Knowledge Drain Will Hit Utilities Hard
Idaho Power Takes on Performance Management to Prepare for Workforce Aging

Easing The Exodus: Innovative Personnel Strategies Can Combat The Loss Of Technical Skills
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By Ravi Krishnan, Krishnan & Associates

Aging baby boomers, who constitute more than 25 percent of the U.S. population, are nearing retirement, a fact reflected in the demographic profile of the power generation industry workforce.

A recent study by Krishnan & Associates (K&A) on the aging workforce trends at U.S. coal-fired power plants, the cornerstone of the nation’s power supply, found that the average age of the workforce at the power plants is approximately 48 years. With nearly half the technical and plant management personnel approaching retirement age, power plants face losing skilled, talented individuals who possess vital plant operating and maintenance knowledge. Furthermore, with the changing demographics, specialized labor to replace this talent pool is likely to be in short supply and difficult to recruit. As a result, the changing workforce demographics represent a vital concern for power plant owners.

MACRO-ECONOMIC MARKET DRIVERS

Higher natural gas prices and rapid economic growth are causing coal-fired power plants to operate at high capacity factors—a trend likely to continue, increasing the nation’s dependence on coal-fired power generation. Other market factors such as a surge in new construction and capital projects to ensure high reliability of an aging fleet, new environmental compliance projects and the rapid retirement of a highly experienced workforce, are creating a “highly competitive” market environment for specialized expertise. Given the specialized skill-sets required for day-to-day power plant operations and management, utilities need to employ innovative and targeted strategies to attract and retain key personnel in such a highly competitive environment. Therefore, to replenish an impending exodus of technical skills, plant owners must begin thinking “outside-of-the-box.”

The nationwide survey conducted by K&A in 2005 on approximately 40,000 MW of coal-fired generation capacity revealed the average age of a plant manager is approximately 48 years; and the average age of operations, maintenance, production and other senior power plant management is 50 to 52 years. The average age of first level supervisors is also in the 50 plus range (Figure 1). These demographic trends indicate that a 2,000 MW coal-fired plant with about 200 to 250 employees will likely lose half its current plant staff in the next decade due to retirement, attrition and other similar issues. This means a fleet with 15,000 MW of generation capacity must actively plan on identifying, recruiting, training and retaining approximately 1,000 people to fill various future positions at power plants.

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Planning for Attrition

Emerging demographic trends also indicate that utilities are competing for skilled talent not just among themselves but within a broader market. The next generation of talent entering the workforce faces different issues that pose different challenges than the baby-boomers’. These individuals have multiple career avenues, forcing employers to consider these factors when formulating a hiring and retention strategy. In addition, the declining number of engineering graduates entering the workforce intensifies the competition among employers across industries.

To face this market reality and plan for the exodus of skilled talent and potential knowledge loss, an effective workforce strategy encompassing short-term and long-term steps must be undertaken by utilities and power industry employers, including the following:

1. **Analyze Current Workforce Demographics.** One key to planning a successful recruitment strategy is to collect and analyze current workforce demographics with the emerging market conditions. Such an analysis will enable plant management to make detailed projections on employee attrition and identify required skill-sets. Such evaluations can also allow management to track key employee skill-sets that may be a concern to them due to their specialized nature. This analysis should serve as the basis for a long-term recruiting strategy and the budget allocation needs for executing a hiring program.

2. **Analyze Emerging Market Conditions.** The changing macro-economic and industry factors such as environmental laws, fuel-costs, new construction activity and projected plant utilization must be evaluated along with the utility’s current workforce demographics to determine the future workforce’s composition.

3. **Plan for the Knowledge Loss.** Once the future workforce composition is determined, utilities must make plans to capture the knowledge loss while defining a recruitment strategy. For the most vulnerable skill sets, a program must be devised to capture the knowledge loss and pursue replacements. Examples of the vulnerable positions include steam turbine specialists, pulverizer specialists, boiler engineers, performance engineers, project managers and electrical engineers.

To capture the
knowledge loss, programs such as a question and answer/knowledge management system that captures the day-to-day issues faced by the retiring employee can be implemented. In addition, targeted succession planning, advanced hiring and mentoring programs are useful. Many utilities have commenced such programs; however, budgetary constraints have minimized their widespread implementation.

4. **Develop Competitive Compensation and Benefits Programs.** Defining a competitive compensation and benefits structure for each skill-set is another key to developing a successful recruiting and retention strategy. Regular salary and benefits review, sign-on-bonus programs and analysis of competitors’ compensation strategies must be undertaken to stay current and attractive for employees and potential candidates. With baby boomers retiring and fewer engineers graduating from American colleges, the market forces presently favor the candidate. The rapid emergence of dual-income families has made the recruiting process even more lengthy and time-consuming. It is, therefore, critical for utilities to create a workforce environment that recognizes the changing needs of the next generation. The following are popular benefits programs that can be used to entice new recruits:

- Flexible work schedules
- Job scope rotation
- Four-day, 10-hour work weeks
- Educational opportunities
- Career planning
- Stock-grants and profit sharing
- Quantifiable performance measures
- Achievable bonus structures
- Spousal employment assistance programs
- Retirements and pension programs
- Cost-of-living adjustments

5. **Use Specialized Recruitment Expertise.** Publicly available recruitment tools are effective for filling certain types of first-level positions. As positions become more specialized and unique, however, it becomes more difficult to fill the skill-sets. While it is a good first step to exhaust publicly available recruitment tools such as Internet bulletin boards, Web sites, referrals and classified advertisements, specialized recruiters can be effective, especially for technical and senior level positions. A specialized recruiter with power industry expertise can identify and prequalify candidates and skill-sets. These recruiters have technical knowledge and a current database and network of industry contacts. Their competitive intelligence, market knowledge and research skills enable them to locate high-quality executive and technical performers.

6. **Develop Programs to “Catch Them Young.”** In addition to using specialized recruiting expertise to fill immediate personnel needs, utilities...
Personnel Strategies

should plan to address the larger issue, which is the growing scarcity of engineers graduating from American colleges. Furthermore, only a small fraction of engineering graduates are lured into the power industry as they find other industry sectors more attractive. Therefore, to maintain their long-term competitiveness in the job market it becomes important for utilities to invest in power industry education programs and in schools, to actively promote math and science and expose the younger generation to the exciting challenges of working in the power industry. Such programs will also increase a utility’s profile within a local community, which can be a great way to attract new fresh talent.

A systematic approach can help overcome the loss of experienced leadership and technical talent. Several short-term and long-term initiatives must be undertaken in concert to successfully deal with plant attrition. Plant management needs to identify internal and external candidates for technical and senior power plant management positions. Succession planning should be conducted to capture and retain key knowledge and skills. Personnel strategies such as advanced hiring for key positions, attracting talent from schools and colleges and growing them within the organization should be used. In addition, offering career planning and flexible work schedules and using temporary staff augmentation on contract assignments can help mitigate some of these operational challenges.

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