

# Jamaica Broilers Ethanol Plant

## Outline of Safety Protocols to be Established.

### Program Summaries

1. Employee participation
2. Process safety information
3. Process hazard analysis
4. Operating procedures
5. Training
6. Contractors
7. Pre-start up safety review
8. Mechanical integrity
9. Hot work permit
10. Management of change
11. Incident investigation
12. Emergency planning and response
13. Compliance audits
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1. **Employee participation (1910.119 (c)):** Minimum requirements for an Employee Participation Program for PSM must include a written plan of action for implementing employee consultation on the development of process hazard analyses and other elements of process hazard management. The employer must also provide ready access to all the information required to be developed under the standard.
2. **Process safety information (1910.119 (d)):** Compile written process safety information on process chemicals, process technology, and process equipment

before conducting any process hazard analysis. Such information is essential for an effective process safety management program and for conducting process hazared analyses.

3. **Process hazard analysis (1910.119 (e)):** Requires the employer to develop a thorough, orderly, systematic approach for identifying, evaluating and controlling processes involving highly hazardous chemicals. Minimum requirements include:
  - setting a priority order and conducting analyses according to the required schedule;
  - using an appropriate methodology to determine and evaluate the process hazards;
  - addressing process hazards, previous incidents with catastrophic potential, engineering and administrative controls applicable to the hazards, consequences of failure of controls, facility siting, human factors, and a qualitative evaluation of possible safety and health effects of failure of controls on employees;
  - performing PHA by a team with expertise in engineering and process operations, the process.

#### **Methodologies**

- What-if?
  - Checklist?
  - What-if/Checklist?
  - Hazard and Operability Study (HAZOP)
  - Failure Mode and Effects Analysis (FMEA)
  - Fault Tree Analysis (FTA)
4. **Operating procedures (1910.119 (f)):** Should provide clear instruction for conducting activities involved in covered processes that are consistent with

**the process safety information. The operating procedures must address steps for each operating phase, operating limits, safety and health considerations, and safety systems and their functions.**

- 5. Training (1910.119 (g)): Such training should help employees understand the nature and causes of problems arising from process operations, and increase employee awareness with respect to the hazards particular to a process. An effective training program significantly reduces the number and severity of incidents arising from process operations, and can be instrumental in preventing small problems from leading to a catastrophic release. Minimum requirements for an effective training program include:**

- Initial training**
- Refresher training**
- Documentation**

- 6. Contractors (1910.110 (h)): Employers who use contractors to perform work in and around processes that involve highly hazardous chemicals are to establish a screening process so that they hire and use contractors who accomplish the desired job tasks without compromising the safety and health of employees at a facility. The contractor must assure that contract employees are trained on performing the job safely, of the hazards related to the job, and applicable provisions of the emergency action plan.**

- 7. Pre-startup safety review (1910.119 (i)): For new facilities and for modified facilities, when modifications necessitate a change to process safety information, certain important considerations are addressed before any highly hazardous chemicals are introduced into the process. Minimum requirements include that the pre-startup safety review confirm the following:**

- Construction and equipment are in accordance with design specifications;**

- **Safety, operating, maintenance, and emergency procedures are in place and adequate;**
- **For new facilities, a PHA has been performed and recommendations resolved or implemented;**
- **Modified facilities meet requirements;**
- **Management of change; and training of each employee involved in the process has been completed.**

**8. Mechanical integrity (1910.119 (j)): Involves measures to be taken to assure that equipment used to process, store, or handle highly hazardous chemicals is designed, constructed, installed, and maintained to minimize the risk of release of such chemicals. It is required that a mechanical integrity program be in place to assure the continued integrity of process equipment. The elements of the program are to include:**

- **the identification and categorization of equipment and instrumentation**
- **development of written maintenance procedures**
- **training for process maintenance activities**
- **inspection and testing**
- **correction of deficiencies in equipment that are outside acceptable limits defined by the process safety information**
- **development of a quality assurance program**

**9. Hot work permit (1910.119 (k)): Requires employers to control, in a consistent manner, nonroutine work conducted in process areas. Concerns are associated with hot work operations associated with welding and cutting in process areas.**

**10. Management of change (1910.119 (l)): Requires management of all modifications to equipment, procedures, raw materials and processing conditions other than replacement in kind by identifying and reviewing them prior to implementation of the change. Minimum requirements for management of change include:**

- **establishing written procedures to manage change**
- **addressing the technical basis, impact on safety and health, modification to operating procedures, necessary time period, and authorizations required**
- **informing and training affected employees**
- **updating process safety information and operating procedures or practices**

**11. Incident investigations (1910.119 (m)): Employers are required to investigate each incident which resulted in, or could reasonably have resulted in, a catastrophic release of highly hazardous chemicals in the workplace. An investigation shall be initiated no later than 48 hours following the incident. An investigation team shall be established and a report prepared which includes:**

- **Date of incident**
- **Date investigation began**
- **Description of incident**
- **Factors that contributed to the incident**
- **Recommendations from the investigation**

**The employer is required to establish a system to promptly address the incident report findings and recommendations, documenting all resolutions and corrective actions. Incident reports shall be reviewed with all affected personnel whose job tasks are relevant to the investigation and retained for five years.**

**12. Emergency planning and response (1910.119 (n)):** The employer is required to address what actions employees are to take when there is an unwanted release of highly hazardous chemicals. The employer must establish and implement an emergency action plan in accordance with the provisions of 29 CFR 1910.38(a) and include procedures for handling small releases. Certain provisions of the hazardous waste and emergency response standard, 29 CFR 1910.120(a), (p), and (q) may also apply.

**13. Compliance audits (1910.119 (o)):** Employers are required to self-evaluate the effectiveness of their PSM program by identifying deficiencies and assuring corrective actions. Minimum requirements include:

- audits at least every three years
- maintenance of audit reports for at least the last two audits
- audits conducted by at least one person knowledgeable in the process
- documentation of an appropriate response to each finding
- documentation that the deficiencies found have been corrected

**Trade secrets (1910.119 (p)):** Employers are to provide all the information necessary to comply with the standard to personnel developing paragraphs (d), (e), (f), (n) and (o) without regard to possible trade secrets. In addition, employees and their designated representatives shall have access to trade secret information contained within documents required to be developed by the standard.