Wolf Creek Digital I&C Application Experience

June 4, 2009

Terry Garrett

Vice President Engineering

Wolf Creek Nuclear Operating Corp.

Introduction

- Wolf Creek Generation Station to install first implementation of the Advanced Logic System (ALS) during fall 2009 refueling outage
- Culmination of five year development and 24 month licensing effort

Wolf Creek Goals

- Improve the safety of the plant
- Address equipment reliability issues with safety-related instrumentation and control (I&C)
- Resolve current obsolescence concerns
- Generic licensing approval

Wolf Creek Approach

- Common platform for safety-related I&C
- Design simplicity
- Incorporate advanced testing and diagnostics
- No additional diverse actuation systems

Wolf Creek Benefits

- Generic approval of ALS
  - Future use of the ALS platform will require minimal staff review
- Equipment reliability issues and obsolescence resolved
  - Single point vulnerabilities eliminated
  - Improved testing and diagnostics
- Improve the safety of the plant
  - Increased integrity and reliability

Licensing Experience

- Approval process was challenging
  - Application review process was not clear
  - First time for ALS - an FPGA based platform
  - Key interim staff guidance (ISG) issued while review was in process
  - Documentation and depth of review
- ISGs served as point of reference for staff position(s)
  - ISG 1: Cyber Security
  - ISG 2: Diversity and Defense-in-Depth
  - ISG 4: Communications