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10 CFR Part 53: Risk-Informed, Technology-Inclusive Regulatory Framework for Advanced Reactors

Comment On: NRC-2019-0062-0012

Preliminary Proposed Rule Language: Risk-Informed, Technology-Inclusive Regulatory Framework for Advanced Reactors

Document: NRC-2019-0062-DRAFT-0107

Comment on FR Doc # 2020-24387

Submitter Information

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General Comment

Attached please find our observations and recommendations concerning the level of NRC review activities in conjunction with licensing submittals to be governed by 10CFR53

Attachments

Hybrid Pwr 10CFR53 NRC Reviews June 3 2021



US Nuclear Regulatory Commission
Mr. John Tappert
Director, Division of Rulemaking, Environmental, and Financial Support
Office of Nuclear Material Safety and Safeguards
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Subject: Development of 10CFR53 – Observation on NRC Review Efforts

We have been following the development of the proposed 10CFR53 for nearly a year and are struck by a glaring omission.

The 10CFR53 effort is ostensibly aimed at licensing modernization while employing a risk informed and performance based approach to the regulatory process. Level of risk to the public is to be presumably interwoven into the applicant's efforts required to demonstrate compliance with the law. However, a commiserate level of NRC efforts is not apparent in the rather complex and cumbersome draft of 10CFR53 thus far made public. We note effort commiserate with importance to safety has long been a key consideration in part 50 of the Code of Federal Regulations. In passing, level of risk is essentially a means to quantify importance to safety.

In our view, effort commiserate with level of risk should also drive NRC review activities involving the licensing process. We suspect internal NRC administrative guidance already contain recognition that not all considerations are equally important. However, we are proposing that 10CFR53 formalize such expectations.

More specifically, we note that there are essentially three broad levels or tiers of safety functions (Safety Related, a second tier associated Safety Related and a third tier essentially involving nuclear waste) embedded in the proposed 10CFR53. This framework provides an ideal mechanism to formally establish a hierarchy of codified expectations for NRC licensing review activities, namely:

LEVEL of RISK and NRC RESPONSIBILITIES		
<u>Safety Function Category</u>	<u>NRC Responsibility</u>	<u>NRC Level of Effort</u>
Safety Related	Approve	Rigorous NRC independent validation, as deemed appropriate by NRC, that applicant has convincingly demonstrated that the design, construction and operation of the facility will, with a high level of confidence, support the top tier safety functions.
Impacts Safety Related	Accept	NRC reaching sound conclusion that the applicant has properly demonstrated that the design, construction and operation of the facility will properly support the second tier safety functions.
Nuclear Waste	No Objection	NRC reaching overview assessment that the applicant has properly demonstrated that the design, construction and operation of the facility will reasonably support third tier safety functions.

This approach is based on passively fail-safe advanced reactor designs. To the extent that 10CFR53 is applied to other types of reactors (a huge strategic mistake, in our view), then 10CFR53 should include provisions that, for passively fail-safe advanced reactors, the NRC is committed to the simpler path we are proposing. Absent some form of formal



NRC 10CFR53 draft

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constraints on NRC efforts, then the applicant is faced with an exceptionally high level of uncertainty and apprehension as to ultimate costs to obtain a license, further fanning fears that more than \$1/2 billion will be required to obtain a license. Such costs are utterly unjustified for passively fail-safe designs.

We hope that the NRC will seriously consider our proposal.

This letter and our earlier correspondence form elements of an alternate and significantly less costly solution to that being pursued by the NRC to achieve licensing modernization by creating material changes to the Code of Federal Regulations. Our approach can be characterized as an evolutionary adaptation and modification of the existing rather than the disruptive and expensive restructuring approach envisioned by the NRC staff.

Regards,

Michael F. Keller, P.E. (Kansas)

President

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