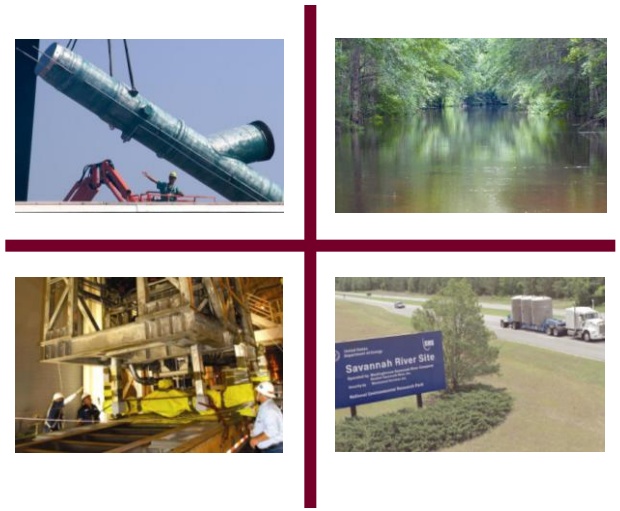
SRS
savannah river site
®

RAD VERSUS NONRAD CONTROLS



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Issue - Rad versus nonrad activities are often controlled differently

- Rad activities controlled ALARA
  - Often treated as having no threshold
  - Skin contact typically unacceptable
  - Inhalation often infers job was out of control
- Nonrad activities generally controlled ALAP
  - Threshold based
  - Skin contact minimized but often acceptable
  - Inhalation minimized but accepted for many chemicals

Impact of This Reality

- Rad controls take precedence in mixed environments
- Benefit
  - Rad controls often address nonrad chemicals
- Disadvantage
  - Conflicts that do arise in day-to-day operations may create confusion and less than ideal controls

Examples of Hazards

- Radiological Hazards
  - **Radiation (alpha, beta, gamma, neutron)**
  - **Contamination on surfaces and in the air**
  - **Tritium**
- Industrial Hygiene Hazards
  - **Chemicals - aerosols, gases & vapors, fibers**
  - **Heat stress (big deal in South Carolina)**
  - **Noise**
- Industrial Safety Hazards
  - **Slips & falls**
  - **Falling objects**
  - **Confined spaces**

Examples of Where Conflicts Arise

- **Respirators for potential – particularly for transuranics**
  - **Limits visibility**
  - **Introduces tripping hazards**
- **PPE used to prevent skin contamination**
  - **Increases heat stress**
  - **Introduces air loss hazard**
  - **Impact use of hearing protection**
- **Exposure increased by competing controls**
  - **Work may be slowed by respiratory protection use**
  - **Heat stress controls (air movement) may increase hazard**

Desired Work Planning Steps

- Identify scope (determine hazards)
- Plan controls to mitigate hazards
- Consider new hazards from controls
- Verify best overall plan is implemented
  (Integrated Safety Management)

Current Approach

- Only occasionally do controls for IH and Rad hazards conflict – resolution in RWP
- Segregation of organizations and planning process inhibit integration
- Late planning inhibits the use of engineered control
- Even if well planned - worker maybe confused
- Worker sometimes forced to integrate controls during work
- Segregation promotes assumptions

New Approach Being Piloted

- All controls recorded in work instructions
  - Promotes selection of best approach from competing controls
  - Clarifies requirements for worker
  - Avoids delays during work
  - Minimizes assumptions about when to apply controls
  - Forces recognition and resolution of conflicts
  - Avoids the hazards associated with work delays

Changes Needed to Support New Approach

- More effort needed to create the plan
  - Better walkdowns prior to planning
  - More dialog between safety professionals
- Well written document
  - Steps in logical order
  - No other document required
  - PPE clearly identified
  - No superfluous information
  - Use of picture to identify location and radiological conditions

Early Pilot Results

- **Workers love it**
- **IH and Rad Protection are adjusting**
- **Planners are afraid**
- **Facilities are resisting**