Advanced Manufacturing & Supply Chain Summit
Key Supplier Challenges & Opportunities

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A Safe, Lean, and Efficient Advanced Manufacturing Approach
Reigniting Manufacturing in America

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Holtec International: Corporate Profile

- Established in 1986
- Operations in 5 Countries
- Order Book for Future Deliveries: 5.0 Billion USD +
- Impeccable on-time delivery record
- No history of long-term debt
- Self financed company growth
- Highest industrial credit rating [D&B-1R2]
- Business Mix:
  - 85% Nuclear power & nuclear waste
  - 10% Fossil power-combined cycle
  - 5% Renewables - solar, wind, etc.

Holtec Government Services
Headquarters

Holtec is a Vertically Integrated, Innovative Technology Leader with Unique Approaches to Design & Manufacturing
Holtec is a Global Leader in Spent Nuclear Fuel Storage, Heat Transfer Equipment, & Custom Manufacturing
Holtec Manufacturing Capabilities
Three Major U.S. Manufacturing Plants

- Holtec Manufacturing Division (HMD)
  - Turtle Creek, PA
- Orrvilon, Inc. (ORR)
  - Orrville, Ohio
- Advanced Manufacturing Division (AMD)
  - Camden, NJ
Quality Program

Holtec's Quality Assurance Program has been approved to meet the following applicable industry quality assurance standards:

- Established in 1986
- 10CFR50 Appendix B
- 10CFR71 Subpart H (Approval Number 0784)
- 10CFR72 Subpart G
- NQA-1
- ISO 9001:2008
- ASME III N-Stamp (N1, N2, N3, NB)
- ASME III NPT-Stamp (design and fabrication)
- ASME III R-Stamp (in-shop repair)
- ASME U-Stamp

- Triennially audit results provided by the U.S. NRC, NUPIC, and other organizations
- Holtec design centers and fabrication facilities operate under the same QA Program
- Holtec holds all ASME code stamps actively used in the industry (nuclear and non-nuclear)
Orrvilon Manufacturing Overview

- Orrvilon is a 325,000 ft² fabrication and testing facility

- 7200 Ton Extrusion Press
- Billet heating oven
- Friction Stir Welding equipment
- Microarc oxidation coating technology line
- Material properties testing laboratory and staff
- Water Jet precision cutting machines
Water Jet Cutting

- Both the Pittsburgh and Orville locations have two WardJet water jet cutting machines for quick and accurate cutting.
- The largest of the working tables (16’ by 30’) (4.8m x 9.1m) allows for multiple pieces to be cut at a single loading.
Friction Stir Weld (FSW) Joining Technology

- Welding of Exotic Metals performed using friction stir welding (FSW)
  - Creates strong, defect-free uniform welds
  - Equipped to perform FSW in horizontal and vertical orientation
Holtec Manufacturing Division

- Prior Westinghouse manufacturing facility
- Formally US Tool & Die, acquired by Holtec in 2004
- 540,000 ft$^2$ (50,170 m$^2$) of manufacturing space
- 190,000 ft$^2$ (17,650 m$^2$) warehouse space
- Laser Peening Booth
AMD Manufacturing Objectives

- Co-Locate Manufacturing and Engineering
- Design a State-of-the-art Factory
- Implement Automation, Robotics and Technology
- Design for Safety
- Lean Manufacturing- Eliminate Wastes, Improve Quality
- Revitalize Economically Depressed Camden
- Ground Breaking to Fully Operational < 2yrs
Camden Manufacturing Overview

- 370,000 ft² fabrication facilities
- 12 Cranes: (9) 50-Ton, (3) 200-Ton
- Unique Large Machining Capability
- Sized to Manufacture SMR Components
  - Manufacturing capability: 400T Crane w/ 65 ft under the hook
  - 100 ft wide bay
  - Ability to ship via Delaware River
Formerly New York Naval Shipyard, 1920
30,000 Employees 542 Ships
Famous Ships Built in Camden

USS Saratoga

USS Kitty Hawk

USS Savannah

USS Lexington

USS South Dakota
Efficient & Capable Purpose Built

Krishna P. Singh Technology Campus, Camden, NJ
Advanced Manufacturing Facility (AMD)
Davi - Large Plate Roll

- Largest Roll in North America
- Working Range
  - Cold Roll 7.5” Steel
  - Hot Roll 10” Steel
  - 13’ rolling surface
  - 54” top roll diameter
PAMA Speed Ram - Unique Machining Capabilities

- 6 Axis Milling & Drilling
- 2 Milling Machine Towers
- Working Range:
  - 52’ L x 20’ H
  - 100T Capacity
  - 30” Gun Drilling
PAMA VertiRam - Gantry Mill

- Gantry Milling System
- 5 Axis Milling w/ Lathe Capability
- Universal Milling Head
- Working Range:
  - Clearance btw columns: 11’
  - Clearance under spindle: 13’
  - Gantry Travel: 39’
Carnaghi – Vertical Turning Center

- Vertical Turning & Milling Center
- Working Range:
  - Max Dia: 15’
  - Max Height: 17’
  - Capacity 100T
- Universal Milling Head
  - Double magazine
  - 9 Accessories
  - 30 tools
Tanaka Laser Cutter

- Cuts plate up to 1” thick
- Can bevel cut plate
- Autonomous 16 tray material handling system
Blast and Paint Booth

- Blast booth 20’ x 103’ long
- Paint Booth 20’ x 110’ long
Holtec Manufacturing

Manufacturing Driving Philosophies:
- Safety is #1
- Quality
- Schedule
- Expand Capabilities and Capacity
Thank You!

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