Process Safety
Existing Programs

- ACC Responsible Care: http://www.responsiblecare.org
- SOCMA Chemstewards http://www.socma.com/ChemStewards/
- Global Reporting Network: www.globalreporting.org
- NSF 140
Possible Reporting Categories

- Environmental Management Systems
- Quality Management Systems
- Company and Facility Safety Record
- Safety Committees
- Training
- Union Agreements
- Track record of continuous improvement
Environmental Management Systems

• Definition: EMS: is a tool used by a company to identify and control the environmental impact of its activities, products or services, and to improve its environmental performance continually, and to implement a systematic approach to setting environmental objectives and targets, to achieving these and to demonstrating that they have been achieved.

EMS- Example of Rating System

Example from NSF 140

• “A manufacturer shall receive one point for documenting a formal environmental policy and EMS and publicly declaring its environmental targets, objectives, and metrics pursuant to ISO 14001. Public declaration shall be via the manufacturer’s web site or the manufacturer’s publicly available annual report.”

• ” A manufacturer shall receive two points for providing documentation that verifies current external, third party certification of its EMS meeting the requirements of ISO 14001 and/or for membership in USEPA’s National Environmental Performance Track.”
Quality Management Standard

• Definition: a set of policies, processes and procedures required for planning and execution (production / development / service) in the core business area of an organization

• International Organization for Standardization (ISO) 9001: 2000, Quality management systems –Requirements (www.iso.org)
QMS- Example of rating system

Example from NSF 140

• “A manufacturer shall receive one point for documenting that it has an effective and active Quality Management System (QMS)”

• “A manufacturer shall receive one additional point for providing documentation that verifies current external, third-party certification of its QMS meeting the requirements of ISO 9001. The manufacturer’s ISO 9001 certificate shall be provided as evidence of a third-party certification of its QMS.”
Company and Facility Safety Record

Global Reporting Network
• Rate of injury
• Occupational diseases
• Lost days and absenteeism
• Number of work related fatalities by region

Responsible Care
• Number of process safety incidents
• OSHA recordable and lost workday incidence rates - employees and contractors
• Fatalities for employees and contractors
• Number of DOT reportable distribution incidents
Responsible Care: Number of process safety incidences (PSI)

• ACC to adopt Center for Chemical Process Safety (CCPS) version of process safety reporting. Mandatory reporting to the ACC using the CCPS version will begin in 2010.

• Definition: For the purposes of the common industry-wide process safety lagging metrics, an incident is reported as a process safety incident if it meets all four of the following criteria:
  • 1) Chemical or chemical process involvement
  • 2) Above minimum reporting threshold
  • 3) Location; and
  • 4) Acute release
PSI: Possible Rating System

- Minimum: company utilizes process safety reporting
- Extra points for showing low incidence of PSTIR or PSISRs
  - **Process Safety Total Incident Rate (PSTIR):**
    \[
    \text{PSTIR} = \frac{\text{Total PS incidents \times 200,000}}{\text{Total employee \& contractor work hours}}
    \]
  - **Process Safety Incident Severity Rate (PSISR)** (i.e., severity-weighted Process Safety incident rate formula):
    \[
    \text{PSISR} = \frac{\text{Total severity score for all PS incidents \times 200,000}}{\text{Total employee, contractor \& subcontractor work hours}}
    \]

More details are available in the document titled: **Responsible Care® Member Company Performance Measures Guidance Document**
Available on the NSF Group site.
Responsible Care: OSHA recordable and lost workday incidence rates - employees and contractors

- **Recordable Injury Rate**: Defined by OSHA as the number of recordable incidents for each 100 full-time employees per year, based on 2,000 hours worked per employee per year. The calculation is as follows:
  - Recordable Incident Rate = \( \frac{\text{Annual # of Recordable Cases} \times 200,000 \text{ employee hours}}{\text{Annual number of employee hours worked}} \)

- **Days Away from Work Incident Rate**: Defined by OSHA as the number of lost workday incidents for each 100 full-time employees per year, based on 2,000 hours worked per employee per year. The calculation is as follows:
  - Days Away from Work Incident Rate = \( \frac{\text{Annual # of Days Away from Work Cases} \times 200,000 \text{ employee hrs}}{\text{Annual number of employee hours worked}} \)
Lost workday: Possible Rating System

• Minimum: company reports recordable incident rate and days away from work incident rate for employee and contractors

• Extra points for showing low incidence of recordable incident rate and days away from work incident rate.
Responsible Care: **Number of Fatalities for Employees and Contractors**

- Definition: *Fatalities*: Number of fatalities included on OSHA 300 log for employees and for contractors that occurred on the ACC member premises.

- Possible rating system: zero fatalities
Responsible Care: Distribution Incidents

• Definition: *Applicable Incidents*: Those that meet the criteria of DOT regulatory requirements and fall under the members’ ACC dues base. Form 5800 incidents are attributable to the ACC member if the member is listed as either the shipper or carrier on the DOT 5800 Form.

• *Distribution Incidents Index* =
  \[
  \text{Total Number of 5800 Incidents}/1000 \text{ hazmat shipments}
  \]

• *Distribution Severity Index* = \[
  \left[(\# \text{ Level 4 incidents} \times 1) + (\# \text{ Level 3 incidents} \times 3) + (\# \text{ Level 2 incidents} \times 9) + (\# \text{ Level 1 incidents} \times 27)\right]/[1000 \text{ hazmat shipments}]
  \]

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Distribution Incidents possible rating system

• ?
Global Reporting Network: Safety Committees

• % total workforces represented in formal joint management-worker health and safety committees that help monitor and advise on occupational health and safety programs

• Possible rating system:
  Points awarded based on 0, 0-25, 25-50, 50-75 or >75% of total workforce represented.
Global Reporting Network: Training

• Education, training, counseling, prevention and risk-control programs in place to assist workforce members, their families or community members regarding serious diseases.

• Possible rating system: 1 point for answering “Yes” for 2/4, 2 points for 4/4?
Global Reporting Network: Union Agreements

• Health and safety topics covered in formal agreements with trade unions
• Possible rating system: 1 point for having Health and safety topics covered in formal agreements with trade unions
Global Reporting Network: Track record of continuous improvement

• Benchmark the above endpoints against past years to show marked improvements.
• Possible rating system example, 1 point for a 10% improvement over 5yrs in any category.