INDIVIDUAL ATTITUDES TOWARDS SAFETY: AN EXPLORATION

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Mr. Coleman has held several technical, engineering and leadership positions at Brookhaven National Laboratory (BNL) after serving six years in the United States Navy as a Nuclear Reactor Operator. Over the past 19 years, he was a Reactor Operator at the BNL high Flux Beam Reactor; Facilities Operations and Support Project Engineer and Operations Manager for BNL’s Waste Management Division. Prior to his current role as the Manager of the Radiological Control Division, Mr. Coleman served as BNL’s Integrated Safety Management Program Manager.
PRESENTATION OVERVIEW

- Background of Safety Attitude Research
- Purpose behind the Research
- Research Questions
- Sample Population
- Survey Instrument & Methodology
- Findings/Conclusions/Recommendations
- Questions and Answers
In November 2007 – Office of Environment, Safety & Health Evaluations found:

“BNL Managers and Supervisors have not always ensured that established safety controls are implemented by workers…”

In 2009 – Liberty Mutual Research Institute for Safety reported “U.S. workplace injuries, illnesses and accidents direct costs topped $48.6 billion.”
PURPOSE BEHIND THE RESEARCH

- Determine the relationship between nontechnical and technical employee attitudes towards safety based on age, gender and education.
RESEARCH QUESTIONS

1. What is the relationship between technical and nontechnical employee age and attitudes towards safety?
2. What is the relationship between technical and nontechnical employee educational background and attitudes towards safety?
3. What is the relationship between technical and nontechnical employee gender and attitudes towards safety?
4. What correlations exist between technical and nontechnical employee attitudes towards safety?
Employee Safety Inventory (ESI) developed by Vangent, Incorporated was administered to 500 Brookhaven National Laboratory (BNL) employees (250 nontechnical/250 Technical)
SURVEY INSTRUMENT & METHODOLOGY

- ESI survey instrument – Validity and Reliability
- Measurement Dimensions
  - Risk Avoidance
  - Safety Control
  - Stress Tolerance
  - Safety Attitude Index
- Quantitative Correlational Analyses
 FINDINGS/CONCLUSIONS

- No significant differences between nontechnical and technical employee attitudes towards safety based on age, education or gender was found.
- Three Significant Findings Noted:
  1. **AGE** - 25-34 years age group for both technical and nontechnical employees were more likely to engage in dangerous, thrill seeking and high risk behaviors than the other age groups
  2. **STRESS** - Technical employee scores revealed that they are more able to cope with stress than nontechnical employees
  3. **RISK** - More than 85% of both Technical and Nontechnical employees reported “Moderate to High Risk” Attitudes Towards Safety.
Comparison of Safety Attitude Categories

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<tr>
<th></th>
<th>High Risk</th>
<th>Moderate Risk</th>
<th>Low Risk</th>
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<tbody>
<tr>
<td>Technical Employees</td>
<td>19.6%</td>
<td>67.4%</td>
<td>13.0%</td>
</tr>
<tr>
<td>Nontechnical Employees</td>
<td>17.6%</td>
<td>67.3%</td>
<td>15.2%</td>
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RECOMMENDATIONS FOR LEADERSHIP

A Culture Where Safety is the Number One Organizational Value

- Attitudes towards safety and leadership behaviors are known and acceptable

LEADERSHIP ATTITUDES AND BEHAVIORS

Organizational Attitudes/Behaviors and Culture

Management Attitudes & Worker Relationships

Diversity and Individual Differences (e.g., Gender, Ethnicity, Education)
RECOMMENDATIONS FOR LEADERSHIP

- Leaders must take a proactive approach:
  - Organizational leaders should seek leaders that not only have leadership/technical skills but who also have “safety attitudes” that infuse and shape the organizations culture.
  - Employ strategies that identify safety attitudes prior to hiring/placing/promoting employees to leadership positions – “Assess Safety Attitudes as a prerequisite”
STUDY LIMITATIONS

- BNL employees on site for 3 or more years. Time and resource constraints limited the study to one DOE National Laboratory.
- Assessed attitudes rather than actual safety practices employed.
- Employment categories grouped into Nontechnical and Technical employees.
SUGGESTIONS FOR FUTURE RESEARCH

- Consider examining how individual safety attitudes correlate with safety performance (e.g., injury, illness, accidents...)
- Consider populations from other research and development/DOE National Laboratories to further test individual attitudes towards safety
- Consider exploring how leadership and management behaviors relate to employee affective commitment
REFERENCES

Brookhaven National Laboratory (2007, November). DOE HS-64 Evaluation of Environment, Safety and Health Programs at BNL.


“Titles are granted, but it’s your behavior that wins you respect... Exemplary leaders know that if they want to gain commitment and achieve the highest standards, they must be models of behavior they expect of others. Leaders model the way” (Kouzes & Posner, 2007, p. 15).