



## Process Hazards Analysis (PHA)

Process Hazards Analysis (PHA) is a formal process that provides for the systematic identification, review and mitigation of hazards associated with processes. PHA results in the control or elimination of hazards by process design or by physical, operational or administrative controls. In the context of insurance, PHA is a proactive risk assessment and loss control tool.

ANI uses PHAs performed by insureds to evaluate insurance risk at non-power reactor facilities. PHA programs may be self-initiated or required by regulation OSHA 1910. ANI may recommend PHA programs if none exist or may recommend additional PHA work to identify and mitigate process hazards related to insurance risk.

The proper application of PHA has mutual benefits to ANI and its insureds, including the definition of risk, property and liability risk reduction, and operational efficiency. Specifically, we have observed improvements in operational performance, knowledge of processes, documentation of processes (design basis) and regulatory performance. Properly performed PHAs have resulted in reduced radiation exposure and hazardous material inventories.

As with ANI, industry is continuously learning about PHA, its application and benefits. We have observed that the benefits derived from a PHA program are directly related to its scope. ANI has identified several program features that will maximize benefits to both insured and insurer. The PHA program should:

1. Be endorsed by management
2. Be formally defined in procedure
3. Be subject to quality assurance review
  - Include documentation of the following elements:
    - PHA program scope and objectives
    - Structure, staffing and administrative control of the PHA program
    - Selection, prioritization and frequency of processes to be analyzed
    - Application of PHA to change control system
    - Management and conduct of PHA meetings including: preparation requirements; leader and team selection; meeting process; meeting documentation; recommendation documentation, tracking and resolution; and recommendation management review process
4. Apply appropriate methodologies for PHA including:
  - What-if analysis
  - Checklist analysis
  - Hazards and operability analysis (HAZOP)
  - Failure mode and effects analysis (FMEA)
  - Fault tree analysis

ANI will continue to work with insureds to strategically apply PHA as a proactive insurance risk assessment and loss control tool. The mutual benefits received from a quality PHA program will justify its implementation.