Introduction... Naval Reactors

- Main mission – Navy
  - 104 naval reactors
  - 82 warships
  - >55 years of experience
  - “Cradle to grave” responsibilities

- Civilian projects
  - Shippingport – Commercial Electric Power
The Incentive... Unique Capabilities

- Navy
  - True (fully) submersible submarines
    - Unrivaled stealth, endurance, mobility
    - Undetected inside potential adversaries defenses
  - Aircraft Carriers
    - 90,000 tons of American diplomacy
    - The “Big Stick” whenever and wherever needed

- Deep space exploration
  - Greater mission length
  - More efficient propulsion
  - More science payload
  - Rapid communication
The Challenge... Safety Mainstreaming

- Safety mentality must be pervasive
  - ...not the main purview of an oversight group

- Core values
  - People
  - Formality and Discipline
  - Technical Excellence & Competence
  - Responsibility
People

- Pick technically capable people
- Train them extensively and properly
- Put them to the test early
- Expose them to all aspects of the business
- Retain the ones who “walk the (safety) walk”
- Provide continued professional development
- Pass on essential historical corporate knowledge
Formality & Discipline

- Enforce requirements
- Adhere to formal recommendations & actions
- Maintain professional distance
- Be your own worst critic
  ...and do something about it
- Keep raising the bar of acceptable norms
Technical Excellence & Competence

- No substitute for relevant technical knowledge
  - …acceptable management and leadership demand it

- Need ability to ask hard questions
  - …and truly understand the answers

- Need to pay close attention to bad news
  - … fix small problems before they become large
Responsibility

- Must be able to point to the person responsible
  - ...or there is no one responsible

- Everyone must feel responsible for the whole
  - ...not just their piece

- Safety first
  - ...cost, organization, career, etc., second
Conclusion

- Main message...
  - Truly safety conscious organizations are committed to values and resulting actions that mainstream safety into day-to-day operations at the level of each individual worker

- This lesson is applicable to technical leadership and management of other complex and unforgiving technologies