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RDX NITRATION MODERNIZATION PROGRAM
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Outline

- Background
- Objectives
- Approach
- Project Phases
- Summary
• Holston Army Ammunition Plant (HSAAP) is the sole producer of RDX in North America
• RDX is manufactured on one production line which is operated at near its design capacity
• Future requirements for RDX will likely exceed current capability
• The Project Manager for Joint Services initiated this effort to modernize a production line at HSAAP
  – To meet anticipated production requirement
  – To eliminate dependency on single RDX production line
Objective

• Raise RDX production capacity by 2M pounds a month
Approach

- Select the Bachmann continuous nitration process
- Renovate a RDX nitration facility to enable the facility
  - To become operational
  - To meet current environmental standards
- Obtain emission permits
- Revise safety site plan
- Replace instrumentation
- Update control loops
- Install chemical feed pipelines
- Upgrade utilities
- Prove-Out
Continuous RDX Manufacture Flow Sheet

- Acetic Acid
- Nitric Acid
- Ammonium Nitrate
- Acetic Anhydride
- Hexamine
- Acetic Acid

Nitration → Age → Simmer Heating → Simmer Cooling → Crude RDX

- Emergency Drop and Heel
- Clean Out
- Filtered Water
• **Phase I: Design and Engineering**
  - Process
  - Mechanical
  - Electrical
  - Control
Project Phases

• Phase II: Environmental and Building Modifications
  – Safety site plan
  – Environmental assessment
  – Infrastructure repairs
  – Construction/Installation
Project Phases

- Phase III: System Commissioning
  - Equipment check-out
  - Water trials
  - Documentation
Summary

• Project was completed
  – On schedule
  – Within budget
• System was successfully proven out
• New capacity will meet anticipated requirements