Development of Industrial Hygiene Cadre in India

Round Table 220
The Globalization of the Profession of Industrial Hygiene
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Agenda

- Present Status - Demographics and EHS
- The Need
- Approaches Adopted
- Role of Associations, Institutions and Individuals
Population and Growth

**India's Population**

- 1980: 600 Millions
- 1985: 700 Millions
- 1990: 800 Millions
- 1995: 900 Millions
- 2000: 1000 Millions
- 2005: 1100 Millions
- 2010: 1200 Millions

Source: U.S. Census Bureau

**India's Gross Domestic Product (Exchange Rate Valuation)**

- 1980: 100 Billions of 1997 U.S. Dollars
- 1985: 200 Billions of 1997 U.S. Dollars
- 1990: 300 Billions of 1997 U.S. Dollars
- 2005: 600 Billions of 1997 U.S. Dollars
- 2010: 800 Billions of 1997 U.S. Dollars

Source: U.S. Energy Information Administration
Workplace Demographics

- Labor Force: About 496M (44M to 90M Child Labor)
- Middle class estimated 300 M
- Unemployment Rate: 9.2% current
- Industrial Growth 8%
- Inflation Rate: 3.4%
- Unions represents: 25% of industrial and service workers in the organized sector
### Labor Force and CI Hs

<table>
<thead>
<tr>
<th>Country</th>
<th>Labor Force (millions)</th>
<th>CI H</th>
</tr>
</thead>
<tbody>
<tr>
<td>USA</td>
<td>149.3</td>
<td>~5500</td>
</tr>
<tr>
<td>India</td>
<td>496.4</td>
<td>2</td>
</tr>
<tr>
<td>China</td>
<td>791.4</td>
<td>5</td>
</tr>
<tr>
<td>World</td>
<td>3001</td>
<td>~6000</td>
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</tbody>
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42% of the World’s Labor Force is in India and China
The Need

- One of world's largest manufacturing base with highly hazardous chemicals
- Exposure to serious health and safety hazards
- Hazardous conditions + scarcity of trained EHS professionals = serious threat of occupational illnesses and injuries

"JAI PUR: Over 200,000 miners in Rajasthan suffer from silicosis"
Times of India May 7, 2006
The Need

- Occupational diseases occurred in early 1900 in USA and Europe are still occurring.
- Large affected population: industries, hospitals, farms, offices.
- Pro-active companies not able to practice IH due to lack of trained professionals and infrastructure.
- Quality Assurance is a concern in IH being practiced.
- Industrial Hygiene - Great beginning and long way to go.
Master in Industrial Hygiene and Safety Program

- Two programs offered in Gujarat and Tamilnadu
- First started at Saradar Patel University in Gujarat in 1997
- In collaboration with the Department of Environmental and Industrial Hygiene at University of Cincinnati
- 76 Industrial Hygienists graduated
- All working
- Presented Technical Papers at AIHCEs
All students of the first batch at AI HCE, Toronto
MI HS Program

- Offered at Saradar Patel University, Gujarat, India
  Admission: Science or Engineering graduates
- 15 students selected out of 120+ applicants
- Four Semesters including six months of Internship
- Field visits, laboratory and project work
Genesis 1

- Committed time and physical presence of occupational health professional
- Identified institution in India with engineering and medicine disciplines
- Identified partner from US-University of Cincinnati, Department of Environmental Health and Industrial Hygiene
  - Signed MoU
  - UC provided limited faculty support and course curriculum
- Modified course curriculum to meet specific needs in India
- Identified local faculties
Genesis 2

- Worked with University administration and government for the program approval
- Involved institutions and associations
- Network and keep networking with great professionals around the world for support
  - Truck load of books donated to the program
  - Industrial Hygiene Equipment also donated

MIHS program recognized as essential qualification to work as Safety Officer by the Government of Gujarat, India
Role of Institutions and Individuals

- ABIH
  - Certification Exams in India
  - Keep 80% content same and replace OSHA with International Standards

- ACGI H-AIHA
  - Collaborative efforts with Associations and Institutions in India

- Individuals
  - Spend time at the two institutions during India visits
  - 100+ Corporate EHS professionals spending 5 days would make significant difference
Consider These..

- Priorities are different
  - Identifying cost effective exposure control technology is more important than research work on e.g., determining toxicity
  - PPE is a first line of protection
  - Prevention and control is more important than risk assessment
- Evaluate based on where they were and where they are?
- Focus on addressing the issue rather than talking about it
Lessons Learned

- Funding is essential but not indispensable
- Full-time involvement with or without remuneration in the country of interest
- Planning stage: 2 years, Execution 3+ years.
- Endless networking with professionals and association
- Not get discouraged. Focus on those genuinely willing to contribute
- And there are many willing to contribute, even in this room