

PUBLIC SUBMISSION

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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-0231

Comment on FR Doc # 2020-24387

Submitter Information

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General Comment

The attached letter from Hybrid Power Technologies LLC proposes replacing the proposed complex existing 10CFR53 format/index to correspond the 10CFR50/52 index.

Attachments

HybPwr to NRC March 7 2022 10CFR53 Format

Michael F. Keller
President
Hybrid Power Technologies LLC

March 7, 2022
Proposed 10CFR53: Simpler Format



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 - NRC Rulemaking Plan Proposed 10CFR53.

Mr. Tappert:

REF. [1] was released in early February 2022 as a consolidated version of the proposed 10CFR53. The document is exceptionally difficult to review and understand, particularly relative to divining the existence of new requirements that are well beyond the current provisions of both the parent 10CFR50 and 52 that currently govern licensing of the commercial nuclear power plants – see **REFS. [2]** and **[3]**.

As we and others have consistently maintained for some time, the existing 10CFR50/52 are readily adapted to accommodate the **REF. [4] Modernization Act**. More to the point, the various main sections of 10CFR50/52 can easily serve as the framework for the proposed 10CFR53 which would consist of two parts:

- ◆ **PART 53A - LICENSING OF ADVANCED NUCLEAR REACTORS**
- ◆ **PART 53B—LICENSES, CERTIFICATIONS, AND APPROVALS FOR ADVANCED NUCLEAR POWER PLANTS**

These parts correlate exactly to 10CFR50/52 and thus preserve the ability of an applicant to follow two distinctly different paths.

The various section headings of 10CFR50/52 would serve as corresponding topical subject matter for the proposed 10CFR53, as illustrated by the *Attachments (1)* and *(2)* indexes for 10CFR53A and 10CFR53B.

The content of a 10CFR53A & 53B sections would typically state that the provisions of corresponding 10CFR50/52 section apply, except as clarified. For example:

Appendix B to Part 53A—Quality Assurance Criteria for Nuclear Power Plants

The provisions of 10CFR50 Appendix B apply except as modified herein: quality measures shall be applied commiserate with the public's level of radiation risk.

The structure (particularly the available but unused section titles) of the existing 10CFR50/52 indexes readily accommodates any special topic areas that are considered particularly significant with respect to the **REF. [4] Modernization Act** and thus require more clarity than material currently contained in 10CFR50/52.

In closing, the approach we propose is significantly more transparent and understandable than the current intricate proposed 10CFR53.

We trust this recommendation will be helpful.

Michael F. Keller
President
Hybrid Power Technologies LLC

March 7, 2022
Proposed 10CFR53: Simpler Format



Regards,

Michael F Keller

Michael F. Keller Professional Engineer – State of Kansas

President
Hybrid Power Technologies LLC
A small US Business of the State of Kansas.

Attachments:

- (1) INDEX PART 53A - LICENSING OF ADVANCED NUCLEAR REACTORS*
- (2) INDEX PART 53B - LICENSES, CERTIFICATIONS, AND APPROVALS FOR ADVANCED NUCLEAR POWER PLANTS*

REFERENCES:

- [1]** Risk-Informed, Technology-Inclusive Regulatory Framework; Proposed 10CFR53 circa January 2022.
- [2]** Title 10 of Code of Federal Regulations (CFR) Part 50, Domestic Licensing of Production and Utilization Facilities.
- [3]** 10CFR 52 Licenses, Certifications, and Approvals for Nuclear Power Plants.
- [4]** Nuclear Energy Innovation and Modernization Act Public Law No: 115-439 (01/14/2019)

PART 53A - LICENSING OF ADVANCED NUCLEAR REACTORS

General Provisions

Sec.

53A.1 Basis, purpose, and procedures applicable.

53A.2 Definitions.

53A.3 Interpretations.

53A.4 Written communications.

53A.5 Deliberate misconduct.

53A.7 Employee protection.

53A.8 Information collection requirements: OMB approval.

53A.9 Completeness and accuracy of information.

Requirement of License, Exceptions

50.10 License required; limited work authorization.

50.11 Exceptions and exemptions from licensing requirements.

50.12 Specific exemptions.

50.13 Attacks and destructive acts by enemies of the United States; and defense activities.

Classification and Description of Licenses

53A.20 Two classes of licenses.

53A.23 Construction permits.

Applications for Licenses, Certifications, and Regulatory Approvals; Form; Contents; Ineligibility of Certain Applicants

53A.30 Filing of applications for licenses; oath or affirmation.

53A.31 Combining applications.

53A.32 Elimination of repetition.

53A.33 Contents of applications; general information.

53A.34 Contents of applications; technical information.

53A.34a Design objectives for equipment to control releases of radioactive material in effluents— nuclear power reactors.

53A.35 Issuance of construction permits.

53A.36 Technical specifications.

53A.36a Technical specifications on effluents from nuclear power reactors.

53A.36b Environmental conditions.

53A.37 Agreement limiting access to Classified Information.

53A.38 Ineligibility of certain applicants.

53A.39 Public inspection of applications.

Standards for Licenses, Certifications, and Regulatory Approvals

53A.40 Common standards.

53A.41 Additional standards for class 104 licenses.

53A.42 Additional standard for class 103 licenses.

53A.43 Additional standards and provisions affecting class 103 licenses and certifications for commercial power.

53A.44 Combustible gas control for nuclear power reactors.

53A.45 Standards for construction permits, operating licenses, and combined licenses.

53A.46 Acceptance criteria for emergency core cooling systems.

53A.46a Acceptance criteria for reactor coolant system venting systems.

53A.47 Emergency plans.

53A.48 Fire protection.

53A.49 Environmental qualification of electric equipment important to safety for nuclear power plants.

Issuance, Limitations, and Conditions of Licenses and Construction Permits

53A.50 Issuance of licenses and construction permits.

53A.51 Continuation of license.

53A.52 Combining licenses.

53A.53 Jurisdictional limitations.

53A.54 Conditions of licenses.

53A.55 Conditions of construction permits, early site permits, combined licenses, and manufacturing licenses.

53A.55a Codes and standards.

53A.56 Conversion of construction permit to license; or amendment of license.

53A.57 Issuance of operating license.

53A.58 Hearings and report of the Advisory Committee on Reactor Safeguards.

53A.59 Changes, tests and experiments.

53A.60 Acceptance criteria for fracture prevention measures.

53A.61 Fracture toughness requirements.

53A.61a Alternate fracture toughness requirements for protection against pressurized thermal shock events.

53A.62 Requirements for reduction of risk from anticipated transients without scram (ATWS) events.

53A.63 Loss of all alternating current power.

53A.64 Limitations on the use of highly enriched uranium (HEU) in domestic non-power reactors.

53A.65 Requirements for monitoring the effectiveness of maintenance at nuclear power plants.

53A.66 ~~Requirements for thermal annealing of the reactor pressure vessel.~~ [Not used]

53A.67 Accident source term.

53A.68 Criticality accident requirements.

Inspections, Records, Reports, Notifications

53A.69 Risk-informed categorization and treatment of structures, systems and components for nuclear power reactors.

53A.70 Inspections.

53A.71 Maintenance of records, making of reports.

53A.72 Immediate notification requirements for operating nuclear power reactors.

53A.73 License event report system.

53A.74 Notification of change in operator or senior operator status.

53A.75 Reporting and recordkeeping for decommissioning planning.

53A.76. Licensee's change of status; financial qualifications.

US/IAEA Safeguards Agreement

53A.78 Facility information and verification.

Transfers of Licenses—Creditors' Rights—Surrender of Licenses

53A.80 Transfer of licenses.

53A.81 Creditor regulations.

53A.82 Termination of license.

53A.83 Release of part of a power reactor facility or site for unrestricted use.

Amendment of License or Construction Permit at Request of Holder

53A.90 Application for amendment of license, construction permit, or early site permit.

53A.91 Notice for public comment; State consultation.

53A.92 Issuance of amendment.

Revocation, Suspension, Modification, Amendment of Licenses and Construction Permits, Emergency Operations by the Commission

53A.100 Revocation, suspension, modification of licenses, permits, and approvals for cause.

53A.101 Retaking possession of special nuclear material.

53A.102 Commission order for operation after revocation.

53A.103 Suspension and operation in war or national emergency.

Back-fitting

53A.109 Back-fitting.

Enforcement

53A.110 Violations.

53A.111 Criminal penalties.

Additional Standards for Licenses, Certifications, and Regulatory Approvals

53A.120 Training and qualification of nuclear power plant personnel.

53A.150 Aircraft impact assessment.

53A.155 Mitigation of beyond-design-basis events.

Appendices

Appendix A to Part 53A—General Design Criteria for Nuclear Power Plants.

Appendix B to Part 53A—Quality Assurance Criteria for Nuclear Power Plants

Appendix C to Part 53A—A Guide for the Financial Data and Related Information Required To Establish Financial Qualifications for Construction Permits and Combined Licenses

Appendix D to Part 53A [Reserved]

Appendix E to Part 53A —Emergency Planning and Preparedness

Appendix J1 to Part 53A—Containment Leakage Testing

Appendix J2 to Part 53A – Confinement Building Leakage Testing
[Example of addition to accommodate Adv. Reactor Feature]

Appendix K to Part 53A—ECCS Evaluation Models

Appendix L to Part 53A [Reserved]

Appendix M to Part 53A [Reserved]

Appendix N to Part 53A —Standardization of Nuclear Power Plant Designs: Permits to Construct and Licenses To Operate Nuclear Power Reactors of Identical Design at Multiple Sites

Appendix O to Part 53A [Reserved]

Appendix P to Part 53A [Reserved]

Appendix Q to Part 53—Pre-application Early Review of Site Suitability Issues

Appendix R to Part 50 {not used}

Appendix S to Part 53A —Earthquake Engineering Criteria for Nuclear Power Plants

Authority: Atomic Energy Act of 1954, secs. 11, 101, 102, 103, 104, 105, 108, 122, 147, 149, 161, 181, 182, 183, 184, 185, 186, 187, 189, 223, 234 (42 U.S.C. 2014, 2131, 2132, 2133, 2134, 2135, 2138, 2152, 2167, 2169, 2201, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2239, 2273, 2282); Energy Reorganization Act of 1974, secs. 201, 202, 206, 211 (42 U.S.C. 5841, 5842, 5846, 5851); Nuclear Waste Policy Act of 1982, sec. 306 (42 U.S.C. 10226); National Environmental Policy Act of 1969 (42 U.S.C. 4332); 44 U.S.C. 3504 note; Sec. 109, Pub. L. 96–295, 94 Stat. 783.

Nuclear Energy Innovation and Modernization Act Of 2019

PART 53B—LICENSES, CERTIFICATIONS, AND APPROVALS FOR ADVANCED NUCLEAR POWER PLANTS

General Provisions

Sec.

53B.0 Scope; applicability of 10 CFR Chapter I provisions.

53B.1 Definitions.

53B.2 Interpretations.

53B.3 Written communications.

53B.4 Deliberate misconduct.

53B.5 Employee protection.

53B.6 Completeness and accuracy of information.

53B.7 Specific exemptions.

53B.8 Combining licenses; elimination of repetition.

53B.9 Jurisdictional limits.

53B.10 Attacks and destructive acts.

53B.11 Information collection requirements: OMB approval.

Subpart A - Early Site Permits

53B.12 Scope of subpart.

53B.13 Relationship to other subparts.

53B.15 Filing of applications.

53B.16 Contents of applications; general information.

53B.17 Contents of applications; technical information.

53B.18 Standards for review of applications.

53B.21 Administrative review of applications; hearings.

53B.23 Referral to the Advisory Committee on Reactor Safeguards (ACRS).

53B.24 Issuance of early site permit.

53B.25 Extent of activities permitted.

53B.26 Duration of permit.

53B.27 Limited work authorization after issuance of early site permit.

53B.28 Transfer of early site permit.

53B.29 Application for renewal.

53B.31 Criteria for renewal.

53B.33 Duration of renewal.

53B.35 Use of site for other purposes.

53B.39 Finality of early site permit determinations.

Subpart B - Standard Design Certifications

53B.41 Scope of subpart.

53B.43 Relationship to other subparts.

53B.45 Filing of applications.

53B.46 Contents of applications; general information.

53B.47 Contents of applications; technical information.

53B.48 Standards for review of applications.

53B.51 Administrative review of applications.

53B.53 Referral to the Advisory Committee on Reactor Safeguards (ACRS).

53B.54 Issuance of standard design certification.

53B.55 Duration of certification.

53B.57 Application for renewal.

53B.59 Criteria for renewal.

53B.61 Duration of renewal.

53B.63 Finality of standard design certifications.

Subpart C - Combined Licenses

53B.71 Scope of subpart.

53B.73 Relationship to other subparts.

53B.75 Filing of applications.

53B.77 Contents of applications; general information.

53B.79 Contents of applications; technical information in final safety analysis report.

53B.80 Contents of applications; additional technical information.

53B.81 Standards for review of applications.

53B.83 Finality of referenced NRC approvals; partial initial decision on site suitability.

53B.85 Administrative review of applications; hearings.

53B.87 Referral to the Advisory Committee on Reactor Safeguards (ACRS).

53B.89 Reserved.

53B.91 Authorization to conduct limited work authorization activities.

53B.93 Exemptions and variances.

53B.97 Issuance of combined licenses.

53B.98 Finality of combined licenses; information requests.

53B.99 Inspection during construction.

53B.103 Operation under a combined license.

53B.104 Duration of combined license.

53B.105 Transfer of combined license.

53B.107 Application for renewal.

53B.109 Continuation of combined license.

53B.110 Termination of license.

Subpart D [Reserved]

Subpart E - Standard Design Approvals

53B.131 Scope of subpart.

53B.133 Relationship to other subparts.

53B.135 Filing of applications.

53B.136 Contents of applications; general information.

53B.137 Contents of applications; technical information.

53B.139 Standards for review of applications.

53B.141 Referral to the Advisory Committee on Reactor Safeguards (ACRS).

53B.143 Staff approval of design.

53B.145 Finality of standard design approvals; information requests.

53B.147 Duration of design approval.

Subpart F - Manufacturing Licenses

53B.151 Scope of subpart.

53B.153 Relationship to other subparts.

53B.155 Filing of applications.

53B.156 Contents of applications; general information.

53B.157 Contents of applications; technical information in final safety analysis report.

53B.158 Contents of application; additional technical information.

53B.159 Standards for review of application.

53B.161 Reserved.

53B.163 Administrative review of applications; hearings.

53B.165 Referral to the Advisory Committee on Reactor Safeguards (ACRS).

53B.167 Issuance of manufacturing license.

53B.169 Reserved.

53B.171 Finality of manufacturing licenses; information requests.

53B.173 Duration of manufacturing license.

53B.175 Transfer of manufacturing license.

53B.177 Application for renewal.

53B.179 Criteria for renewal.

53B.181 Duration of renewal.

Subpart G [Reserved]

Subpart H - Enforcement

53B.301 Violations.

53B.303 Criminal penalties.

Appendices

Appendix A to Part 53B [Not Used]

[Example of deletion to accommodate Adv. Reactor Feature]

Appendix B to Part 53B — [Not Used]

Appendix C to Part 53B— [Not Used]

Appendix D to Part 53B— [Not Used]

Appendix E to Part 53B— [Not Used]

Appendix F to Part 53B—[Not Used]

Appendices G Through M to Part 53B [Reserved]

Appendix N to Part 53B—Standardization of Nuclear Power Plant Designs: Combined Licenses to Construct and Operate Nuclear Power Reactors of Identical Design at Multiple Sites

Authority: Atomic Energy Act of 1954, secs. 103, 104, 147, 149, 161, 181, 182, 183, 185, 186, 189, 223, 234 (42 U.S.C. 2133, 2134, 2167, 2169, 2201, 2231, 2232, 2233, 2235, 2236, 2239, 2273, 2282); Energy Reorganization Act of 1974, secs. 201, 202, 206, 211 (42 U.S.C. 5841, 5842, 5846, 5851); 44 U.S.C. 3504 note.

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