

SMR.1769-5

***SCHOOL OF NUCLEAR KNOWLEDGE MANAGEMENT***

*18-22 September 2006*

**Industry best practices for managing an ageing work force**

**J.E. BOYLES  
Chattanooga TN, 37419  
U.S.A.**



# **School of Nuclear Knowledge Management**

**Annual Technical Meeting on “Managing Nuclear Knowledge”**

**The Abdus Salam**

**International Centre for Theoretical Physics**

**18 - 22 September 2006**

**Industry Best Practices for Managing an Aging Work Force**

Presented by Ed Boyles  
jeboyles@comcast.net

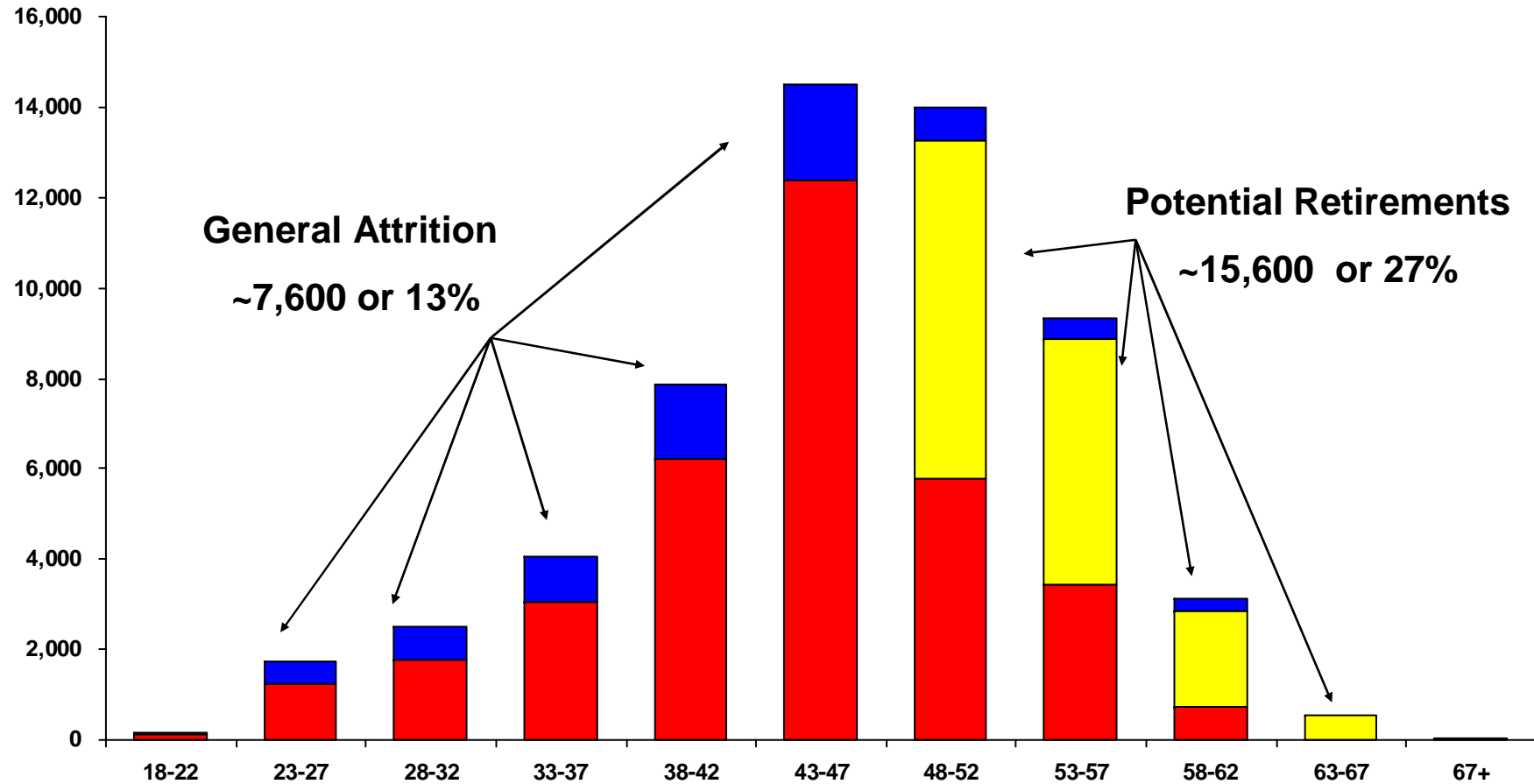


# Agenda

---

- Background – Aging Work Force Challenge
- Access to Best Practices
- Definitions
- Examples of Best Practices

# U. S. Nuclear Generation 5-Year Attrition



1. *Potential Retirees are defined as employees that will be older than 53 with 25+ years of service, or older than 63 with 20 years of service, or older than 67 within the next five years.*

Source: 2005 NEI Pipeline Survey

# Industry Best Practices for Managing an Aging Work Force Background

- The aging nuclear work force is a well recognized challenge in the industry.
- The 2005 work force survey by the Nuclear Energy Institute projects approximately 40 percent over 5 years for the U.S. nuclear work force.
- The aging work force is a major impact on the *international* nuclear industry, however, other factors should also be considered, for example:
  - Rapid growth and experience dilution
  - Political decisions to reduce reliance or to phase out nuclear power
  - A combination of aging work force and future growth
- Many nuclear organization are in various stages of efforts to address the challenge.

# Industry Best Practices for Managing an Aging Work Force Background Cont.

- Agencies and support groups such as the IAEA, NEI, and EPRI have been actively engaged in assisting the nuclear industry in finding ways to meet the challenge.
- Through workshops, technical meetings, taskforce activities, and project team assignments - many best practices have been identified, documented, and made available to the industry.
- In addition, assist visits by WANO/INPO and the IAEA provide valuable expert resources to NPP's – including access to best practices.

# Examples of Activities include

- Krsko Assist Visit April 2005 (WANO and IAEA)
- School of Nuclear Knowledge Management – Trieste, Italy (IAEA and ICTP)
- Expert Mission on Knowledge Management - Paks NPP (IAEA)
- Practical Approaches to Retaining Critical Knowledge, Atlanta, Georgia – November 2005 and April 2006 (NEI and INPO)
- IAEA-Tech-Doc on “Knowledge management for nuclear industry operating organizations” developed with publication scheduled for second half of 2006
- Managing Nuclear Knowledge: Strategies and Human Resource Development - Proceedings of the International Conference held in Saclay, France, 7–10 September 2004

# Access to Best Practices

**IAEA**  
**INIS and NUCLEUS**

- Access to library
- Search capabilities
- Links to helpful websites

**Nuclear Energy  
Institute  
Workshops and  
Reports**

**IAEA Workshops and  
Expert Missions**

- KHNP and Trieste
- Krsko and Paks NPP's

**Internal and  
external  
Benchmarking**

**EPRI Reports  
and assist**



# Industry Best Practices for Managing an Aging Work Force Definitions

- Benchmarking – The practice of comparing features and performance of an organization, department or function with those of other organizations and standards. (IAEA definition)  
or
- Benchmarking - The process of identifying, analyzing, and adopting as appropriate the best practices utilized by high performing organizations that produce superior results (**often focused on metric comparisons**).
- “Process Benchmarking,” generally higher-level studies that demonstrate how high performing organizations accomplish the specific process and achieve superior results. This can be accomplished by surveys, workshops, sites visits, etc.
- Through the process of benchmarking best practices, organizations can compare how the same functions/task are performed by others thus gaining insight and ideas on changes or enhancements that can improve their performance.

# Industry Best Practices for Managing an Aging Work Force

## Definitions

- Best Practice – A process or methodology that has been shown to work well and produce good results and is, therefore, recommended as a model. Also termed Good Practice (IAEA definition).

or

- “Best Practice Process” are documented processes, approaches or tactics used by successful companies. These companies may not be “Top Decile” in all areas, but have developed well defined and successful practices in specific areas.
- This presentation will cover selected “HR process best practices” and will discuss ways to implement.
- These best practices are offered as possible aids that can be modified or adjusted to fit the requirements of an organization.
- Often an organization’s culture, business needs, demographics, and future direction dictate which processes (best practices) work best for specific situations.

# Industry Best Practices for Managing an Aging Work Force

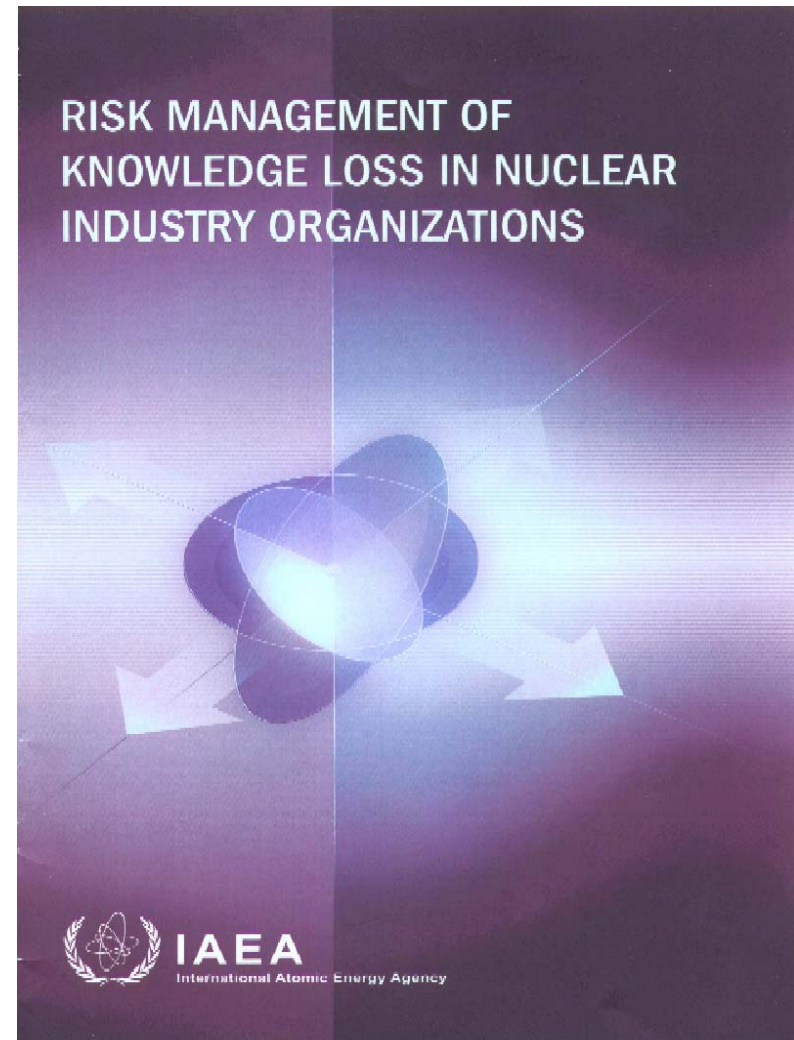
## *Examples of Recent Best Practices*

- IAEA Technical Reports
- EPRI Reports
- NEI and INPO Benchmarking Initiatives
  - Recruiting and building pipelines - Exelon
  - Human Capital Planning – Palo Verde NPP
- TVA New Employee Experience

# Risk Management of Knowledge Loss *Agenda*

**IAEA Technical Report - “Risk Management of Knowledge Loss in Nuclear Industry Organizations” – to be published late 2006**

- **Knowledge Management Terminology**
- **Managing Work Force Issues – A Strategic Approach**
- **Knowledge Loss Risk Assessment Processes and Tool**
  - **The Three Step Process – Tennessee Valley Authority Experience**
  - **Employee Self-Assessment**
  - **Institutional Knowledge Loss**





# **Best Practice self-elicitation and capture**

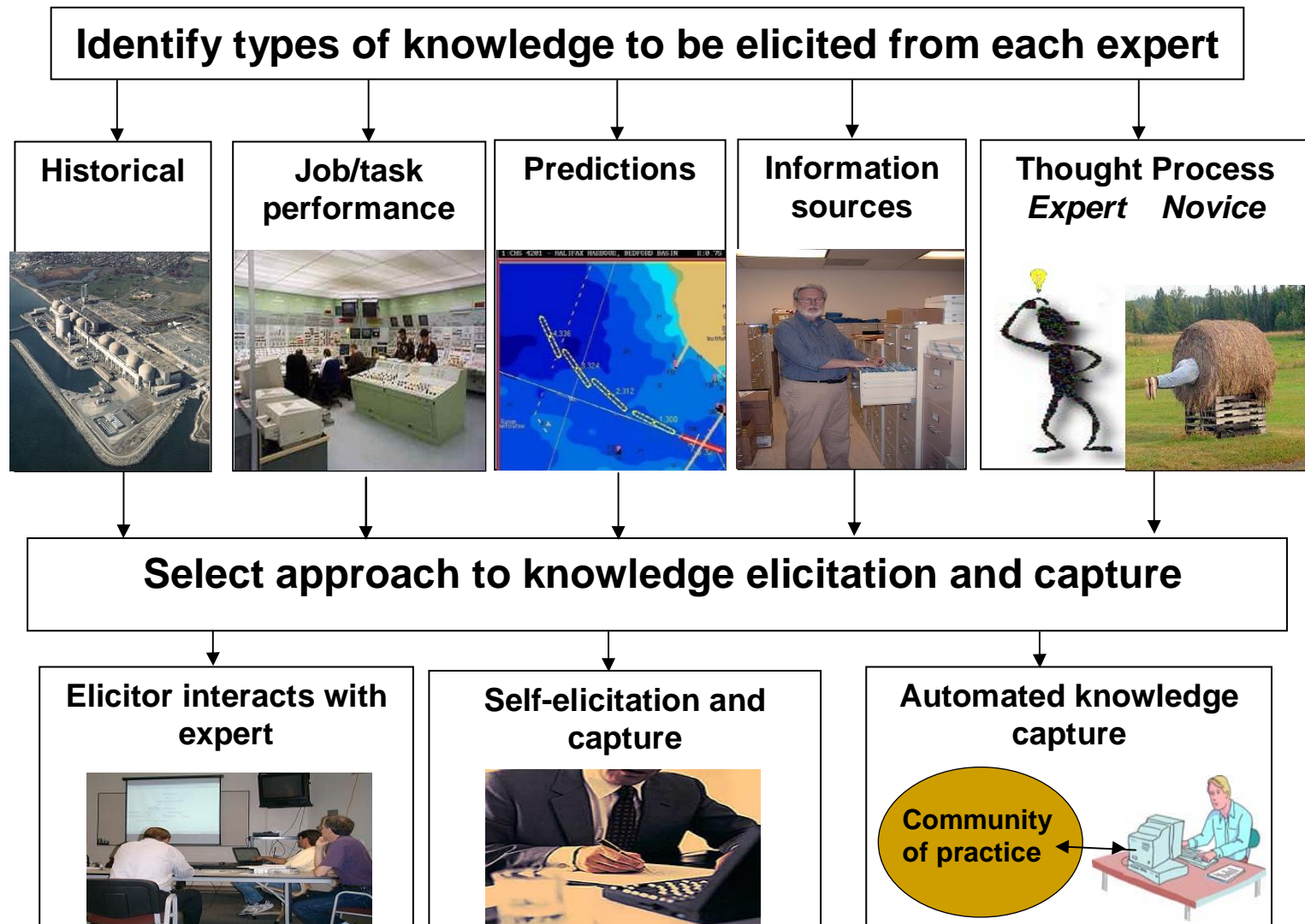
---

## **EPRI Report**

**Real-Time Expert Knowledge Acquisition and Transfer  
- Needs and Technology Assessment (1009581,  
November, 2004)**

Toward Self-Elicitation and Automated Knowledge Capture Methods

# Knowledge Type drives Method Selection



# Best Practices

## NEI and INPO Benchmarking Initiatives

- **Recruiting and building pipelines - Exelon**
- **Human Capital Planning – Palo Verde NPP**

Shared at benchmark meeting “Practical Approaches to Retaining Critical Knowledge”, Atlanta, Georgia – November 2005 and April 2006 (NEI and INPO)

# Best Practice

## Exelon - Recruiting and building pipelines

- Developed new pilot programs to recruit operations and engineering pipeline employees to address loss of experience employees:
  - Increased education requirements of new hires
  - Upgraded screening process
  - Established partnerships with universities (both 2 and 4 years)
  - Utilized alumni to build relationships
  - Utilized engineering intern program
  - Established “Bench strength Budgets” to cover cost
  - Began recruitment nation wide
- Pilot program was expanded into other disciplines



## Best Practice

# Palo Verde NPP - Human Capital Planning

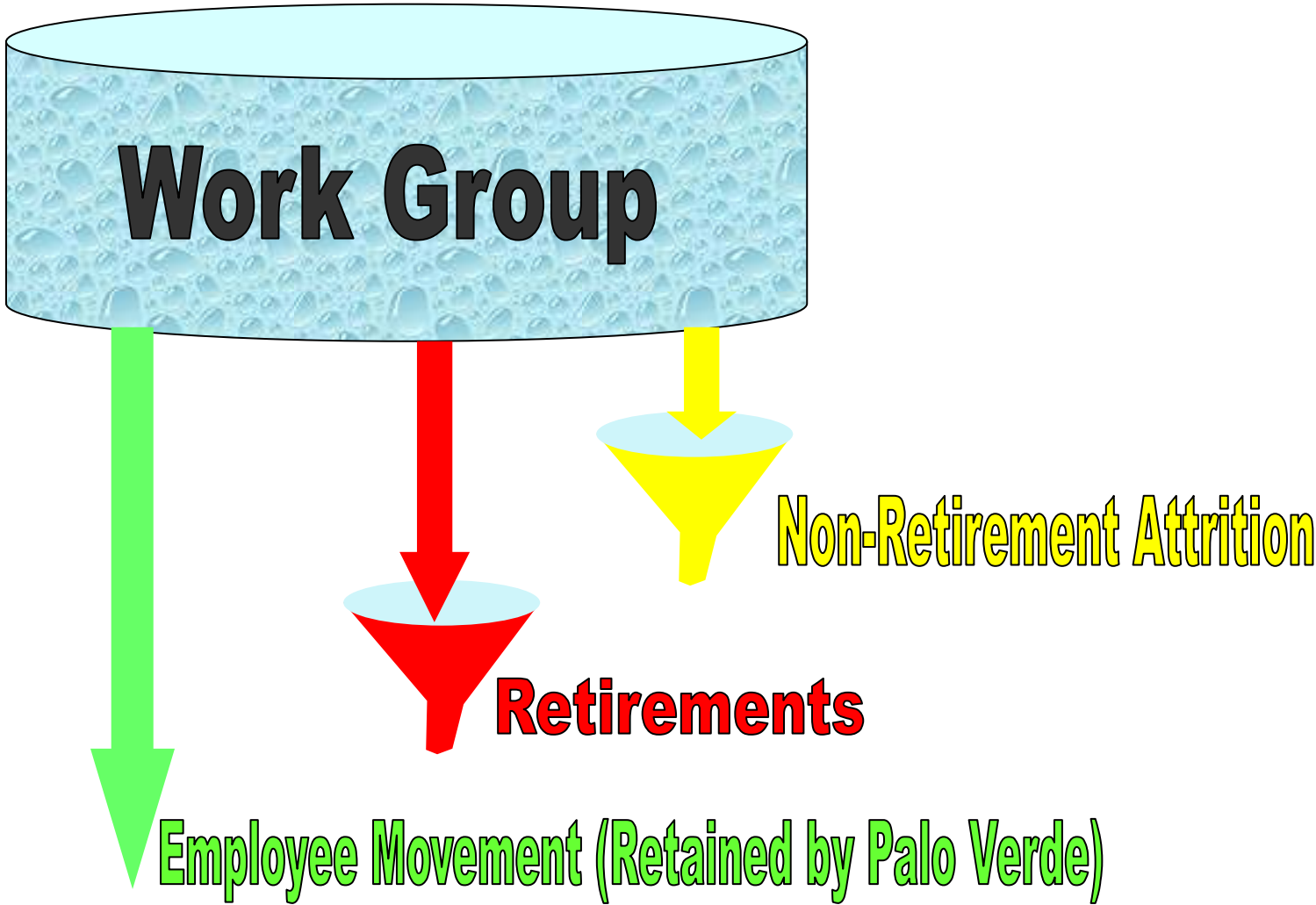
- An integrated work force planning process based on in-depth work force analysis.
- Considers a variety of work force gain (new hires, movement or promotion and developmental programs) and loss factors (retirement, movement, non-retirement attrition).
- In the past staffing needs projected based on individual department initiatives - assumptions varied - employee migration impacts were not fully considered - difficult to integrate the findings into a coherent plan

# New Approach

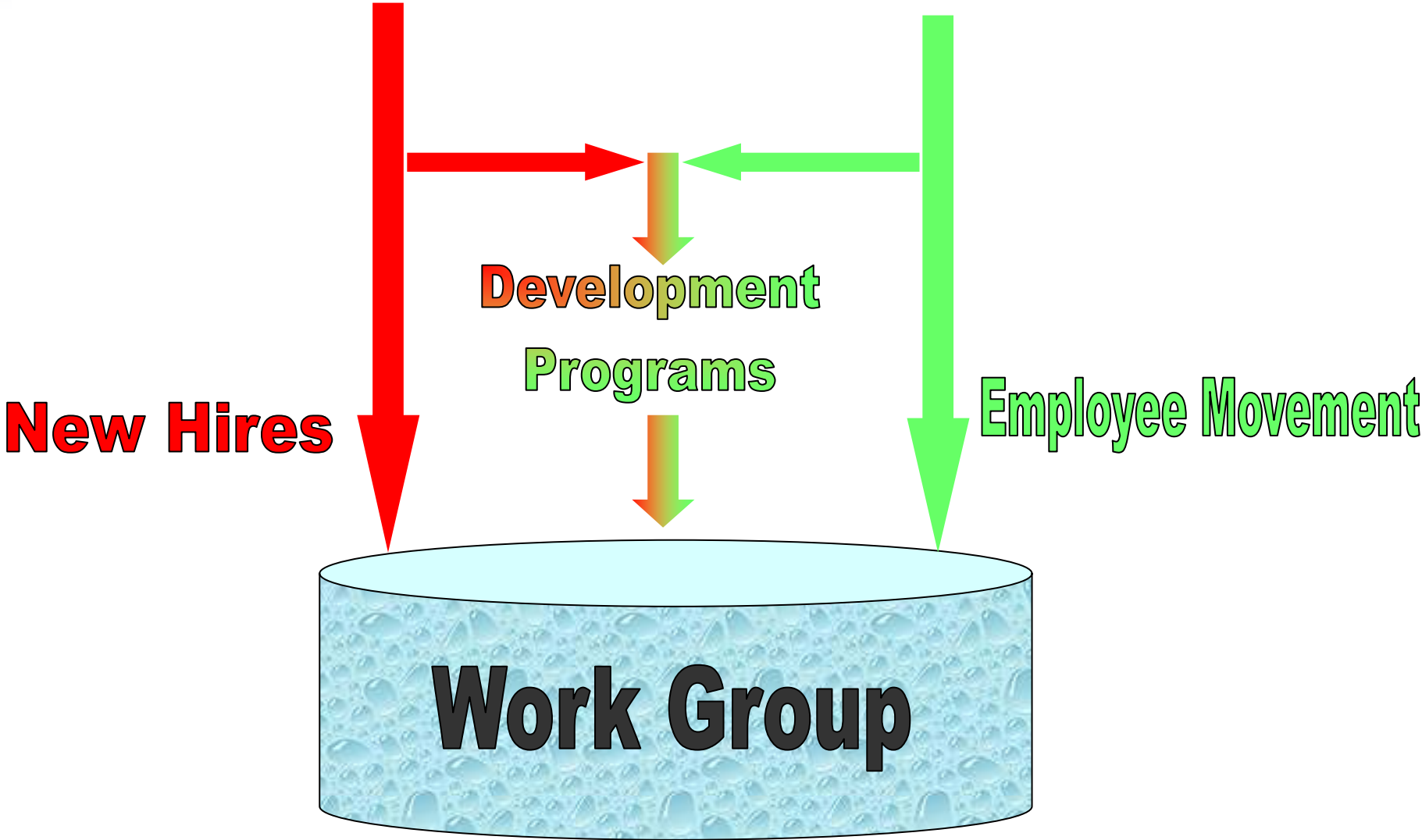
## Employee Migration Analysis

- **Integrated** site-wide approach
- Built around **talent**, not departments
- **Consistent** assumptions for losses and needs
- Calculates 6 workforce dynamics
  - 3 different types of work group **losses**
  - 3 different types of work group **gains**
- Semi-customizable
  - **Leader input can help shape the output**

# Future Work Group Losses



# Future Work Group Gains



# Other Examples of Best Practices from NEI and INPO Workshop

- College of Experts – Areva
- Knowledge Elicitation using Concept Maps – Exelon
- Phased Retirement – Southern California Edison

# Best Practice

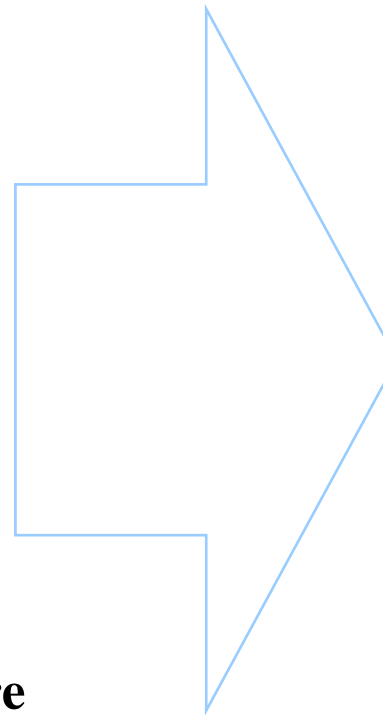
## New Employee Experience at TVA

- A process to orient new employees to TVA and their specific business unit
- Process includes introduction to TVA culture model (Star 7)
- Based on benchmarking best-in-class companies
- Utilized a private consulting firm to facilitate process
- Modified the recommended best practices to best fit TVA culture and based on feedback from new employees

# In the beginning.....

## *Objectives*

- **Improve Services for new employees & managers related to pre-employment screening, hire-in, orientation.**
- **Reduce Costs**
- **Reduce overall line HR time spent on administrative/ transaction work to enable more time on other high-value activities.**
- **Support 3 R's and CSF's**



## *Goals*

- **Centralize and standardize HIRE Process**
- **Achieve standard hiring days**
- **Process external hires using staffing organization**
- **Automate information gathered on forms**

# Why make changes?

## *Case for change -- Benefits:*

- *Combined hiring, orientation and STAR 7 experience results in annual cost savings of approximately \$300,000.*
- *Centralized and standardized hiring process yields efficiency gains.*
- *Ensures new employees have passed security clearance and medical exams prior to hire and they understand key policies and practices.*
- *Productivity ratios will increase due to higher and sustained levels of employee engagement.*
- *Manager receives “ready-to-work/train” employee(s).*
- *New employees will be fully equipped to be productive first day on the job.*
- *Alignment with “Best in Class” to become “Employer of Choice.”*

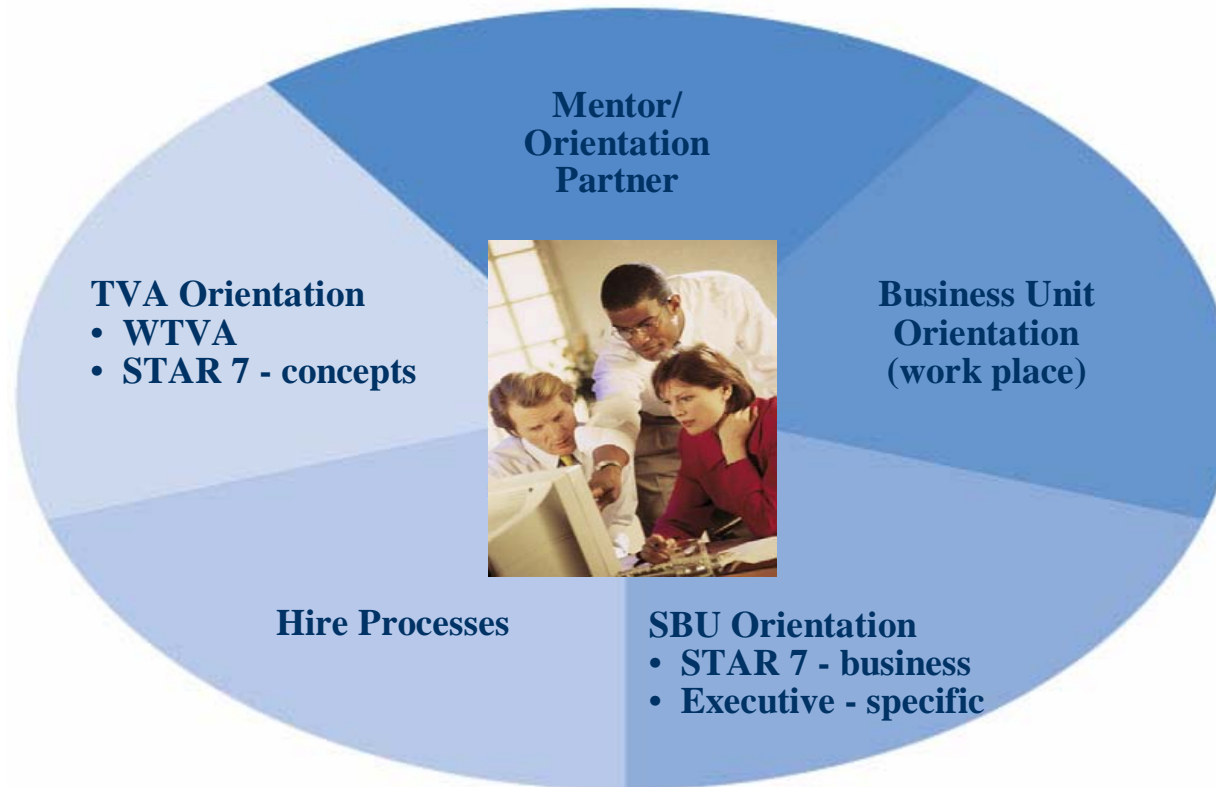




# What's New?

- *Standardized/improved requisition, interview, job offer and hiring process (external) -- centralized responsibility in Shared Resources.*
- *Streamlined security/medical screening -- pre-employment activities.*
- *Employees arrive at their new job more informed, trained and prepared to be active, productive team members.*
- *Comprehensive orientation experience -- 3 levels*  
*TVA -- Business Unit -- Strategic Business Unit*
- *On-line/downloadable Manager's Toolkit to assist in effective Business Unit orientation.*
- *Orientation Partners -- assigned prior to hire date to help new employees with early need-to-know information.*

# Program Components



# External Hiring Process

- ***Functions centralized in Shared Resources***
  - *Scheduling interviews*
  - *Making job offers*
  - *In-processing new hires*
- ***Standard hiring days***
  - *Pay day Mondays*
- ***Standard hiring locations***
  - *Chattanooga*
  - *Knoxville*
  - *Muscle Shoals*
  - *Nashville*
- ***Employment suitability security check completed prior to setting candidate report date***
- ***Medical exam completed prior to setting candidate report date***



## *Three levels --*

### **TVA-Wide Orientation**

- **TVA Business and Operations**
- **Competitive Business Approach**
- **Vision, Values, Goals and History**
- **Strategic Directions**
- **Corporate Culture - STAR 7**
- **Critical Resource Information**
  - **Self-Service**
  - **IS Help Desk**
  - **Principles/Practices/Policies**

### **Business Unit Orientation**

- **Business Unit Information**
- **Prepare Workplace for New Hire Arrival**
- **Review Pertinent Facts About Job**
- **Answer Questions**
- **Establish Expectations**

### **Strategic Business Unit Orientation**

- **Organization Structure**
- **Strategic Business Unit Goals**
- **Critical Success Factors**

# Industry Best Practices for Managing an Aging Work Force Summary

- A wealth of information exist related to Human Resource Process Best Practices for managing the aging work force.
- Agencies and institutes such as IAEA, INPO/WANO, NEI, and EPRI are actively engaged to support the nuclear industry.
- The nuclear industry has been progressive in addressing the demographic challenge and in sharing best practices.
- While the aging work force impacts a large segment of the industry, other factors (e.g., rapid growth, etc.) play a role and should be considered.

# Industry Best Practices for Managing an Aging Work Force Summary Cont.

- Most best practices can and should be modified or adapted to meet the needs of a specific organization or department.
- Organizations should consider business needs, culture, demographics and future direction when implementing change.
- *Workshops such as this one continue to provide a forum for exchanges of best practices and ideas.*



**Thank you  
Questions?**

[jeboyles@comcast.net](mailto:jeboyles@comcast.net)