



Enabling Safety Upgrades That Reduce Risk

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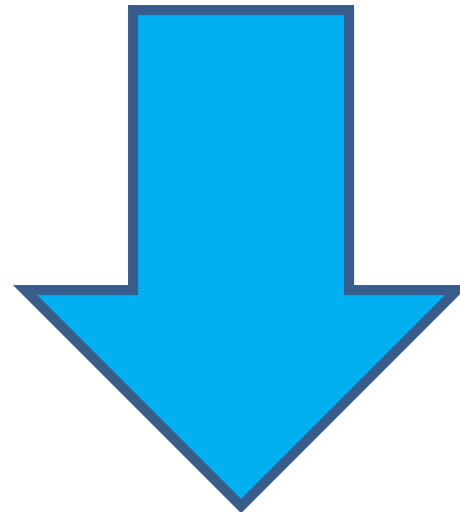
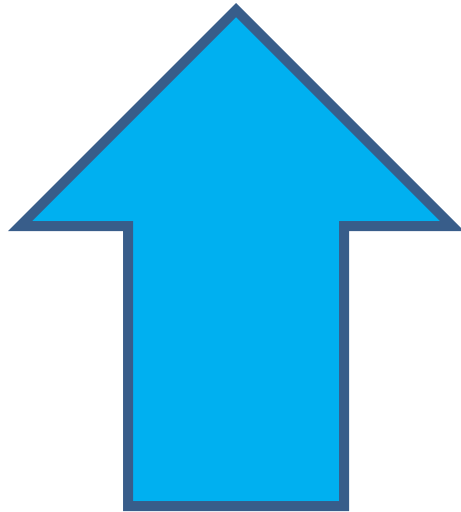
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May 11, 2017

Newton's Third Law

For every action, there is an equal and opposite reaction.



Action: Quantity and quality of operating experience increases

Reaction: Properly applied do's and don'ts decrease risks

Goal

To provide incentives for licensees to implement safety upgrades over and above minimal regulatory requirements such that safety can improve during reactor operating lifetimes.

Real Goal

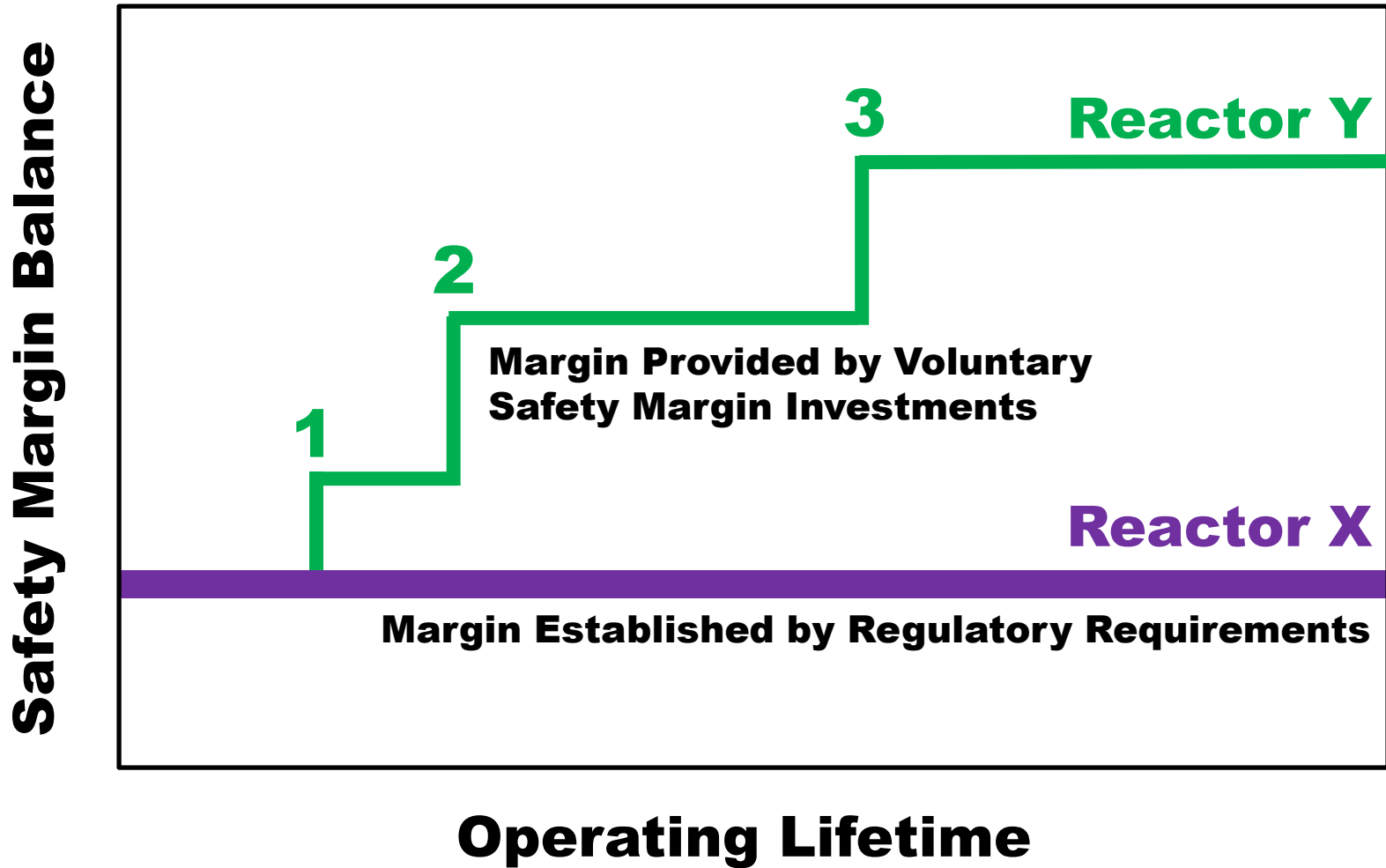
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What to Avoid

Non-vetted and/or unregulated voluntary safety margin investments must not substitute for compliance with regulatory requirements.

The NRC, its licensees and the public all have a stake in nuclear safety. No stakeholder should be excluded.

Safety Margin Bank



Safety Margin Investments

Examples of voluntary safety margins investments include:

- **installing flood alarms in switchgear rooms at Indian Point**
- **installing automatic reactor trip when ground motion nears SSE level**
- **installing filter on BWR Mark I/II containment vent path**
- **replacing ECCS pumps with ones having lower $NPSH_R$, eliminating need for containment overpressure credit**
- **providing N+3 capabilities in FLEX**
- **adopting 50.69 risk categorization**

Potential Incentives

It could be easier for Reactor Y than Reactor X to:

- **get more time to implement measures mandated by NRC**
- **get license amendment requests approved for longer LCOs and surveillance test reductions**
- **receive greater discretion in NOED space**
- **have quicker “reset” of greater-than-green findings in ROP space**
- **obtain an exemption/waiver from a new regulatory requirement**

Questions

How are values of voluntary safety margin investments appraised? When? By whom?

What regulatory oversight applies during “loans” from the safety margin bank?

What protects against safety margin bank being overdrawn?

Safety Margin Investment Appraisals

Value could be determined (SAMA process template?) when “loan” is arranged.

Licensee could identify “extra” margin to be used as collateral.

NRC could verify that “extra” margin exists and that it offsets requested need.

Regulatory Oversight

May already be established (e.g., 50.69 amendment) and thus merely sustained

Otherwise, could be set by the terms of “loan” (i.e., NRC inspection procedures x, y, and z and/or commitments)

Regulatory Oversight

Suppose Plant Y has installed seismic automatic reactor trip and wants to rely on that investment to obtain longer time to evaluate a new seismic hazard.

Licensee could commit to LCO, Actions, surveillances, etc. comparable to other trip functions.

Overdraft Protection

Each “loan” application could identify all current outstanding “loans.”

Before approving the “loan,” NRC could verify that it will not more than empty the safety margin bank.

Safety Margin Banking

Decades of operating experience and already proven processes (e.g., NOEDs, SDP, SAMA, etc.) could support the means to incentivize licensees to make safety margin investments over and above those needed for regulatory compliance.

Subsequent Safety Margin Banking

After the safety margin banking process has been developed and road-tested a few years, it might be time to examine whether “loans” could also be used to offset non-compliances with regulatory requirements.