OVERVIEW

• Survey on Encountering Ethical Issues
• Source of Engineering and Government/Military Ethics
• Case Studies of Ethical Issues
• Organizational Culture and Best Practices
SURVEY

Robert McGinn – The Ethical Engineer

• 86% of undergraduate students expected to face ethical issue during career

• Greater than 50% responded they are not prepared by the education system to face ethical issues
SURVEY

Robert McGinn – The Ethical Engineer

• 84% of practicing engineers expected students to face ethical issue during career
• 65% practitioners faced an ethical issue
• 92% agree education should include ethics
SOURCE OF ETHICS

• Society
  ➢ Ethics is defined as moral principles that govern a person’s behavior or the conducting of an activity
  ➢ Engineers must be socially responsible due to public safety, health and welfare implications of their profession
  ➢ Governmental service is a public trust
  ➢ Responsibility enforced through criminal statutes, regulations, engineer licensing, engineering societies and civil liability
SOURCE OF ETHICS

• Criminal Statutes
• Office of Government Ethics Regulations
• DoD Regulations and Directives
• FAR provisions
• State Engineer Licensing Regulations
SOURCE OF ETHICS

• Public Trust requires employees to place loyalty to the Constitution, the laws and ethical principles above private gain
• DoD personnel shall perform their official duties lawfully and comply with the highest ethical standards
• Government contractors shall promote an organizational culture that encourages ethical conduct and a commitment to compliance with the law
• Nebraska engineers shall safeguard life, health, property, and promote the public welfare
• Corp of Engineers Seven Principals of “Green Ethics”
COMPETING PRESSURES

- Clients / Delivery Methods
- Employers and Colleagues
- Competitors
- Costs / Financial Feasibility / Time
- Internal Pressures
  - Desire to do the “right thing”
  - Dislike of conflict
  - Fear of being wrong, overly cautious, squeaky wheel, etc.
  - Wanting to keep clients happy because they’re paying the family bills
REAL LIFE EXAMPLES

2010 Deep Water Horizon

2003 Columbia Foam Hit Wing
Corporations understandably encourage cost-saving and efficiency. But, given the dangers of deepwater drilling, companies involved must have in place strict policies requiring rigorous analysis and proof that less-costly alternatives are in fact equally safe. If BP had any such policies in place, it does not appear that its Macondo team adhered to them. Unless companies create and enforce such policies, there is simply too great a risk that financial pressures will systematically bias decision-making in favor of time- and cost-savings.
"[M]anagement systems were marked by poor communications among BP, Transocean, and Halliburton employees regarding the risks associated with decisions being made. The decision making process on the rig was excessively compartmentalized, so individuals on the rig frequently made critical decisions without fully appreciating just how essential the decisions were to well safety... As a result, officials made a series of decisions that saved BP, Halliburton, and Transocean time and money – but without a full appreciation of the associated risks."
EXAMPLE BP DEEPWATER HORIZON

- *Deepwater Horizon*: 46% of crewmembers feared retaliation for reporting unsafe situations. This was a few weeks before the accident.
EXAMPLE COLUMBIA DISASTER

- **Words on the Page:** Every employee can stop an operation at the “mere glimmer of a problem.”

- **Reality:** “There were many engineers and managers up and down the chain of command who had an opportunity to lodge an objection. While concerns were raised in some quarters, no one stood up and publicly challenged the conclusions of the engineering analysis.” (CBS News)
EXAMPLE COLUMBIA DISASTER

Employees were praised for finding “days of margin.” No one at NASA wanted to say the date couldn’t be met or that there weren’t enough resources to do what needed to be done in the time allocated.
EXAMPLE WHISTLEBLOWING
(NSPE BER CASE 82-5)

Engineer – Employed by large industrial company
Government Defense projects
Engineer- duties included the of review subcontractor submittals for compliance
Determines a deficiency and advises management to reject with a proposed redesign for improvements to decrease cost and time delays- save taxpayer money
Management rejects Engineer’s proposal, but Engineer continues to urge redesign
Engineer sanctioned by Employer- probation
Example Whistleblowing
(NSPE BER Case 82-5)

NSPE Board Review question: Does Engineer have ethical obligation, or ethical right to continue his efforts to secure change in the policy of his employer or to report his concern to proper authority?

1. Did deficiency deal with protection of safety, health, property, welfare of the public?
2. Compared to prior case involving unsafe product. - Refusal to participate and duty to report.
3. Compared to engineers who disagreed with management about a re-design of a product not involving public health/safety.
Example Whistleblowing (NSPE BER Case 82-5)

- BER conclusion:
- Could dismiss outright as not dealing with Public health and welfare.
- No ethical obligation to continue to push the issue or report, but an ethical right to do so as a matter of personal conscience.
EXAMPLE ENGINEER TRANSITION OF EMPLOYMENT (NSPE BER CASE 06-9)

❑ Engineer takes another job
  • Client files – used in employment
  • Technical Files – used in employment
  • Personal Files – correspondence from clients acknowledging appreciation of work / technical data obtained outside of employment

WHAT CAN ENGINEER TAKE TO NEW JOB?
EXAMPLE CONFIDENTIALITY OF COMPETITOR INFORMATION SUBMITTED TO GOVERNMENT AGENCY (NSPE BER CASE 15-8)

• Gov’t Engineer has access to proprietary design information provided by Company X seeking approval from the government agency for facility designs.

• Engineer ends government service and accepts private engineering job with Company Y which is a direct competitor of Company X
EXAMPLE CONFIDENTIALITY OF COMPETITOR INFORMATION SUBMITTED TO GOVERNMENT AGENCY (NSPE BER CASE 15-8)

• What is the design employees ethical obligations?
• Can accept job if:
  – No disclosure of confidential or proprietary information learned about Company X during government employment
  – Makes the obligation clear to Company Y prior to acceptance of position
EXAMPLE ETHICAL OBLIGATIONS AS A MEMBER OF THE U.S. MILITARY (NSPE BER CASE 06-8)

• Engineer mobilized/deployed as a design engineer to use her civilian skills and judgment as a professional engineer.

• Engineer is subject to Military law (ex. UCMJ) which exempts her from civil liability.

• Does the engineer continue to have ethical obligations under the NSPE Code of Ethics as a member of the military?
Example Ethical obligations as a member of the U.S. military (NSPE BER case 06-8)

• Conclusion: Engineer has a right to raise issues of professional concern, but is legally restricted as a member of the military and does not have option to resign or to report to an external entity.
• BER – military law applies and regulates engineers behavior, not the NSPE code.
ORGANIZATIONAL CULTURE

• “[T]he shared values, attitudes, standards, and beliefs that characterize members of an organization and define its nature.”

ORGANIZATIONAL CULTURE

• Rewarding Commitment to Professional Ethics:
  – Are workers able to raise questions and identify potential problems?
  – Is there a free flow of information throughout all levels of the project team?
  – Are workers confident in their ability to raise issues without fear that they will be seen as trouble-makers who aren’t loyal to the organization?
BEST PRACTICES

• Clear, written policies and procedures need to exist

• Do the policies emphasize:
  – Legal Compliance
  – Attention to the safety/welfare of all
BEST PRACTICES

• Clear, written policies and procedures need to exist that match reality.
  – Words on a page that don’t match reality = lawyers’ nightmares/dreams
  – It’s important that policies encouraging employees to speak up actually mean something.
  – Key Question: Are discussions about risk “normal” and questions treated with respect?
BEST PRACTICES

• Risk of Poor Communication Lines:
  – You may think that you’ve explained critical information, but not everyone who needs to know it knows it.
  – You may not have all the information you need to properly evaluate risk.
  – You may “give up” trying to communicate because you feel that your concerns will go unheard and/or the process is so difficult/slow.
  – External communication applies to all above.
BEST PRACTICES

• An organization’s culture is the difference in whether...
  – Clients receive a falsely inflated bill.
  – Designs are improperly altered or modified.
  – An architect/engineer properly supervises and reviews the work he or she is sealing.
  – Employees feel empowered to speak up.
  – Management/Owners learn of situations before they hit the news.
BEST PRACTICES

• Key Questions to Consider:
  – Do employees see upper level managers and owners making decisions that reflect a commitment to ethics and public safety?

  – Are employees rewarded for raising questions and areas of concern early on in a project’s life cycle?

  – Do written policies/procedures reflect reality?
QUESTIONS??

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