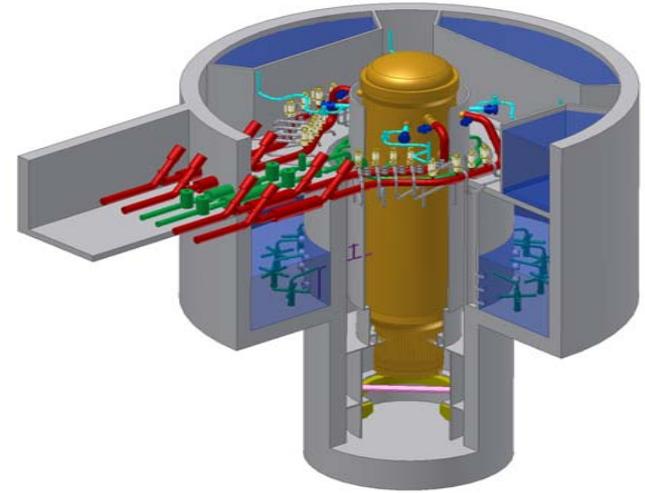
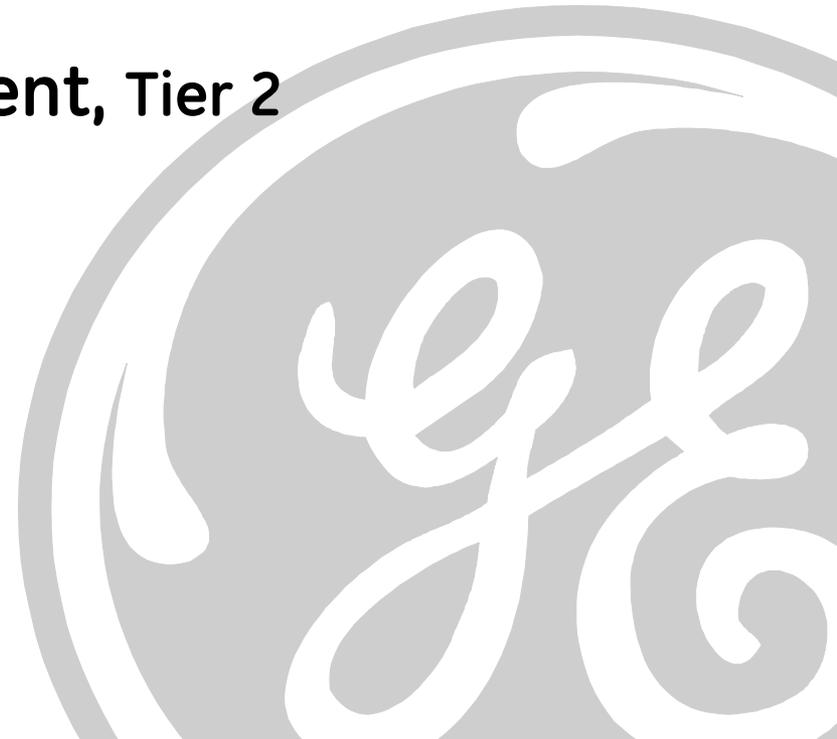


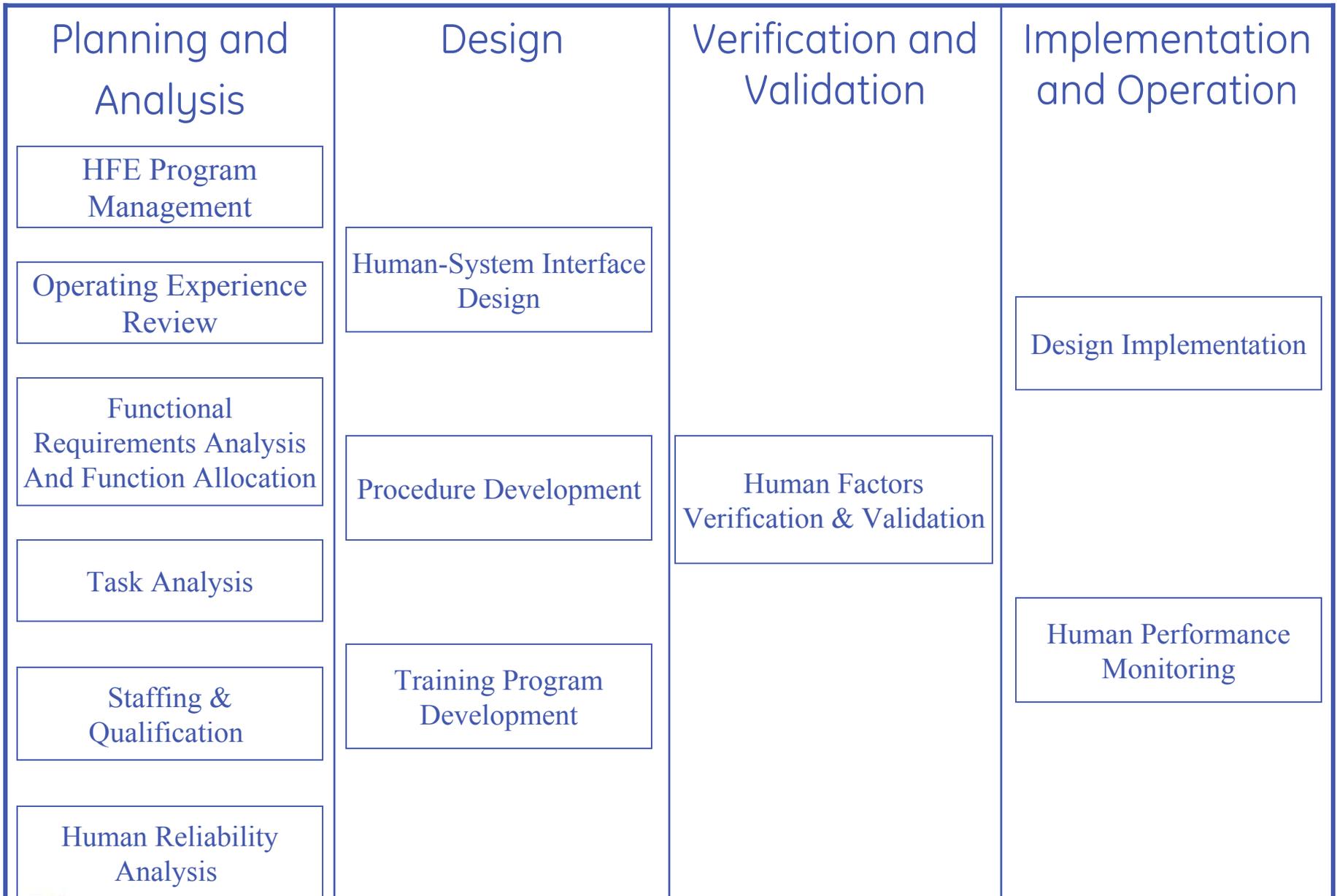
Presentation to  
Nuclear Regulatory Commission



**Summary**  
**ESBWR Design Control Document, Tier 2**  
**Chapter 18**  
**Human Factors Engineering**







## Planning and Analysis

HFE Program Management

Operating Experience Review

Functional Requirements Analysis And Function Allocation

Task Analysis

Staffing & Qualification

Human Reliability Analysis\*

## Design

Human-System Interface Design

Procedure Development

Training Program Development

## Verification and Validation

Human Factors Verification & Validation

## Implementation and Operation

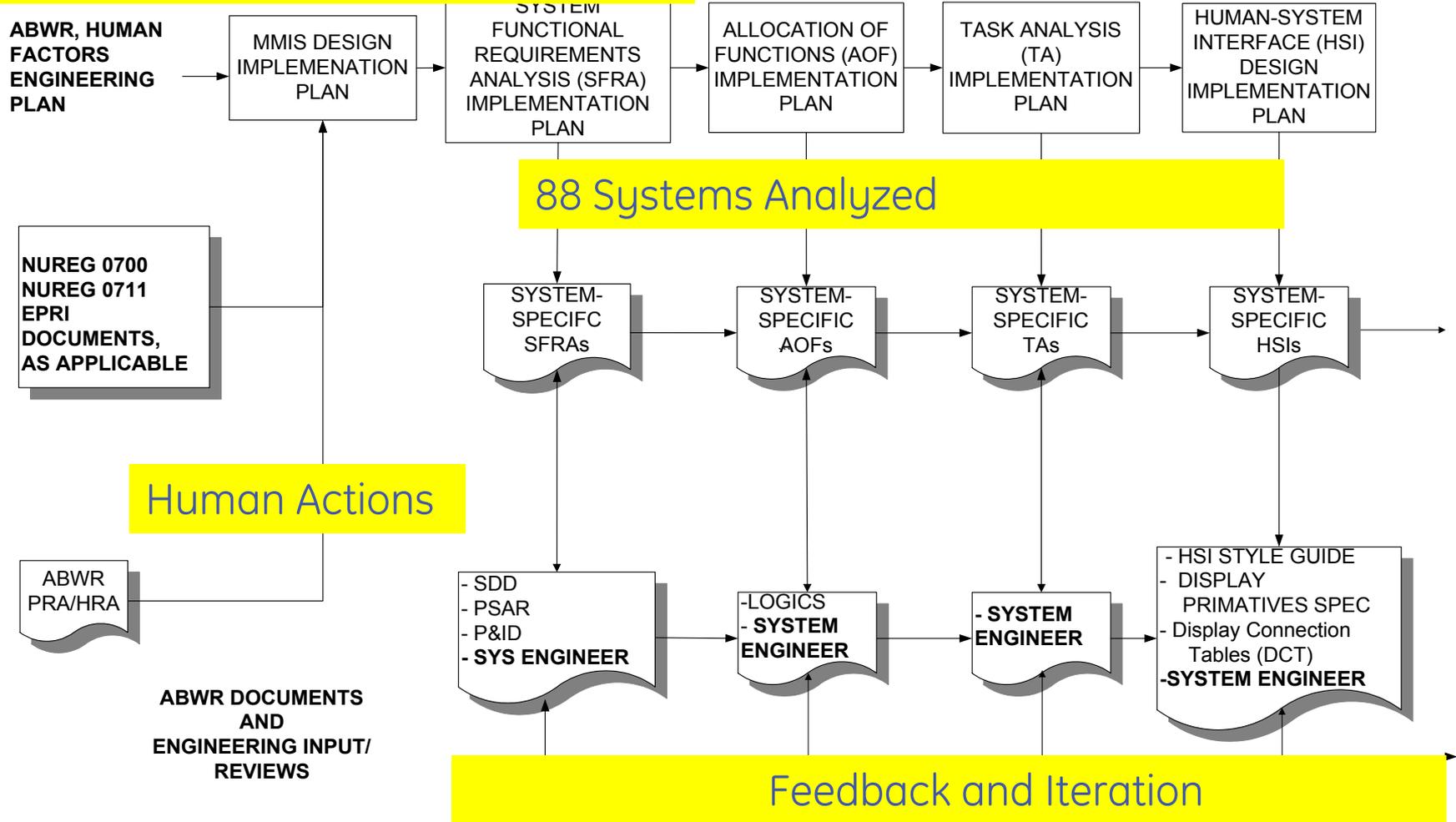
Design Implementation

Human Performance Monitoring

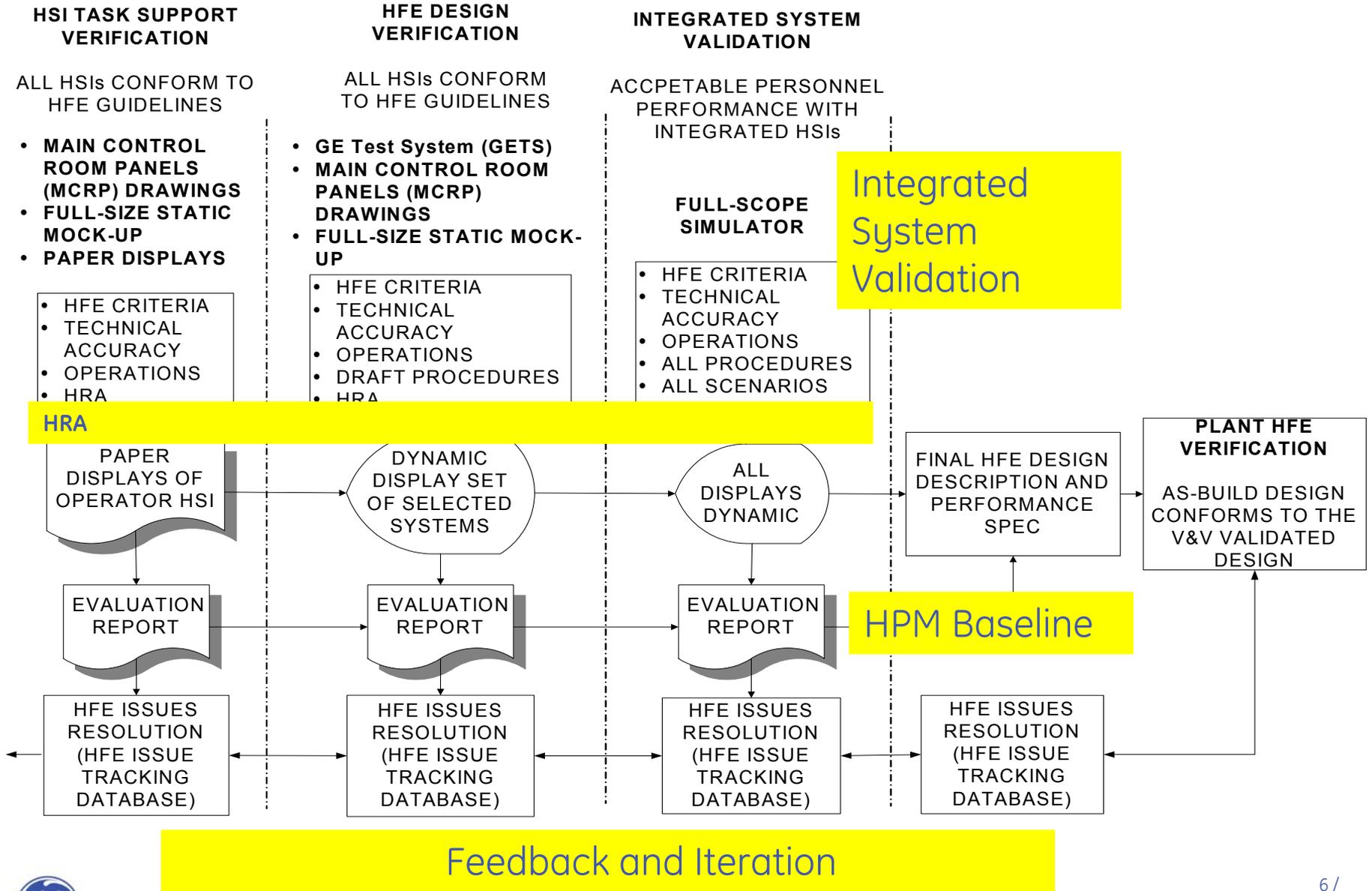
# ABWR HFE Design Process

Team of 19 experts, eleven disciplines

PERFORMANCE AND PREPARATION OF HFE



# ABWR HFE Design Process



# ESBWR HFE Implementation



# Next Actions

1. Submit Draft of ESBWR HFE Program Plan (October 15, 2005)
2. Rewrite Chapter 18 in SRP/NUREG 0711 Rev 2 form *with* added details (December 2<sup>nd</sup> 2005)
3. Prepare ESBWR draft plans (see next slide)
4. Complete ESBWR specific plans (March 2006)

# HFE Action Plan Schedule

<b>Plan Submittal</b>	<b>Draft</b>	<b>Final</b>
HFE Plan	October 15, 2005	December 22, 2005
OER plan	December 22, 2005	January 31, 2006
Functional Requirements Analysis and Allocation Plans	December 22, 2005	January 31, 2006
Task Analysis Plan	December 22, 2005	January 31, 2006
Staffing and Qualifications Plan	January 31, 2006	February 28, 2006
HRA Plan	January 31, 2006	February 28, 2006
HSI Design plan	January 31, 2006	February 28, 2006
Design Implementation Plan	February 28, 2006	March 31, 2006
Procedures Development plan	February 28, 2006	March 31, 2006
Training Development plan	February 28, 2006	March 31, 2006
HFE V&V plan	February 28, 2006	March 31, 2006
HPM Plan	February 28, 2006	March 31, 2006