from falls (38.7 per 100,000 full-time workers) than workers in any other construction occupation.[8]

Iron workers also face hazards associated with welding -- noise, heat, ultraviolet radiation, gases, electromagnetic radiation, and fumes. Iron workers are one of three trades that are likely to have the highest exposures to both welding fumes and to manganese based on the tasks that they perform.[9]

A NIOSH study also found that between 1984 and 1991 a group of over 13,000 iron workers in its study group experienced a higher number of deaths from falls and other injuries when compared to the U.S. population. The group also had higher mortality from lung cancer, mesothelioma, pneumoconiosis, and other respiratory diseases.[10]

In addition, iron work has been identified as a trade in which the exposures to ergonomic risk factors are high.[11] Several studies have found that iron workers are required to "lift, carry, and manipulate heavy loads; work in severely cramped spaces or sustained awkward postures; work with their arms overhead; use heavy, vibrating pneumatic tools to which they must apply large

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6 CPWR – The Center for Construction Research and Training, *The Construction Chart Book*, *The U.S. Construction Industry and Its Workers*, Fourth Edition, December 2007, produced with support from the National Institute for Occupational Safety and Health grant number OH008307, available at http://cpwr.com/pdfs/CB%204th%20Edition/Fourth%20Edition%20Construction%20Chart%20Book%20final.pdf, retrieved February 2010. Note: Since some occupations have a relatively small number of employees, three-year averages are used because they provide more reliable estimates than data from a single year.

7 *CPWR, The Construction Chart Book.*

8 CPWR, *The Construction Chart Book.* Note: Because many construction workers work part-time in construction, safety and health statistics are defined in terms of full-time equivalents to allow comparisons with other industries. Full-time work is defined as 2,000 hours worked per year.

9 CPWR, *The Construction Chart Book.*

10 U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health, NIOSH Report of Activities for Fiscal Year 1997, available at http://www.cdc.gov/niosh/97reprta.html; "Increased Mortality Among Construction Workers DHHS (NIOSH) Publication No. 99-116, available at http://www.cdc.gov/niosh/pdfs/99-116.pdf.

11 Forde M. and Buchholz B., "Task content and physical ergonomic risk factors in construction ironwork," *Int J Ind Ergon* 34:319–333, 2004.

forces and hold in static positions; and work at great heights while constantly exposed to the elements such as rain, snow, ice, wind, and temperature extremes."[12] Moreover, iron workers are at high risk for work-related back disorders and are exposed to constant trip and fall hazards.[13] Results from one study showed that, in addition to back disorders, the most common doctor-diagnosed musculoskeletal disorders were tendonitis (19%), ruptured disk in the back (18%), bursitis in the shoulder (15%), and carpal tunnel syndrome (12%).[14]

A recent NIOSH evaluation of iron workers' exposures to WMSD risk factors found that tying rebar at ground level using pliers increases the risk of developing hand-wrist and low back injuries.[15]

A Canadian study by the Construction Safety Association of Ontario found that in Ontario, rodworkers have a higher proportion of lost-time musculoskeletal injuries to the back and upper limbs than all other construction trades combined and the total cost of their lost-time injuries and the amount of their time off work also to be greater than for all other construction trades combined.[16]

Iron work is among the noisiest trades and work environments, with average exposures over 95 dB(A), so iron workers are at significant risk of noise induced hearing loss if not properly protected (earplugs, earmuffs, and canal caps) to reduce sound reaching the ear).[17]

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12 Forde, 2004; Forde, 2000; Lindstrom et al., 1974; Hart and Link, 1991, cited in Forde M. and Buchholz B., "Task content and physical ergonomic risk factors in construction ironwork." *Int J Ind Ergon* 34:319–333, 2004.

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15 U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health (NIOSH), NIOSH Health Hazard Evaluation Report: Genesis Steel Services, Inc., Baltimore, MD. Cincinnati, OH, 2005, NIOSH HHE Report 2003–0146–2976, available at www.cdc.gov/niosh/hhe/reports/pdfs/2003-0146-2976.pdf, retrieved January 2010.

16 Vi, Peter, Hon. B.SC. (Ergonomics), M. Eng., Project Coordinator, CSAO, "Rebar Tying Machines – Part 2," Construction Safety Magazine, Volume 14, Number 1, Spring 2003, available at http://www.csao.org/uploadfiles/magazine/vol14no1/rebar2.htm, retrieved January 2010. [This article follows up on one that appeared in our Winter 2001/2002 issue (Volume 12, Number 4).]

17 Electronic Library of Construction Occupational Safety and Health (eLCOSH), Dru Sahai, Construction Safety Association of Ontario, "Hearing Conservation" (Part of Construction Safety Association of Ontario Magazine, Autumn 2000), available at http://www.elcosh.org/en/document/425/d000416/hearing-conservation.html, retrieved February 2010.

C. Hispanic Construction Workers

In 2005, 18.6 million Hispanics were employed in the United States, comprising 13.1% of the workforce. The increase in the Hispanic portion of the construction labor force has been rapid. From 1990 to 2005, the proportion of workers rose 156% for construction compared to 86% for all industries. In construction, 27% of production workers were Hispanic, higher than in any other industry, except agriculture.[18]

Hispanic construction workers are less likely to be union members than non-Hispanic construction workers. In 2005, less than 14% of union members in construction were of Hispanic origin even though Hispanic workers accounted for 23% of the construction workforce meaning lower wages, less health insurance, and fewer pensions and other benefits.[19]

Hispanics are less likely to have health insurance coverage than their non-Hispanic counterparts, with 61% of non-Hispanic construction workers having employment-based coverage, compared to 30% of Hispanic construction workers.[20]

The number of work-related deaths among Hispanic workers is disproportionately high. The work-related death rate for Hispanics was nearly twice that of non-Hispanic workers in 2000 (19.15 versus 10.6 per 100,000 full-time workers). Although death rates in construction have declined slightly in recent years, there is still a gap between Hispanic workers and non-Hispanic workers: in 2005, the death rate was 12.4 per 100,000 full-time Hispanic workers compared with 10.5 per 100,000 full-time non-Hispanic workers. This trend is partly attributed to differences in occupational distribution: Hispanic workers are more likely than non-Hispanics to work in low-skilled, high-risk construction jobs, such as roofers and laborers.[21]

For injured Hispanic construction workers, only 27% of medical costs were paid by workers' compensation, much less than the 50% paid for white, non-Hispanics. The rest was paid by workers and their families or by other public or private sources, subsidizing workers' compensation medical coverage by at least $734 million per year in construction.[22]

While progress has been made in job safety and health over the decades since the founding of the Occupational Safety and Health Administration, some jobs are more dangerous and some groups

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[18] CPWR, *The Construction Chart Book.*

[19] CPWR, *The Construction Chart Book.*

[20] CPWR, *The Construction Chart Book.*

[21] CPWR, *The Construction Chart Book.*

[22] Dong, Xiuwen, Ringen, Knut, Men, Yurong, and Fujimoto, Alissa, "Medical Costs and Sources of Payment for Work-Related Injuries among Hispanic Construction Workers," *Journal of Occupational and Environmental Medicine*, 49(12):1367-1375, 2007, cited in CPWR, *The Construction Chart Book.*

in greater danger. Immigrants in the U.S. are facing an epidemic of workplace death.[23] Whereas overall fatalities have decreased, Hispanic fatalities have increased 86 percent since the BLS Census of Fatal Occupational Injuries (CFOI) began collecting statistics in 1992.[24] According to a 2003 study by the National Academy of Sciences,[25] foreign-born Latino men are nearly two and a half times more likely to be killed on the job than the average U.S. worker, and about 50 percent more likely to be injured. (Statistics have declined since 2006, perhaps in part due to a special initiative by OSHA.)

III. SURVEY RESULTS

Iron work is dangerous and unrepresented workers generally have fewer health and safety protections on the job. Hispanic workers, who made up 100% of the interviewees, are likely to work in conditions that are more dangerous still. What follows are the results from interviews of 87 Spanish-speaking iron workers in the western and southwestern parts of the country. Detailed results of the interviews are given in Appendix 1.

A. Demographics of the Study Group

The 87 interviewed Spanish-speaking iron workers were employed by 17 different non-union companies in the west and southwest.[26] Twenty percent had worked for their current employer for less than a year. Over 60 percent of the interviewees had worked for their current employer for 3 years or less and over 80 percent had worked for their current employer for 6 years or less. Their experience in construction was longer, with 30 percent having more than 10 years of construction experience and 70 percent had 7 or more years of experience. Nearly 85 percent had done similar work previously in a different location.

Most of the respondents worked with reinforcing steel or rebar – carrying and/or installing and/or tying it.

Eighty percent of the iron workers interviewed were paid on an hourly basis and 20 percent were paid piece rate.

B. Working Conditions

Those interviewed knew they worked in dangerous jobs. Each and every iron worker interviewed said his job was dangerous. Nearly 85% said their jobs were very dangerous. All but one, of the 87, said they were afraid of getting hurt at work.

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[23] AFL-CIO, *Immigrant Workers at Risk: The Urgent Need for Improved Workplace Safety and Health Policies and Programs,* August 2005.

[24] AFL-CIO, *Death on the Job: The Toll of Neglect*, April 2008.

[25] Reported in Aizenman, Nurith, "Harsh Reward for Hard Labor, *Washington Post*, December 29, 2002, pp. C-1,6.

[26] For more details see tables' results in Appendix I.

The major safety concerns, for over 90 percent of interviewees, were: slips, trips, and falls; falls from heights; falling objects; hot metals; impalement; and moving machinery. Interestingly, ergonomic concerns were mentioned by only one iron worker, despite the fact that NIOSH warns that "manually tying rebar with a pliers involves rapid and repetitive hand and forearm movements associated with increased risk of developing a hand, wrist, or elbow disorder." The results of a NIOSH study clearly showed that manually tying rebar using a pliers exposes workers to serious risk factors for developing WMSDs of low back and the upper limbs.[27]

Most of these individuals work in hot and dry desert environments, in which NIOSH recommendations include:[28]

- Providing cool water or liquids to workers
- Providing rest periods with water breaks
- Providing cool areas for use during break periods.

Nonetheless, many of the iron workers toiled in conditions where these special needs were not seriously considered.

1. Drinking Water on Site. Many of the respondents, 13 percent, did not receive drinking water at work from their employer (11 of 86 responding.) At one company, in Texas, 40 percent reported having problems with obtaining drinking water at work. Almost 10 percent said they had to pay for their drinking water. Fifteen percent said they had to pay for ice. Fifteen percent said their employer did not provide the water-cooler or jug. Approximately 10 percent said their water was not cool or clean. One interviewee reported that he had lost consciousness at work due to dehydration.

2. Breaks. More than half said their crews did not take rest breaks. Over 80 percent said that breaks were not paid for by the employer. Several respondents did not get lunch breaks. Over half said they were sometimes required to work through designated lunch and break periods. Some were not paid for overtime.

One worker said:

> "*Sometimes the company makes us work too much, and they don't give us even time to eat. We only eat in the morning but no lunch. We have to keep working without food. Sometimes it is already midnight, and we have to keep working, and try to stand without food.*"

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27 NIOSH Health Hazard Evaluation Report, HETA #2003-0146-2976.

28 U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health, "Heat Stress," http://www.cdc.gov/niosh/topics/heatstress/, retrieved January 2010.

3. Threats from Supervisors. Nearly 10 percent of those responding felt that they had been threatened by a supervisor or foreman of their current employer. In one company, in Texas, over 25 percent had felt threatened.

One worker commented:

> *"A co-worker got hit when giving the reinforcing steel to the one driving the forklift. He had head injuries, but he had to go back to work because they threatened to fire him if he did not go back to work."*

C. Safety and Health Hazards and Practices on the Job

Over one-fourth of respondents said they had never been warned to "be careful" while working with products such as paint, oil, grease, chop saw blades, gasoline, or other chemicals. Over 35 percent of respondents said they worked with electric-powered tools at work. Nearly 90 percent worked with gas-powered tools.

Over 95 percent used chop saws and over 75 percent used them daily. Yet, nearly 45 percent were not provided dust masks or respirators to protect them from the dust and fumes associated with their use of chop saws. Over 90 percent did receive face shields or eye protection. Nearly 20 percent said that they needed safety glasses, but did not receive them.

Besides safety glasses, respondents most often said they needed, but frequently did not receive from their employer, harnesses (45%) and gloves (25%). Some also complained about the need for hard hats, lanyards, and wall hooks. According to respondents:

- *"PPE is only sometimes available."*
- *"PPE is available, but we have to pay for it."*

One-fourth of those responding said the tools they used were not in good condition. One quarter said there were tools they needed to have in order to do their work that were not provided by the employer. Among the tools they needed, but some did not receive, were chains, pliers, drills, and saws.

Fully one-third had asked their employer to provide tools to make their work easier or safer, and 65 percent said they did indeed receive what they asked for. Many though had to buy the equipment that they needed regularly, especially fall protection harnesses, gloves, hard hats, safety glasses and steel-toed shoes – well over half for the first four items.

Despite the potentially hazardous tools that most use, 45 percent said they had never received formal instruction on how to use those tools.

Only 10 percent said they had been fined by their current employer for not wearing safety equipment, but only 10 percent said they used hearing protection regularly.

Nearly 40 percent said that scaffolds they worked on were not constructed properly.

D. Safety and Health Awareness and Concerns about Work

Concerns expressed by the interviewees were dominated by hazards so dangerous as to pose serious danger to life and limb. More than 25 percent said that they or a coworker had been hurt on the job in an incident that caused lost work days. Among injuries reported were: broken feet, fingers cut off, heat-related illness, crushed to death by machine, broken arms, broken hands, back sprain, broken legs, back injuries, waist injuries, wounded mouth, and broken lips. One worker said: "*A co-worker broke his foot because the employer forced him to carry too much*."

While none had actually seen a person die at the site from an accident, over 25 percent had seen an accident requiring an ambulance; over 60 percent had seen an accident requiring hospitalization; and three-quarters had seen accidents that required hospital emergency room treatment.

Among iron workers interviewed, at least three-quarters, but as many as 90 percent, had "very great concern" for: their safety and health at work, getting enough safety and health training, improving their working conditions generally, getting more skilled training, obtaining full-time work, increasing their wages, and obtaining health insurance or better health insurance.

E. Benefits

Less than 20 percent received health care benefits from their employer and only one person had health care that covered the entire family. One trainee commented "*After many years, the company offers workers health insurance, but it is too expensive, so workers prefer not to have it*."

Forty-five percent of those with health care coverage had no co-pay. Of those who were injured on the job (13), all but one said they did not pay for any of the doctor bills, even though two-thirds said there was no workers compensation claim filed.

F. Workers' Rights and Training

Most employees (55%) said they had no employee handbook, and for those who did, 80 percent said they did not have a copy. Seventy percent had not received any orientation or training materials from the company and more than 60 percent had not been given any kind of safety manual.

Forty-five percent said they had never been given any "orientation" or training in order to better perform their work duties. Thirty percent said they had never had health and safety training. Of those who had had training, 60 percent had 8 hours or less; 15 percent had less than an hour. Most though (95%) had regular safety meetings at their job sites, with them most often occurring weekly.

Every one of the responding 87 iron workers said they would like to have formal health and safety training. Every person responding said they would like more information on their health and safety rights and responsibilities on the job as well as information on specific health and safety issues they face at work.

More than two-thirds did not know what an MSDS sheet was. Eighty percent said they had never been told where the company stores them or that they were allowed to review information on them.

Over 95 percent thought that a union could help them get a safer work place.

G. Increases in Awareness and Hazard Identification

Awareness is key to helping workers stay safe. Respondents reflected on past experiences and how dangers were ignored. With training, their responses might likely have been different. Below are just a few examples mentioned:

- *"For me to talk about safety is very important because I would like to learn more about my health and safety. For example, in a work group it is very important to communicate because that can prevent accidents. The greatest risk at work is when I work with the machine that lifts the materials we work with. (crane) I have seen some machines hit other machines, and also I have seen them fall on top of buildings. However, I would like to be able to drive cranes safely. Thank you for the interview and for worrying about our safety and health."*

- *"I would like more training."*

- *"A friend had an accident. I think we need to learn to be more careful."*

IV. CONCLUSION

Interviewing unrepresented Spanish-speaking iron workers from western and southwestern part of the U.S. documented a number of serious health and safety problems. Basic hygiene, basic training, and basic PPE were lacking in a number of cases. Given the extremely hazardous nature of much iron work, the revealed conditions only exacerbated on-the-job hazards already faced by many of these workers.

No one should be afraid of getting hurt at work. No one should work in the hot sun without the benefit of drinking water. No one should be put in a hazardous situation without training. But interviews show that for many iron workers hazardous jobs were made needlessly more hazardous.

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APPENDIX 1

ANALYSIS OF WORK-RELATED SAFETY & HEALTH HAZARDS OF UNREPRESENTED WORKERS IN THE IRON WORKING INDUSTRY

87 IRON WORKERS RESPONDING

1. What company do you work for?

Company Name	#	%
Aurora Construction	3	3.4
Aricon	1	1.1
Black Mountain Rebar Placers Inc.	1	1.1
Desert Steel	13	14.9
Edith Erectors Inc.	1	1.1
Endo Steel Inc.	4	4.6
Fraire's Rebar	16	18.4
Gabriel Steel	1	1.1
Great Western Erectors LLC	20	23.0
HG Steel Inc.	1	1.1
Indus Construction	3	3.4
J.L. Steel	7	8.0
Potter Concrete	9	10.3
Suto Steel	2	2.3
TAS Commercial Concrete Construction	2	2.3
WAC Construction	2	2.3
West Texas Rebar	1	1.1
Total Responding	***87***	***99.5***

Sub industry in which the interviewee works:	**#**	**%**
a. Residential post tensioning	0	0.0
b. Pre-engineered metal buildings	0	0.0
c. Commercial reinforcing steel	23	34.3
d. Structural Steel	42	62.7
e. Other: Commercial	2	3.0
No answer	*20*	-
Total Responding	***67***	***100.0***

2. How long have you worked there?

	#	%
Less than 1 year	18	21.4
1-3 years	35	41.7
4-6 years	18	21.4
7-10 years	6	7.1
11-15 years	4	4.8
More than 15 years	3	3.6
No answer	*3*	-
Total Responding	***84***	***100.0***

3. What are your specific job duties?

	#	%
Install and tie reinforcing steel (or rebar)	25	32.9
Tie reinforcing steel (or rebar) and cables	17	22.4
Carry and tie reinforcing steel (or rebar)	10	13.2
Install/ Install reinforcing steel and install cables	4	5.3
Work with reinforcing steel (or rebar)	4	5.3
Helper	3	3.9
Journeyman/ Foreman/ Leadman	3	3.9
Labor	2	2.6
Cables	1	1.3
Journeyman helper	1	1.3
Other	6	7.9
No answer	*11*	-
Total Responding	***76***	***100.0***

4. How many years of construction experience do you have in the U.S?

	#	%
1-3 years	7	8.1
4-6 years	21	24.4
7-10 years	32	37.2
11-15 years	15	17.4
More than 15 years	11	12.8
No answer	*1*	-
Total Responding	***86***	***99.9***

5. How do you get paid?

	#	%
Hourly	67	80.7
Piece rate	16	19.3
No answer	*4*	-
Total Responding	***83***	***100.0***

A. WORKING CONDITIONS

6. Did you work somewhere else previously doing the same type of work?

	#	%
Yes	71	83.5
No	14	16.5
No answer	*2*	-
Total Responding	***85***	***100.0***

7. Does your employer provide drinking water while you work?

	#	%
Yes	75	87.2
Sometimes	4	4.7
No	6	7.0
They treat us differently	1	1.2
No answer	*1*	-
Total Responding	***86***	***100.1***

8. Do you have to pay for the water?

	#	%
Yes	8	9.4
No	77	90.6
No answer	*2*	-
Total Responding	***85***	***100.0***

9. Do you have to pay for ice?

	#	%
Yes	13	14.9
No	74	85.1
Total Responding	***87***	***100.0***

10. Does your employer provide the water-cooler / jug?

	#	%
Yes	74	86.0
No	12	14.0
No answer	*1*	-
Total Responding	***86***	***100.0***

11. If your employer provides water, is it cool, clean drinking water?

	#	%
Yes	74	88.1
No	8	9.5
Sometimes	1	1.2
Tap water	1	1.2
No answer	*1*	-
Not applicable	*2*	-
Total Responding	***84***	***100.0***

12. Does the crew that you work in take rest breaks?

	#	%
Yes	43	49.4
No	44	50.6
Total Responding	***87***	***100.0***

13. Are your breaks paid for by the employer?

	#	%
Yes	16	19.0
No	68	81.0
Not applicable/No breaks	*3*	-
Total Responding	***84***	***100.0***

14. Do you have a lunch break?

	#	%
Yes	79	91.9
No	6	7.0
Sometimes	1	1.2
No answer	*1*	-
Total Responding	***86***	***100.1***

15. Have you ever been required to work through designated lunch and break periods with your current employer?

	#	%
Yes	47	54.7
No	38	44.2
Sometimes	1	1.2
No answer	*1*	-
Total Responding	***86***	***100.1***

16. Have you ever been paid for overtime with your current employer?

	#	%
Yes	78	95.1
No	3	3.7
Sometimes	1	1.2
Not applicable	*1*	-
No answer	*4*	-
Total Responding	***82***	***100.0***

17. Have you ever felt threatened by any supervisor or foreman of your current employer?

	#	%
Yes	7	8.1
No	79	91.9
No answer	*1*	-
Total Responding	***86***	***100.0***

18. Have you ever been warned to "be careful" while working with products such as paint, oil, grease, chop saw blades, gasoline or other chemicals etc.?

	#	%
Yes	63	73.3
No	23	26.7
No answer	*1*	-
Total Responding	***86***	***100.0***

19. Are you required to use electric-powered tools at work?

	#	%
Yes	31	35.6
Sometimes	1	1.1
No	55	63.2
Total Responding	***87***	***99.9***

20. Are you required to use gas-powered tools at work?

	#	%
Yes	77	88.5
No	10	11.5
Total Responding	***87***	***100.0***

21. Do you use a "chop saw" in your work?

	#	%
Yes	83	95.4
No	4	4.6
Total Responding	***87***	***100.0***

22. <u>If yes</u>, does your employer provide "dust masks" or respirators to protect you from exposure to dust / fumes associated with the use of chop saws?

	#	%
Yes	46	56.1
No	36	43.9
No answer	*1*	-
Not applicable	*4*	-
Total Responding	***82***	***100.0***

23. How often do you use a "chop saw" in your work duties?

	#	%
Daily	66	75.9
Once a week or more	11	12.6
Once a month or more	6	6.9
Less than once a month	0	0.0
Never	4	4.6
Total Responding	***87***	***100.0***

24. <u>If yes</u>, when using a "chop saw," does the company provide a "face shield" or other eye protection?

	#	%
Yes	77	92.8
No	6	7.2
Not applicable	*4*	-
Total Responding	***83***	***100.0***

25. Have you ever been given formal instruction as to how to use your tools?

	#	%
Yes	48	55.8
No	38	44.2
No answer	*1*	-
Total Responding	***86***	***100.0***

26. Are the tools generally in good condition?

	#	%
Yes	54	66.7
Usually	1	1.2
Sometimes	4	4.9
No	20	24.7
Don't know	2	2.5
No answer	*6*	-
Total Responding	***81***	***100.0***

27. Are there any tools that the company does not provide, that you need to do your work?

	#	%
Yes	23	28.8
No	54	67.5
The company doesn't provide any tools	1	1.3
I am not sure/ Don't know	2	2.5
No answer	*7*	-
Total Responding	***80***	***100.1***

28. <u>If so</u>, what?

Tools Not Provided	#	%
They don't provide any tools	3	13.6
Chains	2	9.1
Diagonal cutter	1	4.5
Drills	1	4.5
Gloves	6	27.2
Hard hat	1	4.5
Harness	10	45.5
He buys what he needs	1	4.5
Lanyard	1	4.5
Many	1	4.5
Hydraulic ram (or jack)	1	4.5
Meter to measure	1	4.5
Pliers	4	18.2
PPE	1	4.5
Reel	1	4.5
Safety glasses	4	18.2
Saws	1	4.5
Torch in good conditions	1	4.5
Wall hook	2	9.1
No answer	*2*	-
Total Responding	***22***	-

29. Have you ever asked your employer to provide tools that would make your job easier or safer?

	#	%
Yes	26	33.3
No	52	66.7
No answer	*9*	-
Total Responding	***78***	***100.0***

30. <u>If so</u>, did the employer give you those tools?

	#	%
Yes	16	64.0
Yes, but they charge me for it	1	4.0
No	8	32.0
Not applicable	*52*	-
No answer	*10*	-
Total Responding	***25***	***100.0***

31. Do you have to <u>buy</u> any of the following equipment from your employer?

	#	%
Disposable protective clothing	3	5.4
Dust mask	9	16.1
Fall protection harness	38	67.9
Gloves	47	83.9
Hard hat	42	75.0
Hearing protection	7	12.5
Respirator	7	12.5
Safety glasses	42	75.0
Steel-toed shoes	20	35.7
No answer	*31*	-
Total Responding	***56***	-

32. What PPE is available from the employer?

	#	%
Disposable protective clothing	2	3.5
Dust mask	23	40.4
Fall protection harness	30	52.6
Gloves	47	82.5
Hard hat	38	66.7
Hearing protection	20	35.1
Respirator	11	19.3
Safety glasses	48	84.2
Steel-toed shoes	9	15.8
No answer	*30*	-
Total Responding	***57***	-

33. Which PPE do you use regularly?

	#	%
Disposable protective clothing	3	3.8
Dust mask	16	20.0
Fall protection harness	79	98.8
Gloves	78	97.5
Hard hat	79	98.8
Hearing protection	9	11.3
Respirator	5	6.3
Safety glasses	80	100.0
Steel-toed shoes	66	82.5
No answer	*7*	-
Total Responding	***80***	-

34. Have you ever been fined for not wearing safety equipment by your current employer?

	#	%
Yes	9	10.5
No	77	89.5
No answer	*1*	-
Total Responding	***86***	***100.0***

35. If you use scaffolds, are they properly constructed?

	#	%
Yes	19	47.5
No	15	37.5
Not sure	6	15.0
Not applicable/ Don't use scaffolds	47	-
Total Responding	***40***	***100.0***

36. Do you believe that your job is dangerous?

	#	%
Yes, very dangerous	73	83.9
Yes, somewhat	10	11.5
Sometimes	4	4.6
No	0	0.0
Total Responding	***87***	***100.0***

37. Are you afraid of getting hurt at work?

	#	%
Yes	86	98.9
No	1	1.1
Total Responding	***87***	***100.0***

38. Which of the following pose a threat of injury to you on this job?

	#	%
Falls from height	86	98.9
Slips, trips, falls	87	100.0
Falling objects	81	93.1
Hot Metals	81	93.1
Impalement	80	92.0
Moving machinery	80	92.0
Confined space	66	75.9
Energy source	68	78.2
Noise and vibration	36	41.4
Fire and explosion	17	19.5
Inhalable agents	12	13.8
Skin contact with chemicals	17	19.5
Asbestos	10	11.5
Lead	10	11.5
Ergo	1	1.1
Radiation	5	5.7
Total Responding	***87***	-

39. Have you or a co-worker ever been hurt on the job, causing lost work days from the job?

	#	%
Yes	22	26.8
Yes in another company	1	1.2
No	59	72.0
No answer	*5*	-
Total Responding	***82***	***100.0***

40. Briefly describe the accident.

- Broken foot/ I broke a foot
- Some co-workers cut their fingers off, and another worker broke a foot.
- I have seen co-workers (new on the job) get sick with a heat-related illness. They were sent home and they never came back.
- Co-workers were tying up, and the [illegibe word] broke and crushed two co-workers. He did not witness what happened, but other co-workers told him.
- Broken right arm/ Broken left arm
- Broke his hand because reinforcing steel fell on his hand.
- Broke his hand.
- Back sprained.
- A worker broke a leg two months ago.
- A fracture
- A co-worker got injured. He was new on the job, only a week. He injured his hand. I have not seen him since then.
- A co-worker broke his foot because employer forced him to carry too much.
- A co-worker got hit when giving the reinforcing steel to the one driving the forklift. He had head injuries, but he had to go back to work be cause they threaten him to fire him if he did not go back to work.
- Sometimes the company makes us work too much and they don't give us even time to eat. We only eat in the morning but no lunch. We have to keep working without food. Sometimes it is already midnight, and we have to keep working, and try to stand without food.
- A fall from a ladder with all the cables.
- A friend got hurt twice.
- A slip
- I hurt my back because my work involves a lot of physical strength. It is a very dangerous work.
- Hurt his back when lifting reinforcing steel.
- One hurt his waist, but he did not lose workdays.
- Wounded mouth, broken lips. Had to drive to hospital to get stitched up.

41. If yes, for the most severe accident	Yes		No		Total Responding
	#	%	#	%	
The person died at the scene	0	0.0	20	100.0	20
An ambulance was called	5	26.3	14	73.7	19
The person required hospitalization	11	61.1	7	38.9	18
Medical attention at a hospital emergency room was required	12	75.0	4	25.0	16
Medical attention at a doctor's office was required	13	86.7	2	13.3	15
The company doctor was involved	4	36.4	7	63.6	11
There were lost workdays	9	75.0	3	25.0	12
Only first aid was needed	6	46.2	7	53.8	13
Number of Incidents	***23***				

42. Have you or another co-worker ever gotten sick with a heat-related illness?	#	%
Yes, I got dizzy	16	20.0
Yes, I lost consciousness	1	1.3
Yes, I was taken to the hospital	0	0.0
Yes, other: *A friend fainted because of heat*	3	3.8
No	60	75.0
No answer	*7*	-
Total Responding	***80***	***100.1***

43. If so, what happened (please explain)	#
While working I got dizzy because of heat and exhaustion.	1
When I started to work as an iron worker, I used to get dizzy but not often.	1
…I did not loose days from work. I had to work too many hours… I only got dizzy	1
I lost consciousness because I got dehydrated. I went home and the next day I was fine to work.	1
I got dizzy. It was too hot. I had to rest for an hour.	1
I got dizzy, but after I rested 15 minutes I was ok to return to work.	1
I got dizzy, and I was not sweating at all. They sent me home but that was it.	1
Got dizzy because of heat.	4
A friend fainted because of heat and exhaustion.	1
A coworker got sick because of the heat. They sent him home like at 2:00 pm, and I don't know what happened next.	1
I got dizzy 1.5 hours before the end of my work day. They told me to rest for ½ hour. After resting, I felt better and kept working for the hour left.	1
It was hot. They let me rest and gave me the option of going home.	1
Many workers get dizzy because of heat. They give us a break and after a few minutes they put us back to work.	1
Terrible headache	1

44. Currently, how much concern do you have for:

	Very great concern		Great concern		Some concern		Not very concern		Total # Responding
	#	%	#	%	#	#	#	%	
Your safety & health at work	73	85.9	7	8.2	2	2.4	3	3.5	85
Getting enough safety & health training	65	76.5	10	11.8	5	5.9	5	5.9	85
Improving working conditions generally	67	79.8	8	9.5	4	4.8	5	6.0	84
Getting more skill training	67	80.7	9	10.8	6	7.2	1	1.2	83
Obtaining full-time work	60	77.9	7	9.1	1	1.3	9	11.7	77
Increasing wages	70	86.4	7	8.6	3	3.7	1	1.2	81
Obtaining health insurance or better health insurance	72	90.0	5	6.3	0	0.0	1	1.3	80
Other comments: Water; to get fired without benefits; payment of total hours; hours are always less; more work									

B. BENEFITS

45. Does the company provide healthcare to employees?

	#	%
Yes	29	34.9
Yes, but we prefer not. It is bad. Mexico better	1	1.2
No	49	59.0
No. It is too expensive	2	2.4
No, only journeyman	1	1.2
I don't know	1	1.2
No answer	*4*	-
Total Responding	***83***	***99.9***

46. If so, does the healthcare cover the entire family?

	#	%
Yes	4	14.3
Yes, but it costs too much	1	3.6
No	23	82.1
Not applicable	*57*	-
No answer	*2*	-
Total Responding	***28***	***100.0***

47. Do you have to pay for any part of your healthcare coverage?

	#	%
Yes	13	46.4
No	13	46.4
I don't know	2	7.1
Not applicable	*55*	-
No answer	*4*	-
Total Responding	***28***	***99.9***

48. If you were ever injured, did you have to pay for the doctor bills?

	#	%
a. I was never injured	46	78.0
b. Yes, all of them	0	0.0
c. Yes, most of them	0	0.0
d. Yes, some of them	1	1.7
e. I didn't pay anything	12	20.3
No answer	*28*	-
Total Responding	***59***	***100.0***

49. Was a workers' compensation claim filed?

	#	%
Yes	2	16.7
No	8	66.7
Not sure	2	16.7
No answer	*28*	-
Not applicable	*47*	-
Total Responding	***12***	***100.1***

50. Are you required to notify in the event of an accident?

	#	%
Yes	50	64.9
No	14	18.2
Not sure	13	16.9
No answer	*10*	-
Total Responding	***77***	***100.0***

C. WORKERS' RIGHTS AND TRAINING

51. Does the company have an employee handbook?

	#	%
Yes	36	41.4
No	47	54.0
Not sure/ Don't know	4	4.6
Total Responding	***87***	***100.0***

52. If so, do you have a copy of the handbook?

	#	%
Yes	7	20.6
No	27	79.4
No answer	*2*	-
Total Responding	***34***	***100.0***

53. With this employer, have you ever been given any "orientation" or training in order to better perform your work duties?

	#	%
Yes	47	54.7
No	38	44.2
Only when someone gets hurt	1	1.2
Not applicable	*1*	-
Total Responding	***86***	***100.1***

54. With this employer, have you ever had health and safety training?

	#	%
Yes	61	70.1
No	26	29.9
Total Responding	***87***	***100.0***

Workers, who <u>did not</u> have any training, have been working for:	#	%
Less than a year	7	26.9
1 year	6	23.1
2 years	1	3.8
3 years	4	15.4
4 years	1	3.8
5 years	3	11.5
6 years	2	7.7
8 years	1	3.8
10 years	1	3.8
Total Responding	***26***	***99.8***

55. <u>If so</u>, how much?

	#	%
Less than an hour	8	13.1
Less than an hour monthly	1	1.6
1-2 hours	13	21.3
3-8 hours	14	23.0
9-16 hours	12	19.7
More than 16 hours	13	21.3
Total Responding	***61***	***100.0***

56. Do you have regular safety meetings?

	#	%
Yes	82	94.3
No	5	5.7
Total Responding	***87***	***100.0***

57. <u>If so</u>, how often?

	#	%
Daily	3	3.8
Weekly	71	88.8
Monthly	2	2.5
Monthly to journeymen	1	1.3
Rarely	1	1.3
Other: Sometimes; Every 3 or 4 months	2	2.5
No answer	*2*	-
Total Responding	***80***	***100.2***

58. Would you like to have formal health and safety training?

	#	%
Yes	87	100.0
No	0	0.0
Total Responding	***87***	***100.0***

59. Did the company give you copies of any orientation/training materials?

	#	%
Yes	26	31.7
No	56	68.3
No answer/ Not applicable	*2*	-
Total Responding	***82***	***100.0***

60. Were you given any kind of safety manual?

	#	%
Yes	33	38.8
No	52	61.2
No answer	*2*	-
Total Responding	***85***	***100.0***

61. Do you know what an MSDS sheet is?

	#	%
Yes	28	32.9
No	57	67.1
No answer	*2*	-
Total Responding	***85***	***100.0***

62. Have you ever been told where the company stores those sheets?

	#	%
Yes	17	20.2
No	67	79.8
No answer	*3*	-
Total Responding	***84***	***100.0***

63. Has the company ever told you that you may review the information on these MSDS sheets?

	#	%
Yes	18	20.9
No	68	79.1
No answer	*1*	-
Total Responding	***86***	***100.0***

64. May I make copies of any employee handbook, safety or orientation manual that the company gave to you?

	#	%
Yes / Yes if I find it	8	29.6
No	19	70.4
Not applicable/ Don't have a copy	*60*	-
Total Responding	***27***	***100.0***

65. May I make copies of any healthcare information that your employer gave to you?

	#	%
Yes	8	32.0
No	17	68.0
Not applicable	*62*	-
Total Responding	***25***	***100.0***

66. Do you think a union could help you get a safer work place?

	#	%
Yes	78	96.3
No	1	1.2
Not sure	2	2.5
No answer	*6*	-
Total Responding	***81***	***100.0***

67. Would you like information on your health and safety rights and responsibilities on the job?

	#	%
Yes	83	100.0
No	0	0.0
No answer	*4*	-
Total Responding	***83***	***100.0***

68. Would you like information on specific health and safety issues you face at work?

	#	%
Yes	83	100.0
No	0	0.0
No answer	*4*	-
Total Responding	***83***	***100.0***

69. Do you have a safety story to tell? If you have experienced a safety or health accident that you think more or better training could have prevented, we would like to hear about it. If you have experienced a "near miss" and training helped to prevent injury, we would like to hear about that too.

- While working… I broke a leg at work. Tripped and got caught in rebar column.
- PPE is only sometimes available.
- PPE is available, but we have to pay for it.
- The company has fired workers.
- I would like more training.
- I hurt my back. I lost 7 months of work. The company paid my bills.
- For me to talk about safety is very important because I would like to learn more about my health and safety. For example, in a work group it is very important to communicate because that can prevent accidents. The greatest risk at work is when I work with the machine that lifts the materials we work with. (crane) I have seen some machines hit other machines, and also I have seen them fall on top of buildings. However, I would like to be able to drive cranes safely. Thank you for the interview and for worrying about our safety and health.
- A friend had an accident. I think we need to learn to be more careful.