



**Human Factors in Nuclear Energy**

- Industry Contributions in the Area of HF including INPO tools among licensees
- Attention paid to Human Performance metrics industry wide
- NRC Research

**• What is Human Factors (HF)?**

- Traditionally: Study of designing equipment and devices that fit the human body and its cognitive abilities
- Implementation: Extends HF principles to systems which employ the synthesis of humans, structures, components and considers human impacts

**• HF in Nuclear Energy Internationally**

**• HF at the NRC**

- |                                      |  |
|--------------------------------------|--|
| • Training                           | • Problem Identification and Resolution  |
| • Procedures and Reference Documents | • Communication                          |
| • Fitness for Duty                   | • Human-System Interface and Environment |
| • Oversight                          | • Work Planning and Practices            |

**Human Factors – Definition and Implementation**

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- Common importance of the **Human** in various organizations
- Offer different perspectives of the consideration given to HF and safety
- Present other developments in HF within other federally regulated industries to ensure safety is optimized

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**Human Factors – Why Outside of Nuclear Industry?**

- **Food and Drug Administration (FDA)**
  - Devices with radiological and safety implications
  - Coordinated regulatory activities with NRC
  - Similarities considering effect on individuals who handle special materials as well as public health and safety
- **Naval Research Lab**
  - Consideration of the relationship between systems and humans
- **Aviation**
  - Federal Regulators
  - Operators
  - Maintenance
  - Contributions of HF in the subject matter in tests performed for FAA as well as vendors

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**Human Factors – Why Outside of Nuclear Industry?**

- Human Factors at the Federal Aviation Administration
- Human Factors at FDA's Center for Devices and Radiological Health
- Hybrid Human Autonomous Systems
- Contribution of Human Factors to the Field of Aviation

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**Human Factors – Presentation Topics**