Project Overview

• Develop Advanced OCC concepts to improve management of NPP outages.
• Use modern communication and collaboration technologies for outage coordination and problem resolution.

• Utility Partners –
  – Arizona Public Service (Palo Verde)
  – Southern Company
  – TVA
  – Duke Energy
  – Exelon
  – South Texas Project
AOCC Concepts

Real-Time collaboration for Emergent Issues

Improved communication of real-time outage status & discovered conditions

Automatic pending support notifications

Advanced Outage dashboard for improved schedule management

Improved OCC physical design
AOCC Implementation Strategy

Change Management Plan

Strategic

Tactical

Evaluate Current Outage Processes

New Physical OCC?

New Physical OCC Design

Select Desired Technologies for Implementation

Technology Implementation

Monitor, Evaluate, Adjust

Function Analysis

Communication Analysis

Advanced Outage Functions

Available Technologies

Technology Deployment Plan

Stepwise Technology Deployment

Yes

No
Accomplishments

• INL/EXT-16-37425: “Design Concepts for an Outage Control Center Information Dashboard” (M4)
• INL/EXT-16-39622: “Development of an Overview Display to Allow Advanced Outage Control Center Management to Quickly Evaluate Outage Status” (M3)
• Completed a dashboard prototype - Technology Readiness Level 6. Received a $121K DOE grant to refine design and features required for commercialization.
Change Management
OCC layout redesign
Brunswick OCC Design Concept
Concept to Reality
Old Dashboard Concepts
New Dashboard Concepts

Using Past Performance to Evaluate Current

[Diagram showing various performance indicators and metrics]
Conclusion

Feedback from industry:

• Outage managers need and want the dashboard tool. (Some utilities already use dashboards to show progress, but none [to our knowledge] is using historical data analysis to predict outage completion).

Application potential:

• Could be used by any commercial NPP - Stand-alone tool or incorporated into a larger work management software package.
• Licensed for inclusion by existing work management software companies, such as IBM, Curtiss-Wright, Pipeline, Rolls-Royce, and ABB.

Next Step - Outage Risk Management Improvement (ORMI) Pilot Project:

• Investigate methods to improve real-time plant risk management and configuration control during outage as a function of work activities and plant system alignments.
• Develop technologies to detect undesirable interactions between plant configuration and activities.
END

Questions?