



**PR 50 and 53
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Robert E. Brown
General Manager
Regulatory Affairs

P.O. Box 780 M/C A-45
Wilmington, NC 28402
USA

T 910 675 5242
F 910 362 5242
Bob.Brown@ge.com

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ANPR 10 CFR Parts 50 and 53

December 29, 2006

Secretary
U. S. Nuclear Regulatory Commission
Washington, DC 20555-0001

ATTN: Rulemakings and Adjudications Staff

Subject: Comments on NRC Advance Notice of Proposed Rulemaking (ANPR),
"Approaches to Risk-Informed and Performance-Based Requirements for
Nuclear Power Reactors," 71 Fed. Reg. 26,267 (May 4, 2006); RIN 3150-AH81

General Electric Company (GE) provides comments on the subject ANPR. GE designs and builds nuclear power reactors and would support a regulatory framework that would establish a comprehensive set of risk-informed and performance-based requirements applicable to all nuclear power reactor technologies as an alternative to current regulatory requirements. A technology-neutral framework, once in place, could provide more certainty and predictability in the licensing process for a new reactor based on non-light water designs. Nevertheless, until such a framework is developed, the NRC can evaluate the safety of a non-light water reactor under existing regulations on a case-by-case basis, using a combination of deterministic criteria and risk insights.¹

¹ See, e.g., NUREG-1368, "Preapplication Safety Evaluation Report for the Power Reactor Innovative Small Module (PRISM) Liquid-Metal Reactor" (Feb. 1994), which describes the NRC Staff's approach for using and building upon applicable existing regulations and guidelines for safety that were developed for light water reactors, and developing additional criteria where necessary to address the unique characteristics of the design and to assess the design for enhanced safety in light of NRC's policy on advanced nuclear power plants (see 51 Fed. Reg. 24,643 (July 8, 1986)). In addition, in 1963, the NRC licensed Fermi 1, a sodium-cooled fast reactor, under 10 CFR Part 50 (Docket No. 50-016), and in 1973, the NRC licensed Fort St. Vrain, a high-temperature, gas-cooled reactor, under 10 CFR Part 50 (Docket No. 50-267).

GE commends the NRC on the effort to develop a risk-informed, performance-based regulatory framework for advanced reactors. Although the NRC suggests that some aspects of the effort may have application to currently operating plants, the benefits would appear to be most apparent for licensing new reactors, with an integrated approach to the use of risk assessment in design and licensing analyses. Further, the integrated approach (*i.e.*, integration of safety, security, and emergency planning) may differ sufficiently from the current risk-informed decision-making process to warrant separate, but similar, guidance rather than revisions of current guidance that applies to operating reactors licensed under 10 CFR Part 50. Finally, with the various types of reactors that are being and may be developed in the future, the regulations should establish high-level criteria, with the implementing details in regulatory guidance, which may address both technology-neutral aspects and technology-specific features of different designs. Such an approach could provide the necessary level of flexibility to accommodate a range of designs, while continuing to establish criteria for safety, security, risk goals, and protection of public health and safety, and to allow for advancements in risk assessment techniques through revisions to regulatory guidance rather than rulemaking.

While GE generally agrees with the proposed plan outlined in the ANPR, GE also agrees with comments developed by the Nuclear Energy Institute (NEI) which suggest developing a preliminary framework and, upon receiving an application for a non-light water reactor design certification, using the preliminary framework in concert with regulations in 10 CFR Parts 50 and 52 for review of the application and identification of those existing regulations which would not apply to the design. This initial application would provide a base case for development and refinement of a proposed rule, and could demonstrate whether the regulatory framework can be structured as technology neutral, or if it would need to be technology specific in some respects.

GE also agrees generally with NEI's responses to the questions in Sections A through J in the ANPR, and does not address herein each question. The questions evidence the need for further stakeholder input, as suggested in the ANPR, throughout the ANPR phase and before proceeding to formal rulemaking. However, it is important to move beyond a conceptual framework in a reasonable time frame consistent with advanced reactor development. For example, with the recent Department of Energy (DOE) initiative for industry participation, the framework should support future activities for the Global Nuclear Energy Partnership (GNEP) program, in licensing non-light water reactors (*e.g.*, advanced burner reactors) (see <http://www.gnep.energy.gov/>), as well as the DOE nuclear hydrogen initiative, in the relatively near term.

Please contact me should you have any questions regarding the information provided herein.

Sincerely,



Robert E. Brown
General Manager
Regulatory Affairs

CC:

P. Campbell (GE)

E. Loewen (GE)

J. Boaz (GE)

S. Hucik (GE)

A. Heymer (NEI)

R. Bradley (NEI)

Document Control Desk (NRC)

From: "Campbell, Patricia L (GE Infra, Energy)" <patriciaL.campbell@ge.com>
To: <SECY@nrc.gov>
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Attached are comments on the subject Advance Notice of Proposed Rulemaking. A copy is being mailed separately to the NRC Document Control Desk.

Patricia L. Campbell
GE Energy
Washington Regulatory Affairs Director

T *202.637.4239
F *202.637.4016
C *202.664.4511
D *272-4239
E patriciaL.campbell@ge.com
www.ge.com <<http://www.ge.com/>>

1299 Pennsylvania Avenue, NW
9th Floor
Washington, DC 20004, USA
General Electric Company

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CC: "Brown, Bob E. (GE Infra, Energy)" <bob.brown@ge.com>, <jlb4@nrc.gov>, <mxd@nrc.gov>, "BRADLEY, Biff" <reb@nei.org>, "HEYMER, Adrian" <aph@nei.org>, "Hucik, Steven A. (GE Infra, Energy)" <Steven.Hucik@ge.com>, "Loewen, Eric (GE Infra, Energy)" <eric.loewen@ge.com>, "Boaz, Jeffery (GE Infra, Energy)" <jeffery.boaz@ge.com>, "Sedney, Kathy K. (GE Infra, Energy)" <kathy.sedney@ge.com>, "Murdock, Ronnie E. (GE Infra, Energy)" <ronnie.murdock@ge.com>

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From: "Campbell, Patricia L (GE Infra, Energy)"
<patriciaL.campbell@ge.com>

Created By: patriciaL.campbell@ge.com

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