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Docket: NRC-2019-0062

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-0127

Comment on FR Doc # 2020-24387

Submitter Information

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Organization: Hybrid Power Technologies LLC

General Comment

Reference 1 was presented as part of a June 10 external stakeholder's public meeting on 10CFR53. Attachment (1) provides comments and a major complaint that is summarized below:

A. The subject proposed 10CFR53 indisputably contains extensive new codified requirements that, unquestionably, have no counterpart in current statutes and undoubtedly represent attempts by the NRC staff to modify existing law to add new staff requirements, staff guidance and staff desires.

B. As we have pointed out in numerous formal correspondences, reverting to references to the applicable existing CFR sections, with appropriate clarifications, is the most effective and least cost method to effect changes to the Code of Federal Regulations. The NRC Commissioners have made a similar observation.

C. The NRC staff has apparently ignored directives for public involvement, as contained in the relevant Congressional Act, NRC public policy, and NRC Commissioner's memoranda.

D. The NRC staff's approach is unlikely to result in a "high-quality, thoroughly vetted regulation", contrary to the NRC Commissioner's directive.

E. As an advanced reactor developer, Hybrid Power Technologies LLC has standing in this matter.

F. Hybrid Power Technologies LLC stands to be heavily financially damaged by a 10CFR53 created by the NRC staff's unwarranted approach that is of suspect legality.

This letter constitutes notification of an emerging legal issue.

We remain hopeful that a proper 10CFR53 will be the end result of the ongoing development efforts.

Reference:

1. ML21148A062 - Rulemaking: Proposed Rule: Preliminary Rule Language for the Part 53 Rulemaking: Subparts A, B, C, D, E, and F - "Requirements for Operation"-10 CFR 53.820 and 53.830, and Part 73, "Physical Protection of Plants and Materials"-73.100, 73.110, and 73.120

Attachment:

(1) Hybrid Power Technology LLC Comments of July 13, 2012 on Proposed Subpart A-F 10CFR53 June 1, 2021

Attachments

Hybrid Power letter of July 13 2021 10CFR53

July 13, 2021
10CFR53 Subparts A-F



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: Hybrid Power Technologies LLC Input on the NRC Rulemaking Plan on, Risk-Informed, Technology-Inclusive Regulatory Framework; Proposed 10CFR53.

Mr. Tappert:

Reference 1 was presented as part of a June 10 external stakeholder's public meeting on 10CFR53. Attachment (1) provides comments and a major complaint that is summarized below:

- A. The subject proposed 10CFR53 indisputably contains extensive new codified requirements that, unquestionably, have no counterpart in current statutes and undoubtedly represent attempts by the NRC staff to modify existing law to add new staff requirements, staff guidance and staff desires.
- B. As we have pointed out in numerous formal correspondences, reverting to references to the applicable existing CFR sections, with appropriate clarifications, is the most effective and least cost method to effect changes to the Code of Federal Regulations. The NRC Commissioners have made a similar observation.
- C. The NRC staff has apparently ignored directives for public involvement, as contained in the relevant Congressional Act, NRC public policy, and NRC Commissioner's memoranda.
- D. The NRC staff's approach is unlikely to result in a "high-quality, thoroughly vetted regulation", contrary to the NRC Commissioner's directive.
- E. As an advanced reactor developer, Hybrid Power Technologies LLC has standing in this matter.
- F. Hybrid Power Technologies LLC stands to be heavily financially damaged by a 10CFR53 created by the NRC staff's unwarranted approach that is of suspect legality.

This letter constitutes notification of an emerging legal issue.

We remain hopeful that a proper 10CFR53 will be the end result of the ongoing development efforts.

Regards,

Michael F Keller

Michael F. Keller Professional Engineer – State of Kansas
President
Hybrid Power Technologies LLC

July 13, 2021
10CFR53 Subparts A-F



Reference:

1. [ML21148A062](#) - Rulemaking: Proposed Rule: Preliminary Rule Language for the Part 53 Rulemaking: Subparts A, B, C, D, E, and F -"Requirements for Operation"-10 CFR 53.820 and 53.830, and Part 73, "Physical Protection of Plants and Materials"-73.100, 73.110, and 73.120

Attachment:

- (1) Hybrid Power Technology LLC Comments of July 13, 2012 on Proposed Subpart A-F 10CFR53 June 1, 2021

In conjunction with a June 10 external stakeholder's public meeting on 10 CFR53, the following was presented:

[ML21148A062](#) - Rulemaking: Proposed Rule: Preliminary Rule Language for the Part 53 Rulemaking: Subparts A, B, C, D, E, and F -"Requirements for Operation"-10 CFR 53.820 and 53.830, and Part 73, "Physical Protection of Plants and Materials"-73.100, 73.110, and 73.120

Our complaints, comments and observations follow:

1. **Complaint.** In their entirety, Subparts A through F should be replaced by key topic areas that simply reference the corresponding applicable existing CFR, with clarifications as necessary to effect risk informed simplifications to the existing 10CFR regulations.

Basis for Complaint. The subject subparts to 10CFR53 indisputably contain extensive new codified requirements that, unquestionably, have no counterpart in current statutory regulations and undoubtedly represent attempts by the NRC staff to modify existing law to add new staff requirements, staff guidance and staff desires. In the context of advanced reactors in general and passively fail-safe advanced reactors in particular, the staff's efforts are a clear abuse of discretion by an agency proposing major changes to the Code of Federal Regulations.

As the staff's unsuitable motives are quite clear, attempting to ferret out all the staff's numerous new and unjustified inclusions becomes a massive whack-a-mole game. We do not have the time or patience to engage in such monumentally time intensive efforts, particularly as we have provided numerous germane comments that have been apparently ignored by the NRC staff.

As we have pointed out in numerous formal correspondences (see our earlier comment submittals in regulations.gov under docket NRC-2019-0062) reverting to references to the applicable existing CFR sections, with appropriate simple clarifications, is the most efficient method to implement changes to the Code of Federal Regulations. Further such an approach is the most expeditious and efficient method to clean out the infestation of new requirements improperly promulgated by the NRC staff. Reliance on references to the existing CFR (with applicable simple modifications) is also the most effective and least cost method to make major changes to the Code of Federal Regulations to implement a new Congressional Law – see PUBLIC LAW 115–439—JAN. 14, 2019, Nuclear Energy Innovation and Modernization Act.

Further, unlike the NRC staff developed complicated draft 10CFR53, the approach we have consistently advocated is high-level in nature, consistent with the October 2, 2020 memorandum from the NRC Commissioners: subject: STAFF REQUIREMENTS – SECY-20-0032 - RULEMAKING PLAN ON “RISK-INFORMED, TECHNOLOGY-INCLUSIVE REGULATORY FRAMEWORK FOR ADVANCED REACTORS (RIN-3150-AK31; NRC-2019-0062)”

As an advanced reactor stakeholder with a patented innovative nuclear technology, we have standing in this matter. We have, in good faith, reviewed and provided comments as well as feedback throughout the entire 10CFR53 development effort. As near as we can surmise, none of our extensive public comments have been addressed. We are not alone in having this perception, as many of the other developers have publically stated the same concern/complaint.

The following are relevant to the current situation:

- a. From the NRC website, Public Meetings and involvement:

“The NRC considers public involvement in, and information about, our activities to be a cornerstone of strong, fair regulation of the nuclear industry. We recognize the public's interest in the proper regulation of nuclear activities and provide opportunities for citizens to be heard. We encourage your participation and comments” {HybridPwr emphasis}

- b. From the referenced Public Law 115-439

“REPORT TO COMPLETE A RULEMAKING TO ESTABLISH A TECHNOLOGY-INCLUSIVE REGULATORY FRAMEWORK FOR OPTIONAL USE BY COMMERCIAL ADVANCED NUCLEAR REACTOR TECHNOLOGIES IN NEW REACTOR LICENSE APPLICATIONS AND TO ENHANCE COMMISSION EXPERTISE RELATING TO ADVANCED NUCLEAR REACTOR TECHNOLOGIES ...

(1) REPORT REQUIRED.—Not later than 30 months after the date of enactment of this Act, the Commission shall submit to the appropriate congressional committees a report (referred to in this subsection as the “report”) for— ...

(2) COORDINATION AND STAKEHOLDER INPUT.— In developing the report, the Commission shall seek input from the Secretary, the nuclear energy industry, a *diverse set of technology developers*, and other public stakeholders.” *{HybridPwr emphasis}*

- c. From the earlier referenced NRC Commissioners memorandum:

“The staff should implement the development and intermittent release of preliminary draft rule language, followed by *public outreach and dialogue*, and then further iteration on the language until the staff has established the rudiments of its proposed rule for Commission consideration”. *{HybridPwr emphasis}*

... The staff should accelerate its timeline while balancing the need to produce a high-quality, thoroughly vetted regulation. {HybridPwr emphasis}

The NRC staff’s actions can hardly be construed as “fair regulation” in the context of NRC’s public website statement. Ignoring stakeholder and public formal input can hardly be construed as compliance with explicit Congressional direction involving “coordination of stakeholder input”. Ignoring stakeholder formal input using one-way communications can hardly be construed as conforming to the NRC Commissioner’s directive for “public outreach and dialog.” Ignoring stakeholder formal input can hardly be construed as conforming to the NRC Commissioner’s directive to achieve a “high quality and thoroughly vetted regulation”.

We readily acknowledge that disagreements between parties often exist but are resolvable if all parties act in good faith. However, the utter lack of any feedback from the NRC is: (1) inherently astoundingly poor public policy, (2) of doubtful good faith, (3) and does not instill confidence in the NRC staff’s objectivity or fairness. **The NRC executive management/Commissioners need to intervene and direct that the NRC staff to comply with the Congressional Act.**

For the record, we are stating that we will be heavily financially damaged by the NRC staff’s current path involving unwarranted and extensive regulatory overreach that appears to be of doubtful legality. Our innovative and passively fail-safe advanced reactor technology (that

represents a profound strategic energy advantage for the U.S.) will simply wither and die on the vine because of utterly unjustified and unaffordable regulatory costs.

As a small business, we are much more heavily impacted by improper NRC staff actions than larger firms. Such firms have access to extensive sums of capital, including taxpayer money provided by DOE grants that can be (and has been) used to cover large portions of the licensing costs. As such, the larger firms are somewhat desensitized to licensing costs. However, the DOE cost-share mandates effectively preclude small businesses participation in the DOE nuclear grant process because small firms do not possess the necessary capital to cover the cost share.¹ As such, excessive NRC staff's actions are particularly troubling to small businesses, and improper staff actions are more or less lethal.

We hope a more rational approach, consistent with the Congressional Act, established law, and directions from the NRC Commissioner will emerge from the evolving 10CFR53 development effort. We have no particular desire to pursue legal remedies. However, we have no intention of standing idly by and see advanced reactors aborted by the NRC staff as the result of completely unwarranted and stunningly expensive new regulatory complexities generated by a NRC staff determined to unilaterally impose their will on the licensing of advanced nuclear reactors.

2. **Section 53.01 thru 53.120.** Simply reference existing CFR with applicable clarifications.
Basis for Comment. See complaint 1. In passing, why not just use the NRC definition for Defense in Depth instead of attempting to indirectly add more inferred requirements? Also, Safety-Related is well defined in the existing CFR; the NRC staff is clearly attempting to add unjustified new territory to the definition of Safety-Related.
3. **Section 53.200 Safety Objectives.** Delete in entirety and replace with “50.001 Basis, Purpose and Procedures Applicable. - See 10CFR50.1”.
Basis for Comment. See comment 5 below.
4. **Section 53.200 Safety Objectives,** replace with following: “53.200 Safety Criteria” then use text in of “(a)” and “(b)”
Basis for Comment. See comment 5 below.
5. **Section 53.220, Second Tier Safety Criteria.** Delete in entirety throughout **all** of subparts A through F and any and all other sections of the proposed 10CFR53.
Basis for Comment. See complaint 1. There is virtually no precedence for this painfully unwarranted and obvious regulatory overreach and ratcheting. Modify Section 53.200 “Safety Criteria” to add subparagraph to the effect that appropriate measures, consistent with the advanced reactor’s level of risk, are to be provided to protect the public from undue radiation. This area is dependent upon the type of advanced reactor and as such the designer needs to identify the measures they intend to deploy as well as the dose and risk frequency targets they intend to meet.

We further note the NRC staff appears to be attempting to equate tier 1 and tier 2 safety criteria. There is absolutely no logical basis or legal precedence for such obvious regulatory overreach and damaging ratcheting. Considering the vastly different levels of risk, equating the two safety

criteria is not logically rational or defensible. A better approach is to put the onus on the advanced reactor developers to justify their design relative to offsite radiation releases well below those considered hazardous.

We have previously formally made this comment, see Regulations.gov

6. Section 53.250 Defense in Depth. Limit applicability to features employed to avoid hazardous radiation releases.

Basis for Comment. See complaint #1. There is no regulatory precedence for employing Defense in Depth with public exposure caused by undue (but not hazardous) radiation releases from the facility.

7. Section 53.250 Protection of Plant Workers. Simply refer to 10CFR20 Subpart C.

Basis for Comment. See complaint# #1

8. Section 53.400, Design Features. Simply refer to 10CFR50 Appendix A, with appropriate clarifications to generalize the design criteria.

Basis for Comment. See complaint #1. There is no precedence in the existing CFR for such extensive regulatory overreach and ratcheting with respect to design activities. Merely note design activities should be commiserate with the level of risk associated with the applicable safety function.

We have previously formally made this comment, see Regulations.gov

9. Section 430 Design Criteria for Protection of Plant Workers. Reference existing CFR with appropriate clarifications.

Basis for Comment. See Complaint #1. We have previously made this comment, see regulations.gov.

10. Section 53.450 PRA. A PRA is not necessarily required to identify SSC's; and alternate approaches should be also allowed.

Basis for Comment. A mechanistic approach is used with Safety-Related SSC's. We have suggested such an approach for other SSC categories in earlier formal comments and we have proved the viability of a mechanistic approach in our book Hybrid Nuclear Energy Systems, incorporated into the public record through comments submitted pursuant to regulations.gov.

We note Safety-Related SSC's do not require the use of a PRA.

11. Section 53.500 Siting Requirements. Simply refer to corresponding section of existing CFR.

Basis for Comment. See complaint #1.

12. All sections involving Quality Assurance (including 53.610 Construction, 53.620 Manufacturing, 53.840 Operations). For non-Safety-Related SSC, use a single subpart to broadly list basic quality assurance categories with the applicable scope and assurance specifics germane to SSC to be provided by and justified by the licensee/applicant.

Basis for Comment The need for and extent of specific quality assurance and quality control measures is highly dependent on specific design functions considered appropriate by the designer. The specific design functions are highly dependent upon the design of the particular

advanced reactor. Further the reach of appropriate assurance measures into design, manufacturing and construction activities and organizations is highly dependent on the assurance measures considered necessary by the plant designer to support the safety functions specified by the designer. We have previously made similar comments several times – see regulations.gov

We have previously proved, in detail, in our book **Hybrid Nuclear Energy Systems** how the proposed graded assurance approach can be specifically implemented. Our book has been made part of the public record by regulations.gov. At this point, remains unclear if the NRC staff has even bothered to review our approach, as we have specifically requested in our earlier correspondence, see regulations.gov.

See complaint #1. The NRC staff is clearly engaged in a massive and improper bureaucratic overreach

- 13. 53.500 Siting Requirements, 53.600 Construction and Manufacturing, 53.700 Operational Objectives, 53.800 Programs.** Delete these sections in their entirety. Simply refer to applicable key topical sections of existing Code of Federal Regulations, with appropriate clarifications.

Basis for Comment. See complaint #1.

ENDNOTES:

1. The DOE cost share stipulation arises from the 2005 Energy Act. However, section 988 of that same Act allows the Secretary of Energy to waive the cost share. Hybrid Power Technologies has formally made that request in conjunction with general initial small business nuclear technical development activities. That request has never been specifically addressed.