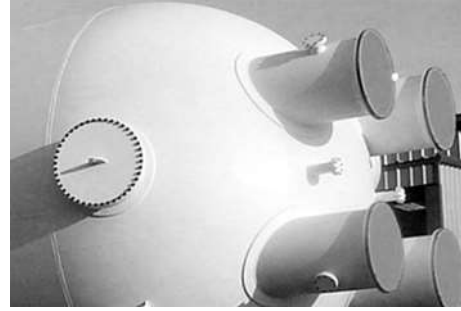


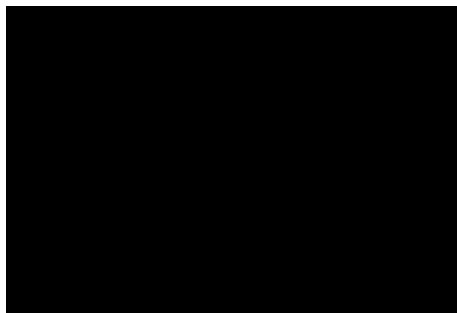


Nuclear Division



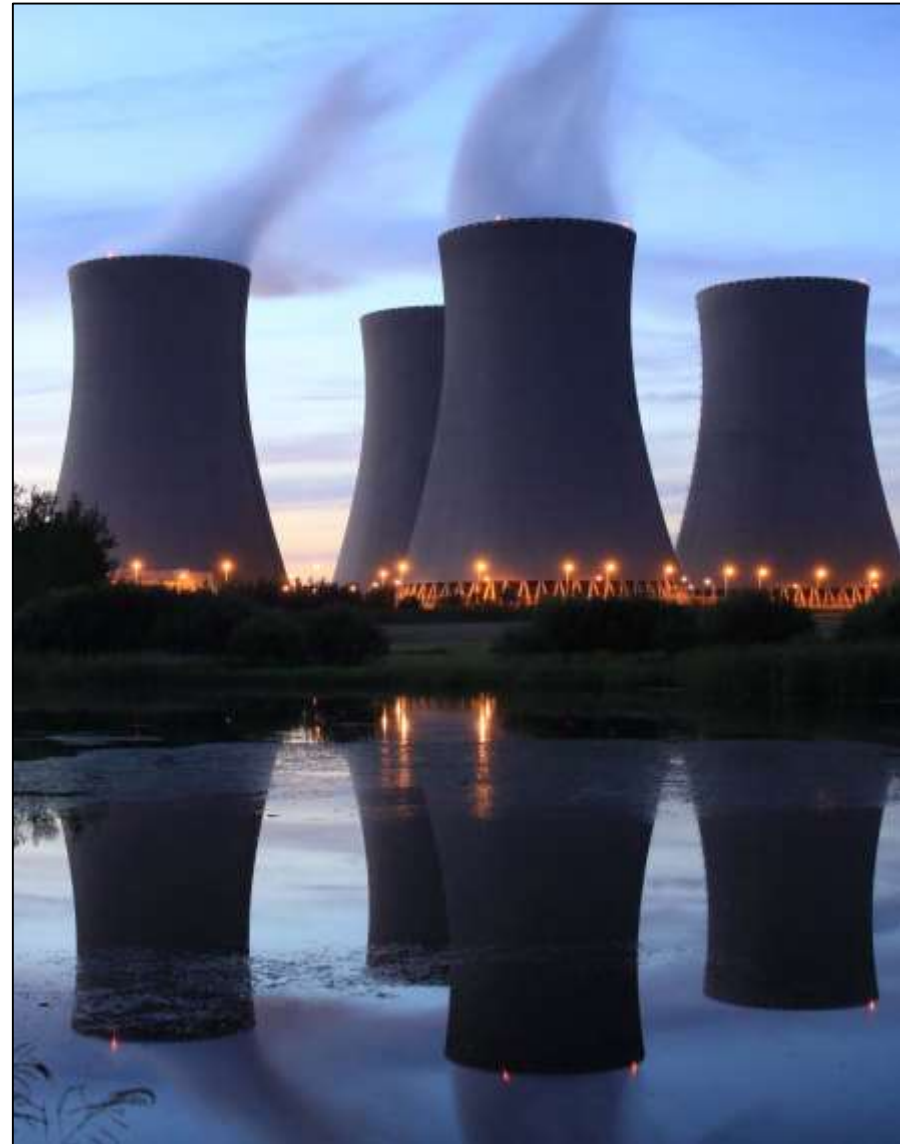
# NIC/ETEC Nuclear Supplier Workshop

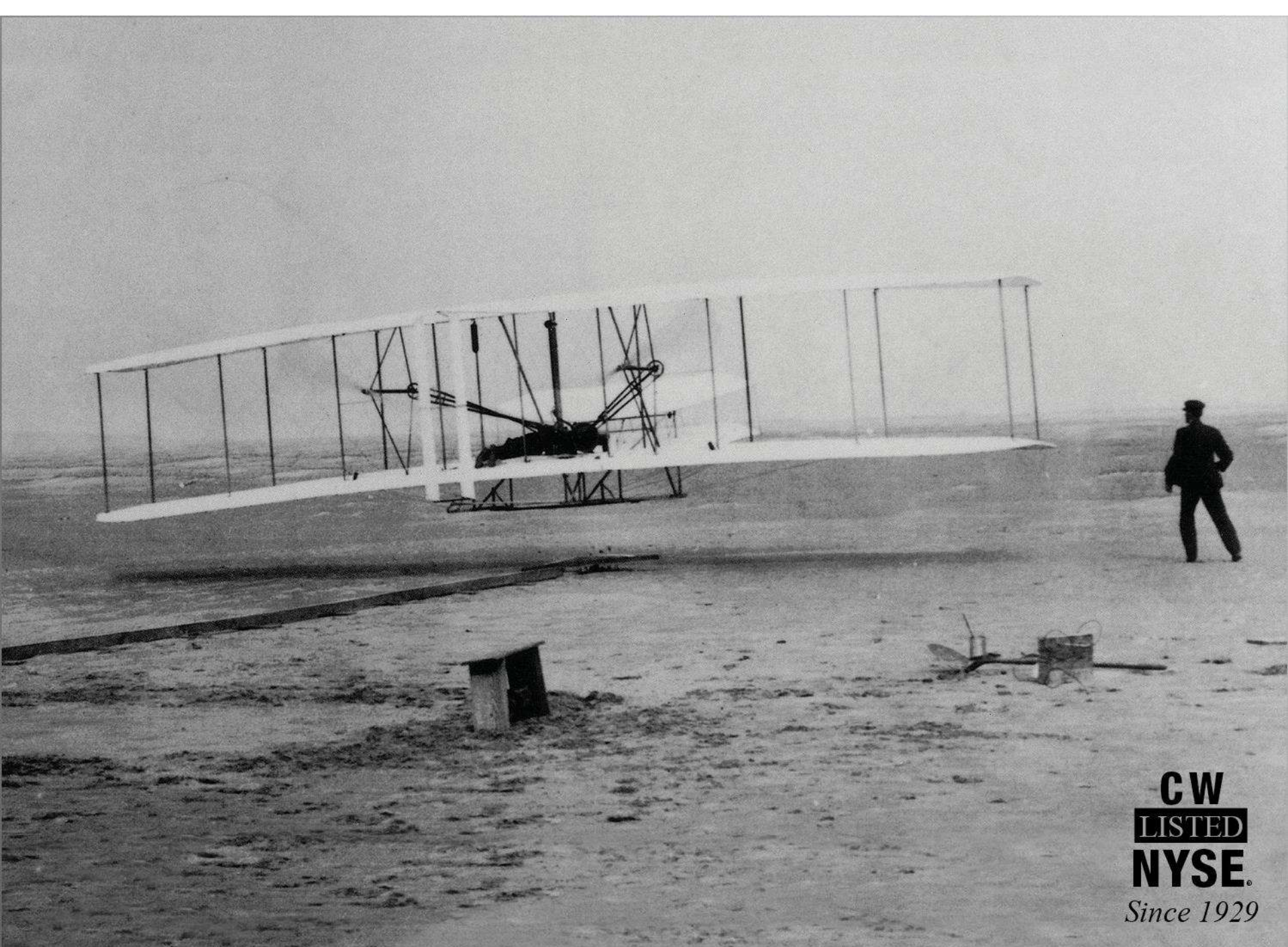
Allen Davidson  
Director, Sales and Marketing  
Curtiss-Wright Nuclear



# Presentation Overview

- **Introduction to Curtiss-Wright Nuclear**
  - Anatomy of a nuclear supplier
- **Aligning with opportunities within the nuclear market**
  - Matching products/services to needs
- **Pathways to becoming a nuclear supplier**





**CW**  
**LISTED**  
**NYSE.**

*Since 1929*

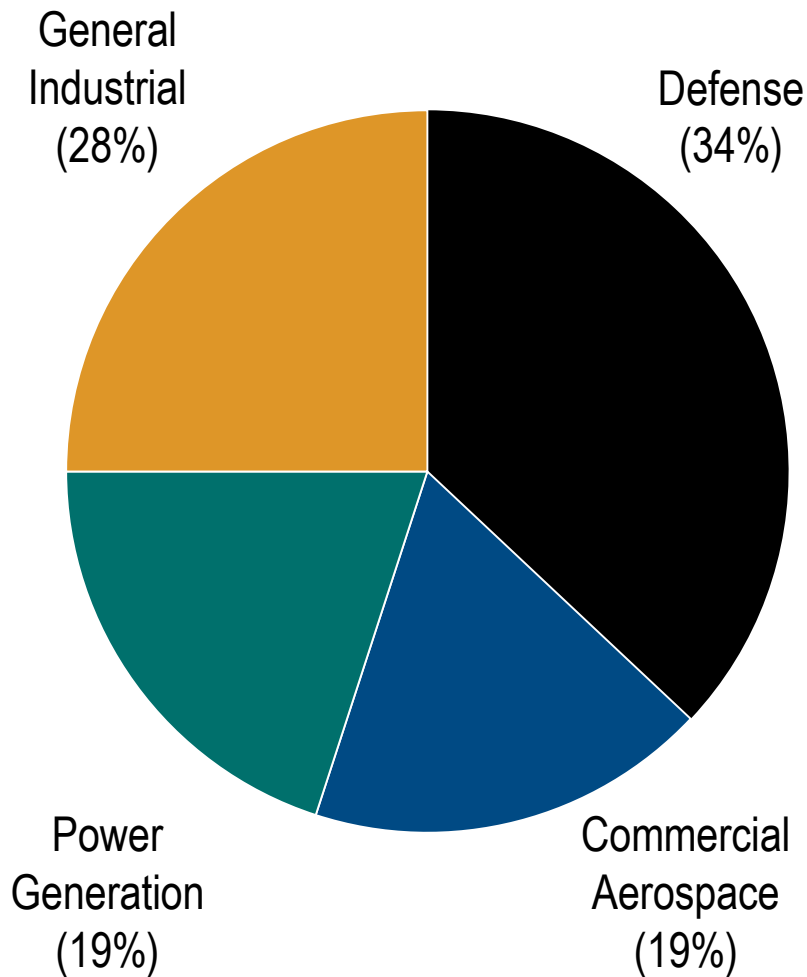
# Curtiss-Wright Corporation

*Global, diversified industrial company providing highly engineered products and services to Aerospace, Defense, Energy and Industrial Markets*

- ~\$2.2 billion in 2016 sales
- Leadership positions in growing markets
- Enhancing safety, reliability and performance
- 8,400 employees worldwide



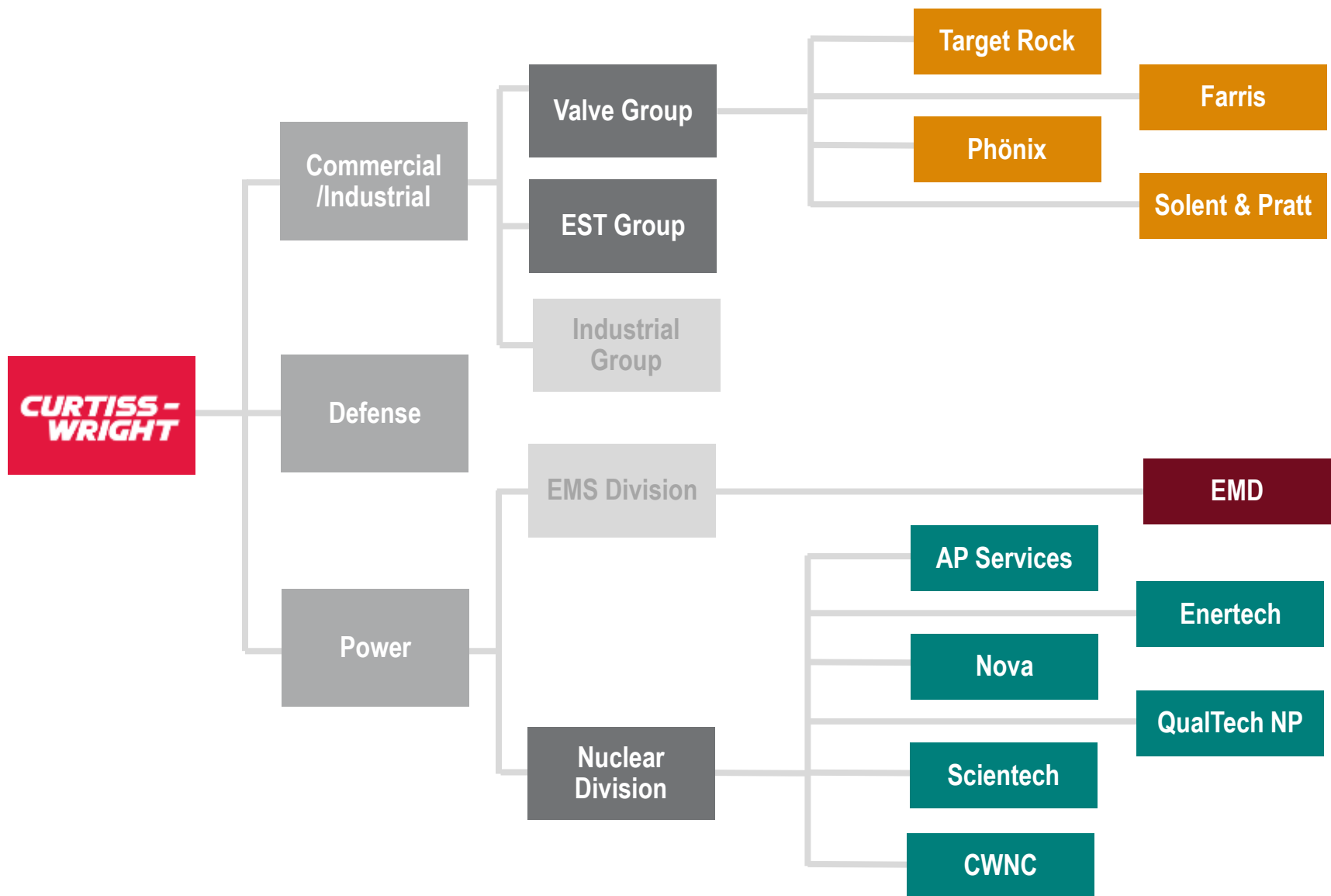
# Leadership Position in Growing Markets



- **Industrial:** On- and off-road commercial vehicles; Industrial valves
- **Commercial Aerospace:** Leverage ramp up in OEM aircraft production rates
- **Power Generation:** Current and future generation nuclear operating reactors
- **Defense:**
  - **Naval:** Nuclear submarine and aircraft carrier programs
  - **Aerospace:** Embedded computing business supporting C4ISR and EW
  - **Ground:** International Armored Vehicles

Note: Percentages in chart relate to 2016E sales as of February 24, 2016

# The Curtiss-Wright Nuclear Organization



# Curtiss-Wright Nuclear: Valued Nuclear Portfolio

AP Services

CWNC

EMD

Enertech

EST Group

Farris

Nova

Phónix

QualTech NP

Sciencetech

Solent & Pratt

Target Rock

OEM Partnerships



Outage and Fuel Management



Non-Destructive Testing



Safety and Risk



Containment Integrity



Fasteners and Bolting Solutions



Plant Performance



Instruments and Control



Fluid Sealing Solutions



CGD and EQ



Electrical Interconnection Products



Information Technologies



# Quality Standards: Key to Nuclear Supplier Anatomy

## Nuclear Division - QA System Compliance

### Codes and Standards:

*ASME Section III , Class 1, 2, 3 (NCA3800 & NCA4000)*

*ASME Section XI – Repair/Replacement*

*ASME NQA-1*

*ANS 56.2 Appendix J*

*ANSI N45.2*

*10CFR50 Appendix B*

*10CFR Part 21*

*10 CFR Part 71, Part 72*

*10 CFR 830.120*

*IEEE 323, 344, 382*

*Nat'l Board – NBIC-23, NR Stamp*

*EPRI NP5652, TR102260, NP7218, TR 0171218 R1*

### Additional Standards / Certifications:

*CAN 3 Z299.0, CRN/T.S.S.A. (Canada)*

*HAF 604 (China)*

*CNCAN and I.S.C.I.R. (Romania)*



**N, NPT, NA, NS, NV**

*NUPIC member audited*

*NIAC Member audited*



# Nuclear Supplier Anatomy

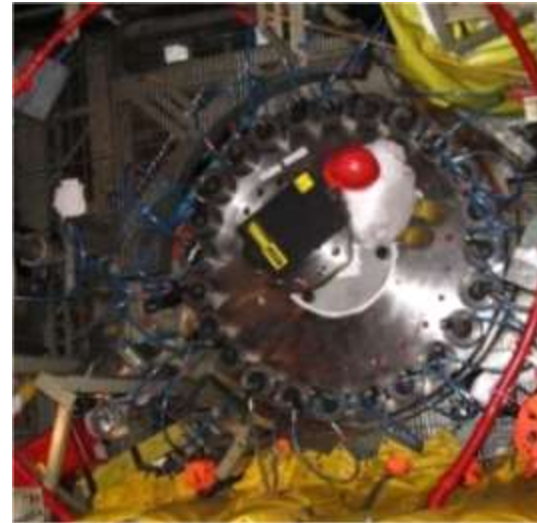
## KEY SUPPLIER FEATURES

- **Desired products/services**
  - Niche technology
- **Acceptable Quality Assurance Program**
- **Ability to digest detailed specifications**
- **Great attention to detail**
- **Pro-active communications program**
- **On-time delivery**
- **Providing all spec deliverables**



# Aligning Products and Services to Nuclear Needs

- **Standard Market Assessments**
- **Identification of true discriminators**
- **Niche product/services**
- **Nuclear market will embrace needed technology**
- **Values OEM commitment and performance**



# Nuclear Safety Related Hardware

## Qualification of Design

### Environmental Qualification

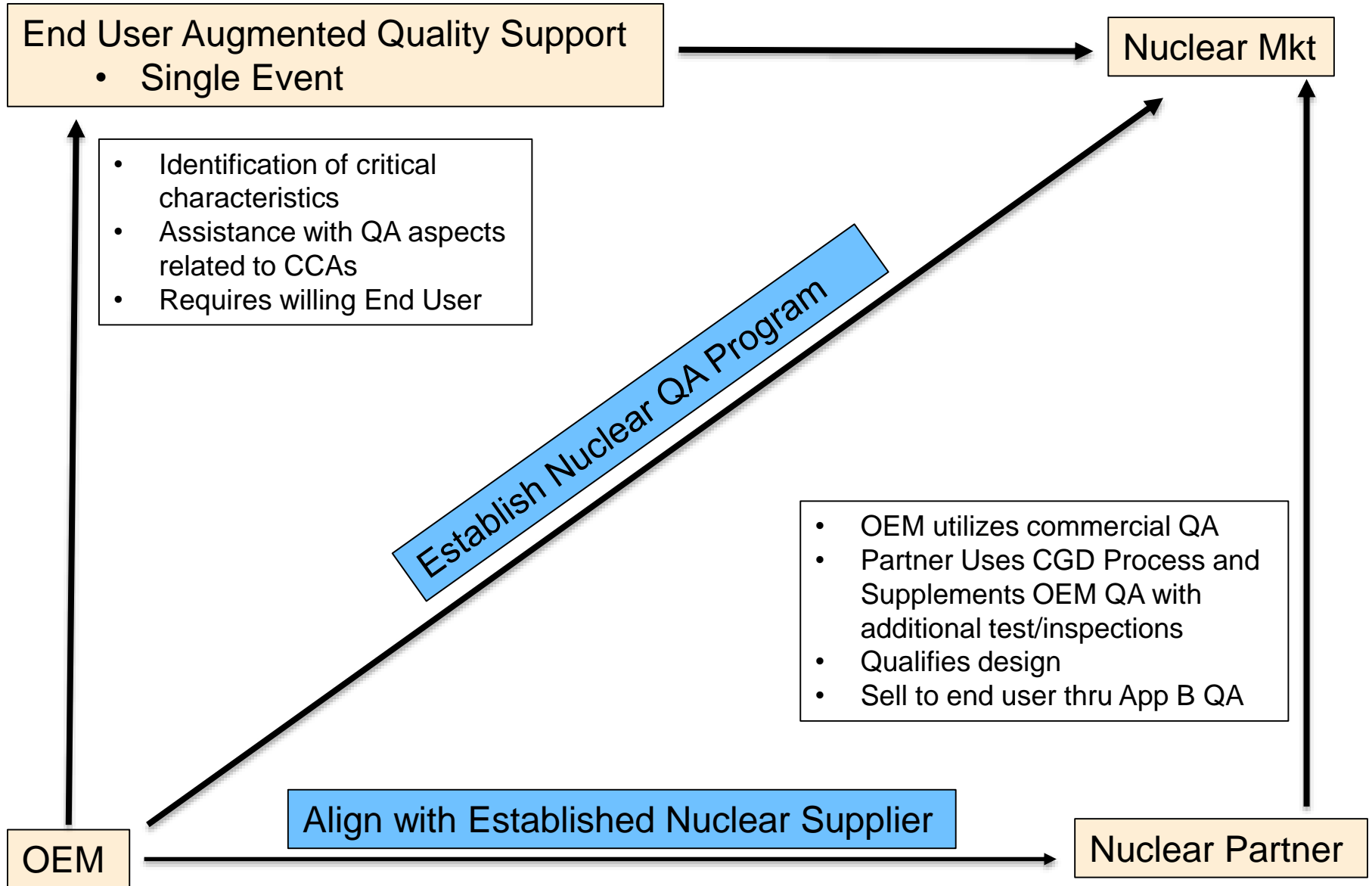
- Harsh Environment
- Mild Environment
- Seismic
- Qualifications Procedures
- Final Reports

### Environmental Conditions

- Thermal Aging
- Temperature/Humidity
- Steam Testing
  - LOCA
  - HELB
  - MSLB
- Post LOCA Submergence
- Radiation Testing
- Mechanical/Electrical Cycling
- EMI/RFI Testing



# Becoming a Nuclear Supplier



# Summary

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- **Nuclear market can be “value” based**
- **Nuclear end users value historical performance**
- **Requires OTD with complete compliance to specifications**
- **Rewards performance**

A photograph of a nuclear power plant with two large cooling towers and several smaller buildings, situated near a body of water. The sky is blue with scattered clouds. A dark diagonal overlay covers the bottom left portion of the image, where the contact information is located.

# Contacts

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