  
**Constellation Energy**  
Nuclear Generation Group

**Knowledge Transfer & Retention**

**Constellation Energy Nuclear Group**

Maria Korsnick  
Vice President – Nuclear Operations  
Bruce Leonard  
Manager, Nuclear Training  
William Holston  
Manager, Training Calvert Cliffs

Presented at NRC RIC March 2009

---

---

---

---

---

---

---

---

  
**Constellation Energy**  
Nuclear Generation Group

**Knowledge Transfer & Retention Business Need**

- More people eligible to retire
- Attrition rates increasing – market pull
- Creates more single person vulnerabilities
- Yet, we’re counting on experience:
  - To run our processes & programs
  - To provide governance & oversight

Presented at NRC RIC March 2009

---

---

---


---

---

---

---

---

  
**Constellation Energy**  
Nuclear Generation Group

**KT&R Purpose and Design**

- Identify weaknesses and opportunities to preclude loss of intellectual capital
- Implement process that is user friendly and can be maintained with internal resources
- Integrate into normal business processes

Presented at NRC RIC March 2009

---

---

---

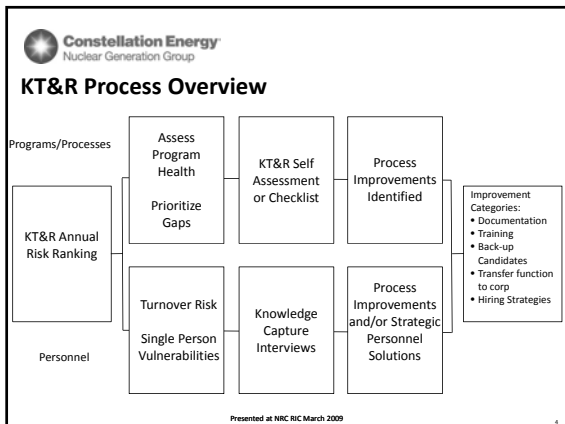
---

---

---

---

---



---

---

---

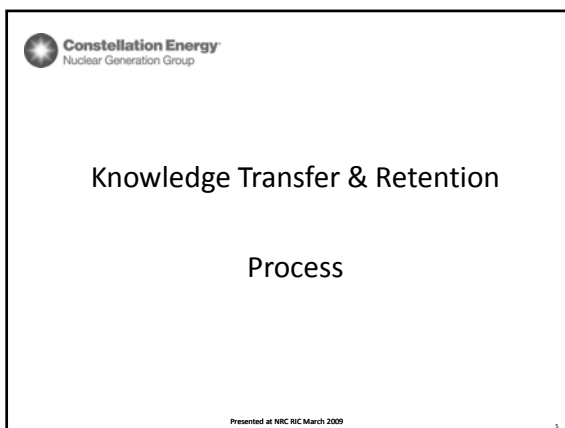
---

---

---

---

---



---

---

---

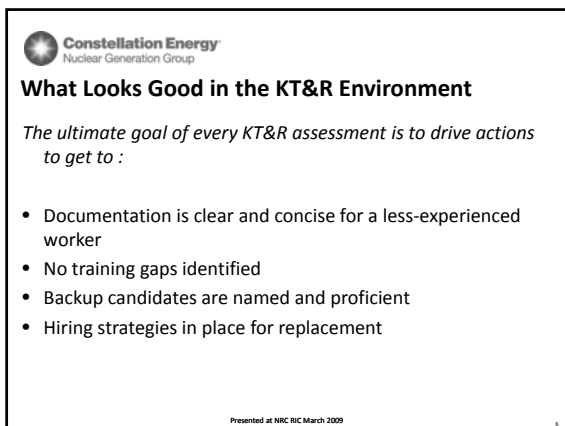
---

---

---

---

---



---

---

---

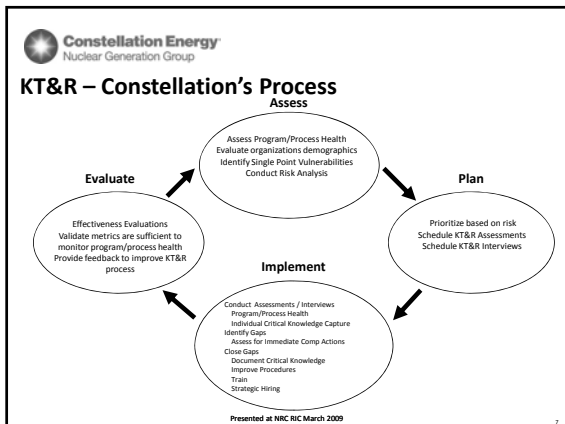
---

---

---

---

---




---

---

---

---

---

---

---

---

---

---

- 
- Constellation Energy**  
Nuclear Generation Group
- ### KT&R - Annual Risk Ranking
- List of Programs and Processes
    - All programs and processes (approx 160) used to manage the business at the site or at corporate.
    - Conducted collegially with site management team.
    - Identified most significant risks to target assessments
- Examples:
- Technical Programs
    - » Aging Management Programs
    - » Preventive Maintenance Program
    - » Flow Accelerated Corrosion Program
    - » Fuel Fabrication Oversight Process
  - Administrative Processes
    - » Human Performance Program
    - » Corrective Action Program
    - » Planning Process
    - » Leadership Training Program
- Presented at NRC RIC March 2009

---

---

---

---

---

---

---

---

---

---

- 
- Constellation Energy**  
Nuclear Generation Group
- ### KT&R - Annual Risk Ranking
- Categories
    - A = Regulatory (Federal, State, Local)
    - B = Performance Objectives & Criteria (INPO)
    - C = Business Objectives
  - Program / Process Health
    - 1 = Good: no significant improvements necessary
    - 2 = Work in Progress: actions to improve are identified and working
    - 3 = Poor: trends or gaps noted, action plans not yet developed or not enough progress made to claim work-in-progress
  - Turnover Risk Factor
    - x5 = Projected attrition within 1 year or high depth risk (vacant critical position or inexperienced personnel)
    - x4 = Projected attrition within 1 to 2 years or medium depth risk
    - x3 = Projected attrition within 2 to 3 years or some depth risk
    - x2 = Projected attrition within 3 to 5 years
    - x1 = Projected attrition greater than 5 years
- Presented at NRC RIC March 2009

---

---

---

---

---

---

---

---

---

---

**Constellation Energy**  
Nuclear Generation Group

### KT&R - Annual Risk Ranking

Program Title	Category	Category Risk	Program Health	Turnover Risk	Total Risk	Additional Info
Aging Management	A	3	1	2	8	
Preventive Maintenance	B	2	1	1	3	
Flow Accelerated Corrosion	A	3	2	4	20	Single Person Vulnerability
Fuel Fabrication Oversight	B	2	2	3	12	
Human Performance Program	B	2	1	1	3	
Corrective Action Program	A	3	3	5	30	Single Person Vulnerability
Planning Process	B	2	1	1	3	
Leadership Training Program	C	1	1	3	6	

Presented at NRC RIC March 2009

---

---

---

---

---

---

---

---

---

---

---

---

- Constellation Energy**  
Nuclear Generation Group
- ### KT&R - Right People to Conduct Assessments
- KT&R Self Assessment
    - Peer lead assessment team
    - Obtain industry expertise
  - KT&R Checklist
    - Performed by program/process Subject Matter Expert (SME)
    - Independent review to have different eyes question responses (KT&R Coordinator or peer)
  - Knowledge Capture Interview
    - Person being interviewed completes questionnaire
    - Interview conducted by supervisor or SME panel
    - Interview supported by HR
- All results reviewed and approved by Department Manager*
- Presented at NRC RIC March 2009

---

---

---

---

---

---

---

---

---

---

---

---

**Constellation Energy**  
Nuclear Generation Group

### KT&R Self Assessments, Checklists & Knowledge Capture Interviews

**DISCOVERY**

**Documentation**

- Lack of documentation
- Lack of detail in procedures
- Procedures not at Industry Standards
- No PM for maintaining equipment
- Lack of process flow documentation

**Training**

- Training Plan insufficient
- Training material outdated
- Lack of Qualification process
- Timing of training on new processes
- No Training or familiarization plan

**People Development**

- New / Less-experienced personnel
- New Leadership
- Lack of industry exposure

**Strategic Hiring**

- Single person vulnerability
- Retirement / attrition risk
- Knowledge capture interviews

Findings → Actions

**TOOL KIT**

**Documentation**

- Procedures
- Flowcharts
- Job Familiarization Guides
- PM development

**Training**

- Qualifications Process
- Initial Training
- Refresher Training
- CRG review/modify schedules

**People Development**

- Coaching / Mentoring
- Benchmarking / BFO Assists
- Clarify Roles & Responsibilities
- HR assignment

**Strategic Hiring**

- Balance Site vs. Corp. Strength
- Succession Planning
- Forward Hiring
- External Hires

**Transfer Function to Corporate**

- Program development
- Standardize process across fleet

Presented at NRC RIC March 2009

---

---

---

---

---

---

---


---

---

---

---

---

  
**KT&R - Improvement Results**

- Robust program and processes
  - New procedures created
  - Existing procedures revised
- Fewer human performance errors
  - Job Familiarization Guides created
  - Training improvements
- Improved efficiencies
  - Standardize fleet processes / procedures
- Strengthened workforce
  - Strategic Hiring
  - Backup Candidates
- Personnel alignment around Business Initiatives
  - Fleet-wide initiatives identified
  - Lessons shared through Peer Teams

Presented at NRC RIC March 2009 13

---

---

---


---

---

---

---

---

  
**Implementation & Lessons Learned**

Presented at NRC RIC March 2009 14

---

---

---


---

---

---

---

---

  
**KT&R – Essentials for Implementation**

- Pilot Process at one location
- Integrate the knowledge you gain into hiring strategies
- Assign a site coordinator that can make things happen
- Make sure people understand in advance that this is about retaining knowledge in the organization, not retaining people

Presented at NRC RIC March 2009 15

---

---

---


---

---

---

---

---

  
**Essentials for Implementation - Roll Out**

- Apply rigorous change management process
- Conduct overview training for general population
- Used tiered approach to communications
- Conduct training for end-users developed through a systematic approach

Presented at NRC RIC March 2009 16

---

---

---


---

---

---

---

---

  
**Revisions Resulting from Feedback**

- Checklists modified to include specific industry
- Document results of process using the existing corrective action process
- Developed template for Managers to report KT&R findings
- Programs/Processes added to list based on input from fleet risk ranking
- Corporate office included.

Presented at NRC RIC March 2009 17

---

---

---


---

---

---

---

---

  
**Revisions Resulting from Feedback**

- Aligned timing of risk-ranking with business planning process
- Revised process to address unanticipated personnel departures
- Revised Employee Self-Assessment and Task Description forms to incorporate KT&R questions.
- Added subject matter experts for each functional business area to facilitate process

Presented at NRC RIC March 2009 18

---

---

---


---

---

---

---

---

  
**Oversight**

- Keep it fresh: put results in front of site and corporate senior managers
- Establish Corrective Action Program trend codes
- Establish Key Performance Indicators
- Verify integration into the business planning process

Presented at NRC RIC March 2009

---

---

---


---

---

---

---

---

  
**Examples of feedback from Oversight**

- Early, critical and constructive review of assessments by the station advocate is important.
  - Program history not adequately captured
  - Job aids not considered in solution set
  - Job shadowing opportunities at professional development activities not considered
  - Work group turnover was high with no actions.
  - Buy-in was not obtained from referenced organizations.

Presented at NRC RIC March 2009

---

---

---


---

---

---

---

---

  
**KT&R Keys to Success**

- Strong support from Site VP and Plant Manager
- Integrate assessments and action items into business planning process – not all of this can occur with level of effort (LOE)
- Assign a site coordinator that can make things happen
- The assessment and interview process is not natural to most staff; training is essential
- You are asking them to create strategic actions to prevent future potential risks, sometime years in advance
- Get lessons learned broadly communicated.

Presented at NRC RIC March 2009

---

---

---


---

---

---

---

---

 Constellation Energy  
Nuclear Generation Group

QUESTIONS?

Presented at NRC RIC March 2009 22

---

---

---

---

---

---

---

---