

**Lessons from Brazil:  
ASSE's 2011 Delegation to Brazil**

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**Introduction**

ASSE has expanded its reach beyond the United States and increased its influence internationally. During the past year, ASSE has signed Memorandums of Understanding (MOUs) with the Abu Dhabi EHS Center and the Nigerian Institute of Safety Professionals (NISP). ASSE also has international chapters in the Middle East, Kuwait, Nigeria, Philippines, and India.

During November 2011, an ASSE delegation traveled to Brazil and visited the cities of Sao Paulo and Rio de Janeiro for nine days. Under the leadership of Delegation Leader Darryl C. Hill, the group had the opportunity to meet with government organizations, university leaders, and professional safety organizations. The delegation included 13 safety and health professionals who are ASSE members, and two ASSE professional staff representatives. Delegates represented the United States, Australia, Canada and Germany.

The People to People Citizen Ambassador Program was founded in 1956 by president Dwight D. Eisenhower as a vehicle to expand international relations beyond the structure of governmental agencies. People to People International is a nonpolitical, private-sector organization dedicated to the promotion of international understanding and friendship through educational, cultural, and humanitarian activities by exchange of ideas and experiences. Delegates pay a fee to the organization to arrange the trip. The fee pays for the costs of the trip, including airfare, lodging, transportation, most meals, and visits to several cultural sites. People to People arranges all professional and cultural meetings and visits, and provides national and local guides in each city. The guides also act as formal interpreters and provide assistance with navigating the cultural norms of the country visited. This was ASSE's second trip overseas organized by the People to People International. The first trip occurred in November 2010 to China.

Brazil's international profile has risen as a direct result of an improved economy. Brazil has experienced an increased role in regional and global affairs. Brazil has been a catalyst to promote economic integration in South America. Political leaders seek further integration into the global economic marketplace. The focus for Brazil is to strengthen diplomatic relations with other global emerging actors, including Russia, India, and China.

## **Delegation Objectives**

The mission was to develop ongoing professional relationships, which will lead to the improvement of workplace processes and reduce the number of injuries, illnesses, and fatalities in both countries. ASSE continues to investigate ways to improve occupational safety and health around the world. The delegation exchanged mutual ideas, best practices, and concepts relating to occupational safety and health management.

## **Trip's Highlights and Observations**

The delegation lasted for nine days and, during that time, visited a number of organizations and businesses that are engaged in the occupational safety and health profession. The delegation members are included at the end of the paper. Following is a few highlights and observations from the trip and are captured in chronological order.

## **Sao Paulo**

### Sunday, November 6

After our arrival in Brazil and a nice brunch at a local restaurant, we had the opportunity to tour São Paulo (pronounced San Paolo) by bus. São Paulo is the largest city in Brazil (and in the southern hemisphere) and, by updated statistics, it is the seventh largest city in the world, bigger than Moscow, Seoul and Beijing (<http://exploredia.com/10-most-populated-cities-in-the-world-2011>) Brazil is a country of great contrast in terms of its economic distribution and mix of different cultures due to its history. São Paulo is considered Brazil's business center. It is a huge city (with a population of over 20 million) and a variety of architectural styles of buildings erected adjacent to each other. The delegation was informed there are more heliports in São Paulo than in New York City, which could be explained by a mega-rich minority that holds the majority of the country's wealth, with the rest of the population having a comparatively low income (by world's standards) with a practically nonexistent middle class. According to Forbes, Brazil has the ninth largest number of billionaires in the world, a number much larger than in other Latin American countries, and even more than Japan. ([http://en.wikipedia.org/wiki/List\\_of\\_countries\\_by\\_the\\_number\\_of\\_US\\_dollar\\_billionaires](http://en.wikipedia.org/wiki/List_of_countries_by_the_number_of_US_dollar_billionaires)).

The most striking aspect about São Paulo (and the balance of our in-country travel) is a coexistence of extreme wealth with extreme poverty in very close proximity. During the tour in São Paulo, we saw some beautiful colonial era cathedrals, surrounded by gray modern buildings, lots of street graffiti (some is considered art due to artistic interpretation, depicted scenes, and the sheer scale of some of the projects), old churches and cemeteries and many homeless people. On Sunday afternoon, our tour bus traveled with relative ease, which changed to extremely congested traffic on the weekdays. Our two guides—Toni, a resident of São Paulo (a “Paulista”) and the other, Marcella Granatiere, native to Rio de Janeiro (“Carioca”) who was with our group for the entire trip—joked competitively, about the popularity contest between these two largest cities in Brazil. We were told that since São Paulo does not have an ocean front and beautiful beaches like Rio does, Sao Paulo's outstanding food and rich cultural life is what sets it apart.

Brazil's cuisine is very rich in meats. It seems that Brazilians like them all. Especially popular are beef, veal, pork and smoked meats, but seafood is also popular. The buffet style of food serving appeared to be prevalent; during our entire trip we were served only twice. The remainder of our meal experiences included a type of buffet (usually appetizers and salads are always served that way). There is an abundance and a great variety of fruits and vegetables in Brazilian cuisine as well.

### FUNDACENTRO

The day started with a visit to FUNDACENTRO. The delegation was hosted by Dr. Dalva Maria Deluca Dias, the executive director. Fundacentro is a public service center for occupational health and safety, comparable to the U.S.'s National Institute of Occupational Safety and Health (NIOSH). It was created back in the 1970s (backed by the Brazil Ministry of Labor) to address Brazil's increasing accident rate at work. We were informed that, in 1975, two million occupational accidents took place (this statistic includes traffic accidents commuting to and from work). At present (the latest available statistics are from 2008), this rate has decreased to 400,000 accidents annually due to development and enforcement of safety laws and regulations. One such law, referred to as SESMT, which was passed in 1972, outlines the required number of safety professionals in a particular commercial or industrial organization, based on the number of employees and the level of exposure to risks. Because of this legislation, the demand for safety professionals is increasing. There are an estimated 20,000 safety engineers in Brazil today.

There are several analytical and research labs on the premises of FUNDACENTRO. We were graciously escorted by a team of representatives who provided a comprehensive tour and answered our numerous questions. FUNDACENTRO representatives also "put us in touch" with a reporter for a national monthly safety publication, *Protecao Magazine*, who interviewed ASSE representatives for an article, which has already been published.

### ABB in Guarulhos

The ABB facility manufactures transformers for medium- and high-voltage equipment. It is located outside of São Paulo in Guarulhos. The visit was one of the highlights of the São Paulo program. We were hosted by Manuel Siqueira, ABB's Safety Manager in Brazil. Manuel shared with the delegates a lot of valuable information about the ABB operation as part of his introductory overview. He and his colleagues (other safety engineers) provided the delegation a shop floor facility tour. Due to proprietary technology, no cameras were allowed. This impressive operation started back in 1954. Currently, they have 1500 employees that work three shifts throughout the day. The facility is quite large and is located on a 50,000m<sup>2</sup> area. ABB's safety program in Brazil was officially implemented in 2000, and it exceeds governmental guidelines and requirements. We also observed more strict safety requirements than those mandated by the Brazilian government during our trip to the German ThyssenKrupp facility described later in the paper.

### UNIP – Universidade Paulista/Paulista

On Tuesday, we had the opportunity to visit and compare two universities, both of which have safety engineering programs. The first university was a private school, UNIP (Universidade Paulista/Paulista University), which started its safety engineering program back in 1990. We did not have a chance to meet with the students, but several professors, including the department head and recently retired Professor Leonidio Ribeiro (a prominent figure in Brazil's Safety and Hygiene field and the author of many federal occupational safety laws and guidelines), provided us with a brief introduction about their department.

The meeting attendees then broke up into discussion groups (general industry, construction, healthcare and transportation) to network and discuss common interests. We were advised that the University has a separate engineering program specializing in the oil industry and renewable energy. Recently, they developed a new specialization in environmental engineering, due to the fact that

protection of the environment is becoming an urgent problem in Brazil. Brazil is diverse in its natural resources, ranging from newly discovered, large, off-shore deep water oil reserves to hydroelectric power, the production of sugarcane ethanol, which is used to blend with gasoline for fueling cars and biodiesel, which is used for commercial transportation. Brazil has been energy self-sufficient since 2006. Exploiting those resources, proper attention should be given to the protection of the environment.

### University of Sao Paulo (USP) Polytechnic Institute

The second school was a public university, one of the most prominent schools in Brazil, the University of São Paulo's (USP) Polytechnic Institute. This visit was another highlight of the trip. The delegation was greeted and hosted by the professor of the Mining and Petroleum Engineering Department, Dr. Sergio Medici de Eston. Dr. Eston revolutionized the university's safety engineering program, and grew it significantly through online offerings. In 1996, he started a specialized program in safety engineering, which required 617 hours of in-class education (two years). Of those hours, 150 are on the subject of industrial hygiene, which is required by law for all safety engineers. Today, more than 600 students graduate from the university's safety program each year, the highest to date.

Following Dr. Eston's presentation, the ASSE delegation was shown the computer-based interactive training the school has developed. The professor and students demonstrated a virtual training environment on sampling instruments and what could occur in the workplace. Safety engineering and management techniques could be practiced in their "sim-city" work environment. "Sim-city" choices included municipal public works, traffic engineering, manufacturing and construction.

During our extensive conversations with the professor and his staff, we learned that, due to the economic growth and the above-mentioned legislation that mandates the number of safety professionals in a given business, the demand for safety engineering professions has increased dramatically over the last five to seven years.

There are several factors that contribute to Brazil's explosive economic growth, which has overtaken the UK as the world's sixth largest economy and is predicted to overtake France for the fifth spot by 2015:

- Significant off-shore oil reserve discoveries and rich natural resources: Brazil itself lacks technological know-how and equipment to explore those reserves. Because of that fact and incentives that were initiated, Brazil now attracts a significant amount of foreign direct investments (FDI). In fact, by the most recent statistics, FDI in Brazil has increased by a factor of four since 2005, totaling USD661 billion. The US is its main investor (USD104.7 billion), followed by Spain (USD85.3 billion) and Belgium (with USD50.4 billion).
- Rio de Janeiro will host both the FIFA World Cup in 2014 and the Summer Olympic Games in 2016. These two events will require several large scale projects in construction, transportation and improvements in the city and country's infrastructure as a whole.
- (Sources: <http://economictimes.indiatimes.com/news/international-business/brazil-will-soon-be-worlds-no-5-economy-minister/articleshow/11276999.cms>); <http://economictimes.indiatimes.com/markets/analysis/Brazil-overtakes-UK-as-worlds-sixth-largest-economy/articleshow/11263480.cms>); and <http://en.mercopress.com/2011/12/16/fdi-in-brazil-jumped-four-times-since-2005-totalling-661bn-us-main-investor>)

This growth presents an opportunity for safety professionals as well. Young engineers, after receiving their Bachelor's degree in engineering, can and many choose SH&E as their professional

specialization. This requires an additional one and a half years of education. There is an opportunity for ASSE to explore opportunities to engage young safety professionals/students and expand their networking opportunities in ASSE.

## **Rio de Janeiro**

Rio is a beautiful and an amazing city. Its oceanfront and clean beaches of white sand are a great reason for local pride. As mentioned previously, our national guide, Marcella Granatiere, is a native resident of Rio (they are called Carioca people) who knows her city well and is very proud resident. It was Marcella who taught the delegates many aspects about Brazil, its culture and its people. Each delegate shared their key takeaways from every day of the trip. Marcella summarized the Brazil culture and attitude by stating the following:

1. “Regardless of what is going on in your professional life or your family life, always have time for pleasure” (the Brazilians do!)
2. “Everything will be OK at the end. And if it is not OK, you have not reached the end yet.” The Brazilians, in contrast to the U.S. culture, tend to stress out less about their deadlines and deliverables. They appear to have a more laid-back attitude to business and life in general.

### Fundacao COGE

In Rio, the professional program consisted of several visits. The delegation visited Fundacao COGE ([www.funcoge.org.br](http://www.funcoge.org.br)) and the Brazilian Society of Safety Engineering (SOBES).

Fundacao COGE, a nonprofit organization, was formed approximately 13 years ago by seven electrical companies to conduct research, training and consulting services, focused on electrical utility safety. It has contributed to the Brazilian national electrical safety code NR-10. Currently, their network is comprised of 67 companies. Our host was Dr. Cesar Vianna Moreira. Fundacao has, through its member companies, implemented a safety management system, which it formulated from the program developed by Ontario Electric Utility, Canada.

### Brazilian Society of Safety Engineering (SOBES)

SOBES is a professional membership organization similar to ASSE and AIHA combined (with approximately 7000 individual members) that was founded in 1971. SOBES’s members are not limited to the engineering field, but also come from such backgrounds as doctors, nurses, psychologists, and so on. The mission of this organization is to: (1) advance the safety profession, (2) exchange information, and (3) form collaborations/partnerships with public institutions to improve legislation. SOBES’s members participate in development of Brazilian national legislation (Ministry of Labor). We were told that SOBES’s representatives are invited to serve on the board of advisors when there is an intended change to local labor laws. SOBES is also a member of JOLASEHT (Latin America Association on Safety and Work Hygiene).

At SOBES, the delegation received informative presentations by hosts President Marlise Vasconcellos and Vice President Harold Sadella; Darryl Hill spoke on behalf of the delegation. During the discussion, the delegation learned about several issues that are facing the safety profession in Brazil, including the shortage of qualified safety professionals in high-risk industries, such as nuclear energy production and off-shore oil extraction. Currently, there is no professional safety certification available in the market. However, there is a need for such certification, as the discipline is in need of qualified and experienced professionals. SOBES is conducting a feasibility study for the country’s safety certification program.

### JOLASEHT (Latin America Association on Safety and Work Hygiene)

The delegates met JOLASEHT representatives later in the day. It was very difficult to travel by bus that day as an unprecedented public demonstration was taking place. Marcella explained the significance and unusual nature of this event: normally demonstrations in Brazil are organized by the people ("grass roots").

This demonstration was the first one organized by the government of the Rio de Janeiro state. The organized rally was in downtown Rio. As was mentioned earlier, Brazil is economically a very diverse country. This is not only true for different strata of the society, but also this disparity is observed geographically. The main wealth is located in the southern part of Brazil, around cities like Rio and São Paulo. The rest of the country is underdeveloped when compared with these biggest cities. The state of Rio de Janeiro would like to keep all of the proceeds from the recently discovered off-shore oil field. However, the federal government (this was the policy of the latest and very popular president Lula de Silva) insists on distributing the funds from Rio's oil extraction throughout the country. This controversy spurred Rio's local government to organize a demonstration in Rio. The event was largely publicized and promoted. However, according to Marcella, it was difficult to predict the size of the crowd that would appear. The municipal government of Rio provided free public transportation and commuter buses for people to attend the demonstration. The downtown area where the delegation had meetings was closed to traffic.

During the afternoon Darryl, Yassie, and Laura had an opportunity to meet with JOHASET's executive committee (which held their meeting in conjunction with the JOLASEHT' 2011 conference). A brief presentation was given to the committee members explaining the purpose of the visit to Brazil, providing information and handout materials about ASSE and INSHPO (International Network for Safety and Health Professional Organizations). The efforts were well received and provided some valuable contacts with members of safety associations and societies of other Latin American countries represented. After the meeting, the delegation was invited to attend the conference's closing ceremony.

### ThyssenKrupp

During the end of the Brazil Delegation trip, another highlight included a visit to German's ThyssenKrupp steel mill, located in Sepetiba Bay, just 25 miles outside of Rio. This is a huge manufacturing and steel processing plant that has been in operation for just over a year. This is the largest ThyssenKrupp's investment outside of Germany with approximately €5.2 billion in direct investments (this site is a joint venture with Brazil's Vale, where 73.13% belongs to the German side and the rest is owned by Vale). Their vision is: "To be the world's first choice of steel slabs, passionately produced in Brazil."

The Chief of the Fire Department (Marcos Ferreira) provided a tour around the plant. Dr. Patricia Gusmao presented a site safety program overview. The facility is very large: the entire territory is 9km<sup>2</sup>, with its own cargo ship port and railways. There are currently 3500 employees working in the plant, with a total of 30,000 workers employed during the construction stage. The delegation was told that the operating capacity in terms of input of raw materials (coal and iron ore) is 9m tons/year with the output of 5m tons of steel products (high magnesium and high aluminum steel slabs). One hundred percent of the finished product is exported back to Europe or the United States. Byproducts, such as gas and slag (for making cement), are sold locally.

Steel production is usually harmful to the environment because of the poisonous gases that are released into the atmosphere during the coal burning process. Management of this plant put in place several programs to protect the environment. They include air cleaning (coal is cooked for 23 hours to burn poison gasses) and the installation of three air-testing sites to monitor air quality and water

recycling (over 90% of the water used at this site is recycled) as the production of steel requires a lot of water for cooling purposes.

Patricia Gusman, a chemical safety engineer, spoke to the group about their corporate safety program, which has a goal of zero accidents. However, for the period from 2010 to 2011, there were 72 accidents documented in this facility. While the rate of occupational accidents (the majority is related to hand injuries) has a downward trend, there is work to be accomplished to reach their goal.

In the afternoon, we were scheduled to visit a local favela, a shantytown neighborhood. These are numerous in and around Rio. But due to it getting late, scheduled police raids (to confiscate drugs) and security reasons, the trip was cancelled. Saturday was the day of a relaxing open-jeep ride to Concorova, the famous statue of Jesus the Redeemer. It was truly an enjoyable experience, despite it being the first cloudy day for our entire trip.

## **Conclusion**

The organization of the trip was well done, and the delegation very much enjoyed the business and cultural programs that were attended. The delegation provided an excellent learning experience and a better understanding of Brazil. The delegates made a number of good contacts, and it provided a great opportunity for ASSE to continue to develop those relationships as the Society continues its focus on globalization. The safety and health profession is emerging in Brazil, and it would be good timing to explore available opportunities to develop programs previously mentioned regarding students that enroll in safety engineering programs.

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