

Interrelationship of Elements.

The following example demonstrates the interrelationship among the elements:

During a routine inspection of equipment (**Mechanical Integrity**), the maintenance worker discovers a valve that no longer meets the applicable code and must be changed. Because the type of valve is no longer made, a different type of valve must be selected and installed (**Management of Change**). The type of valve selected may mandate different steps for the operators (**Operating Procedures**) who will require training and verification in the new procedures (**Training**). The rationale for selecting the type of valve must be made available for review by employees and their representatives (**Employee Participation**). When the new valve is installed by the supplier (**Contractors**) it will involve shutting down part of the process (**Pre-startup Safety Review**). The employer must review the response plan (**Emergency Planning**) to ensure that procedures are adequate for the installation hazards.

Although **Management of Change** provisions cover interim changes, after the new valve is in place the **Process Safety Information** will have to be updated before the **Process Hazard Analysis** is updated or revalidated, to account for potential hazards associated with the new equipment. Also, inspection and maintenance procedures and training will need to be updated (**Mechanical Integrity**).

In summary, 11 PSM elements can be affected by changing one valve. CSHOs would check a representative number of these elements to confirm that the required follow-up activities have been implemented for the new valve.” Given the catastrophic nature of the hazards associated with PSM, the interrelationship of the PSM elements work together to help ensure that if the employer is deficient in one PSM element, the other elements, if complied with, prevent or mitigate a catastrophic incident. Consequently, the PSM standard uses a one hazard-several abatement approach to ensure that PSM-related hazards are adequately controlled.