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**ATTACHED ARE SLIDES/HANDOUTS
WHICH WERE PRESENTED AT THE
PROBABILISTIC SAFETY ASSESSMENT 2015
CONFERENCE**

Attitudes & Beliefs Regarding PRA Where Are We Now?

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Factors Causing a Negative Perception

Change is always difficult

- * Most risk-informed programs change an existing program
- * I am comfortable with the existing program (been doing this for 30 years and never had a problem)
- * Why “fix” it if it ain’t broke
- * My area/expertise is not important anymore

Change is even harder when it is changing something you don’t do or control

- * What is not well known is not trusted
- * I don’t trust something if what I used to do is now being controlled or influenced by something else
- * Must prove its worth/trust

Example Negative Perceptions of Risk-Informed Applications

Most risk-informed applications allow reductions from the traditional program

PRA models are not technically accurate & overly optimistic

- * Where there is a lack of experience/data, they make up numbers instead of being conservative or doing research to develop better analyses

Most complaints from the risk community relate to cost; not about making plants safer

- * What you complain about is what is really of most importance to you

The First Step is to Recognize There is a Problem

There is some truth to the perceptions

Risk community sometimes causes negative perceptions in how it handles issues

- * All PRAs use conservative approaches as simplifications to detailed analyses, especially if they do not impact the results
- * If you heard the risk community talk about “conservatism” you would think it was anathema
- * When a conservatism impacts the results, then more detailed analyses usually are needed, but that increases costs
- * Some seek “quick fixes” without developing sound technical bases, without doing research/testing

One bad experience reinforces the distrust

Implications of the Way Risk is Communicated

Most risk-informed applications use RG 1.174

- * For plants with CDF below 10^{-4} /year, RG 1.174 acceptance guidelines allow small increases in risk (very small increases if slightly above 10^{-4} /year)
- * Some applications reduce risk, but it is easier to show that they will result in no more than a small (or very small) risk increase instead of showing they reduce risk
- * What is not conveyed is the improved selection processes, better understanding of maintenance/inspection aspects, and the trade-offs of focusing on the most important items instead of treating all items equally

Do we presume these benefits are self-evident or just not needed to gain the approval?

Recent Negative Experiences are Creating New Barriers

Recent experiences are resulting in some Risk Analysts questioning the role of PRA in regulatory applications

- * Allowing fudge factors or incorrect models without a valid technical bases to be used because we want to incentivize the use of PRA
- * Research augmented by expert elicitation to get the “right” answer
- * Complaining about costs to develop the PRA, but ignoring the economic benefits (plant performance, shorter outage, not having to make modifications)
- * Using the PRA to fix problems where there is a lack of fundamental understanding (panacea)
- * Telling the traditional engineer that their concern regarding compliance is not “safety” significant, because the “risks” are low

Suggestions to Change Perceptions

Past studies on the benefits of risk-informed applications should be updated and disseminated upward and outward

Recognize this is not an either/or world, but a both/and world

- * Strive for Win-Win situations
- * Don't compromise technical integrity for expediency

Suggestions to Change Perceptions

Recognize/Admit no model or analyst is perfect

Continue to strive to improve PRAs

- * Don't create fudge factors
- * Develop sound technical bases for new methods
- * Continual improvement requires continual investment
- * Support methods with research/testing

Communicate about the uncertainties in the results/insights

- * Defense-in-Depth, Safety Margins, and Conservatism (when there is a lack of knowledge or information) are vital in having a balanced, risk-informed approach

Closing Thought on Changing Perceptions

PRA is a powerful tool that can help communication between various audiences

Recognize the different audiences when communicating
Listen to the inputs of the audiences

**Don't strive to correct the perception,
Strive to understand it and address it**

* Often it is our approach to communication that needs correction

How **Not** to Engage Negative Perceptions (Misperceptions about the Misperceptions)

Recent panel purpose addressing negative perceptions of PRA

Risk-Informed programs are increasingly being used to improve plant safety, create flexibility, and reduce unnecessary burden ... It is understood that how people and organizations react to programs impacting risk is effected by many factors including how risk information is perceived and **communicated** ... Therefore, for ensuring effective and timely transition to risk-informed programs, allowing early realization of benefits of the transition, **it is critical to address this erroneous**

perception of risk-informed programs. A couple of the first steps in this process is to develop an understanding of the factors that contribute to formation of this negative perception of risk-informed programs and to develop options for **fostering sound consideration of these programs.** The panelists in this session provide their opinion on how this perception is created and how it can be corrected

THANK YOU !!

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