

SNC Modern Control Room Strategic HFE Activities – Design for the SNC Legacy Fleet Main Control Room

Human and Technology Integration, Day 3 – Session #5

**Raymond Herb, SNC Fleet Digital Principal, Central Design,
Birmingham, AL
rlherb@southernco.com**

SNC Modernization Objectives

Fleet Digital Modernization Goal is to support the SNC Fleet past 80 years through:



Operational Risk
Reduction



Design Efficiency



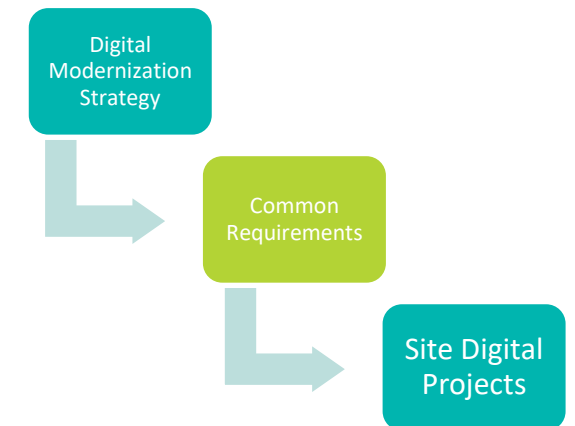
Project Risk Reduction



O&M Cost Savings

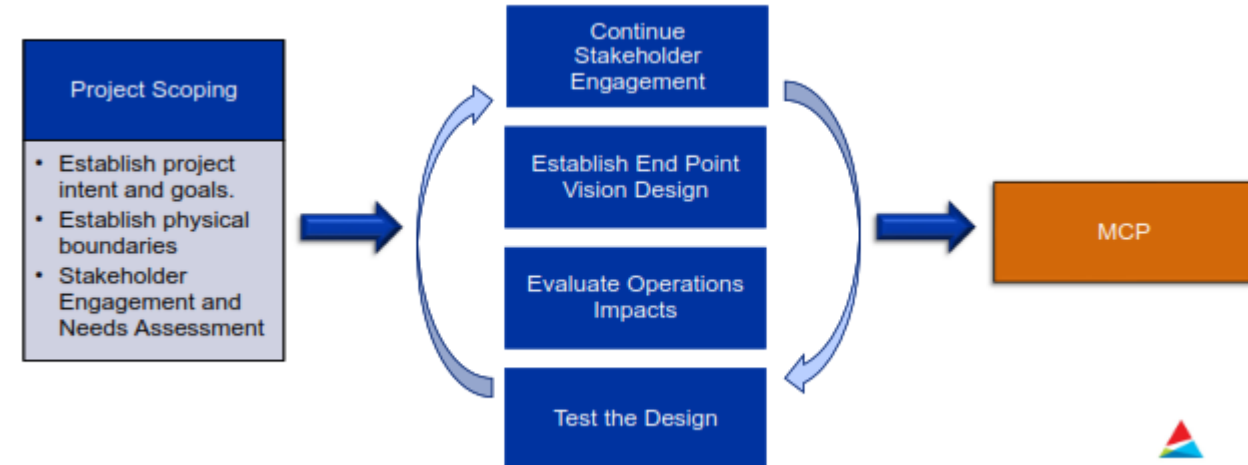
Filling the gap between strategy and implementation

- Plan for Standardization and Flexibility
 - Use Common Design Elements
 - Standard design requirements
 - Capture Stakeholder needs (including the business)
- Plan for Modern Main Control Room
- Design-in Lifecycle Support
- Inform Business and Organizational changes



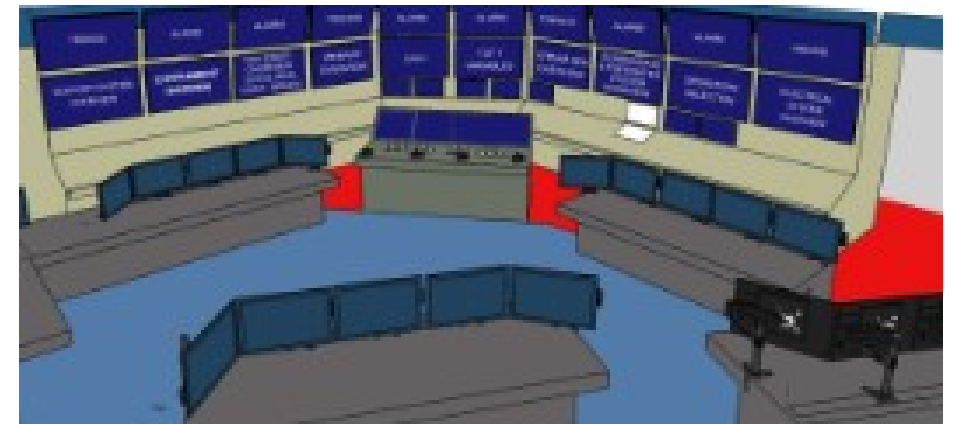
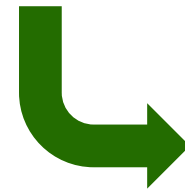
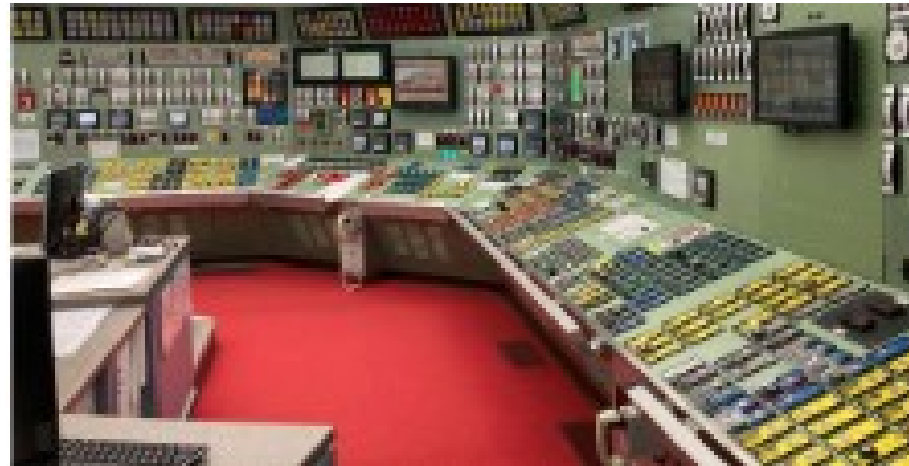
Modern Control Room Project

- The SNC Modern Control Room starts with establishing the End Vision
- The MCR End Vision supports the overall goals of Modernization
- The End Vision is accomplished through Phases
- Each Phase is based on sound HFE principles
- Each Phase was tested to confirm assumptions



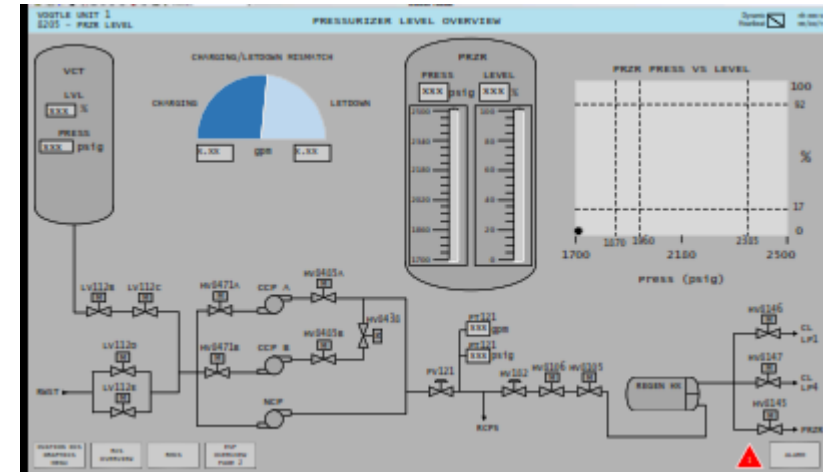
Developing Endpoint Vision

- Stakeholder Input
 - Operations
 - Maintenance
 - Engineering
- Bring information and automation to the Operator
- Sensible phased approach, based on plant and operational needs
- Each phase must stand alone
- Iterative process based on testing and review
- Be flexible, expect change



New Concepts of Operations

- Transition from traditional stand-up control room to sit down operators
- Information brought to the Operator
- Automation of routine tasks
- Task based displays
- Automation to support normal operations and safe shutdown scenarios
- Validate the design with HFE principles



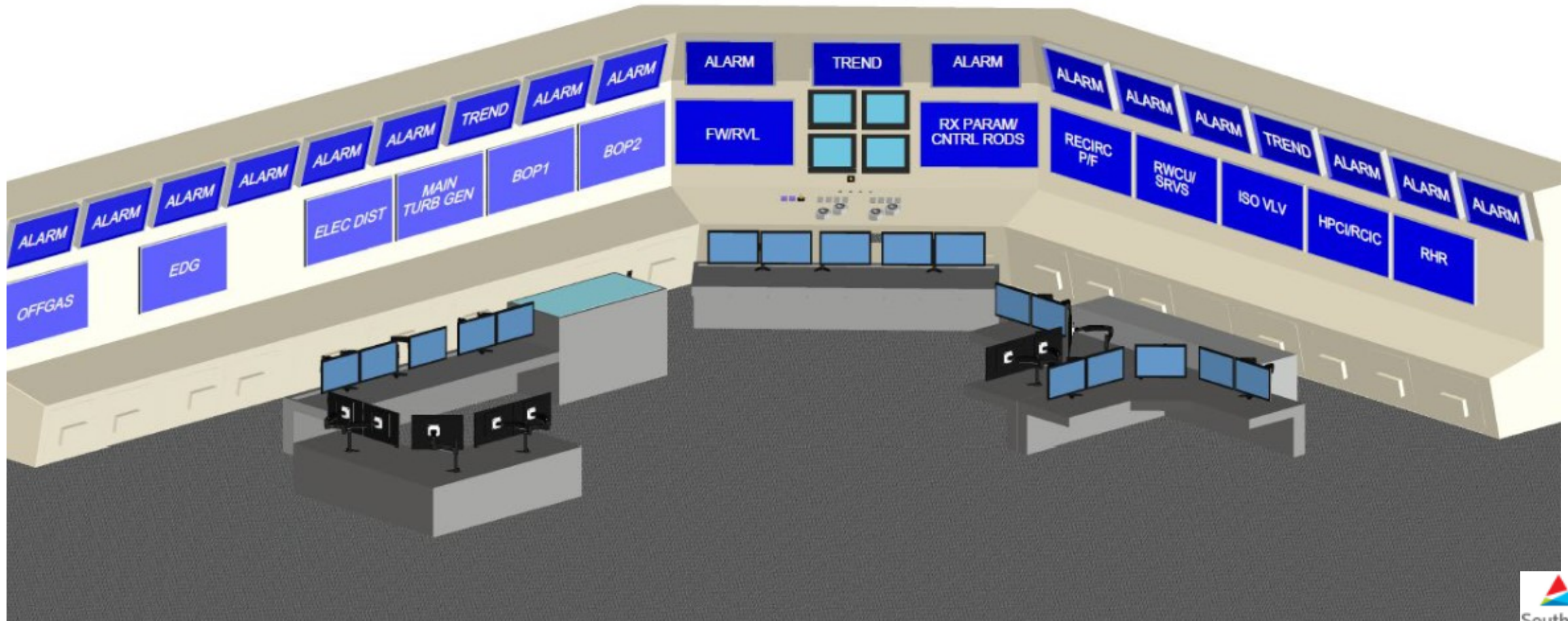
POST-ACCIDENT MONITORING CATEGORY 1 VARIABLES

VARIABLE #	PARAMETER	STATUS	VARIABLE #	PARAMETER	STATUS
1	RCS WK PRESSURE (psig)	312 / 314	10	CONTAINMENT SURP LEVEL (NR)	L17777
2	RCS HOT LEG TEMP (WR)	312 / 314	11	CONTAINMENT SURP LEVEL (WR)	L1764
3	RCS COLD LEG TEMP (WR)	312 / 314	12	CCY LEVEL TANK 1	L15111a
4	SG WATER LEVEL (WR)	312 / 314	13	APW FLOW NO 1	P15152a
5	SG WATER LEVEL (NR)	312 / 314	14	CONTAINMENT RADIATION (WR)	W0005
6	PRZR LEVEL	L1450	15	STEAM LINE RADIATION MONITORS	W11110
7	CONTAINMENT PRESSURE	P1254	16	RCS SUBCOOLING	W11110
8	STEAM LINE PRESSURE	P1514a	17	NEUTRON FLUX (NR)	W11110
9	RWT LEVEL	L1990a	18	ROLES	UPPER
			19	CONTAINMENT PRESSURE (WR)	P110942
			20	HOTTEST SET	SHUT 1
			21	HOTTEST SET	SHUT 2

Vogtle End State



Hatch End State Vision



Farley End State Vision





Southern
Nuclear