# HFE Lessons Learned

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# HF Lessons Learned: Project Scope and MCR Decision

| Change the ConOps | • MCR modernization is requisite for a broad spectrum change in ConOps |
| --- | --- |
| Utility Staffing | • MCR modernization alone is insufficient for staffing optimization |
| Automation | • MCR modernization enables automation |

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# Lessons Learned:  Planning Phase

**Aggregate existing input data**

- OPEX Investigation and Report
- Stakeholder Surveys
- Benchmarks
- Current control room

**Evaluate what's missing or not obvious**

- Operations Exam Banks
- Current control room
- High PRA value actions, design features,
- Adverse Condition Monitoring Plans / Troubleshooting

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**Lessons Learned:  Planning Phase**

## Staffing for HFE activities and decision making

- Operations & Maintenance
- Licensing
- HF tools and techniques
- Verification and Validation

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# HFE LL: Execution phase

**HFE and Licensing**
- Differentiating HF design inputs from Licensing Activities

**Operations Involvement**
- Constraints
- Leveraging the Strengths of the Operator

**Specific Issues**
- System Splits
- Alarm Presentation

**HSI Development**
- Leverage Strengths and Environment
- Eliminate or mitigate Weaknesses

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# HSI Development: Prototyping and Refinement

# HSI Development: Prototyping and Refinement



- Presentation strategy

- Levels of information

- Development Tools

- Brief mention of D3

# HSI Development: Integrating and Testing



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# In Summary

**Modification Scope**
- Covered on Day 2

**HFE Planning**
- Data aggregation and utilization
- Staffing up and recruiting support

**HFE Execution**
- Licensing overlap with HFE activities
- Benefits of Operations design input
- System split issues
- HSI development, prototyping, use of simulation

Questions