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June 6, 2017

Mr. Victor M. McCree
Executive Director for Operations
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

Subject: Clarification of Issues Related to Compliance with General Design Criteria and Conformance to Licensing Basis Documents

Project Number: 689

Dear Mr. McCree:

I am writing on behalf of the Nuclear Energy Institute (NEI)¹ and the commercial nuclear power industry to emphasize the importance of applying the recent guidance provided by the Solicitor/Office of the General Counsel² in analyzing questions of compliance with the General Design Criteria (GDC) and licensing basis documents.³ Proper application of this guidance will be important to the resolution of several issues that are currently being addressed by the NRC staff and the industry, including tornado missile protection and the service life of certain structures, systems and components.

The role of the GDC as part of a plant's licensing basis is a foundational issue that affects many aspects of the NRC's regulatory programs, including licensing actions, requests for

¹ NEI is responsible for establishing unified nuclear industry policy on matters affecting the nuclear energy industry, including regulatory, financial, technical and legislative issues. NEI members include all companies licensed to operate commercial nuclear power plants in the United States, nuclear plant designers, major architect/engineering firms, fuel fabrication facilities, materials licensees, and other organizations and individuals involved in the nuclear energy industry.

² Memorandum from A.P. Averbach (Solicitor, NRC) to E.M. Hackett (Chairman, CRGR) "Summary of COMSECY-16-0020 Recommendation on Revision of Guidance Concerning Consideration of Cost and Applicability of Compliance Exception to Backfit Rule," Dec. 20, 2016 ("Solicitor's Memo"). The Solicitor's Memo summarized the guidance provided by the General Counsel in COMSECY-16-0020, which is not publicly available. The Commission approved the recommendations made in COMSECY-16-0020 in a November 29, 2016 staff requirements memorandum.

³ As used in this letter, the term "licensing basis" is intended to include the information covered by the definition of "current licensing basis" provided in 10 CFR 54.3.

additional information, generic communications, and inspections and enforcement. As well articulated in the Solicitor's Memo, the GDC are not requirements in themselves except in limited circumstances. Instead, they lay the foundation for more specific requirements found elsewhere in the licensing basis. Ambiguity in the GDC or licensing basis is not an opportunity for staff to impose new or changed requirements on licensees. Rather, the Commission has recognized a presumption that a licensed facility is safe to operate and thus meets applicable GDC and licensing basis requirements. For this reason, the staff should base any compliance backfit requests on specific, prescriptive requirements as opposed to high-level standards.

Therefore, we respectfully request that the Office of Nuclear Reactor Regulation provide guidance to the inspection and technical staff to ensure that questions of compliance with the GDC and conformance to a plant's licensing basis are examined through the proper lens. This guidance, discussed below in greater detail, could ultimately be included in the planned update to the agency's backfitting guidance contained in NUREG-1409.

Compliance with GDC

The Solicitor's Memo provided guidance to the NRC staff regarding use of the compliance exception to maintain consistency with the GDC. Although this guidance was provided in the context of implementing the compliance exception to the Commission's backfitting rules, its utility expands beyond the scope of the compliance exception. Specifically, the Solicitor's Memo states (in part):

General Design Criteria (GDCs) represent "minimum requirements" for the principal design criteria (PDCs) for water-cooled nuclear power plants similar in design and location to plants for which construction permits have been issued by the Commission. See 10 C.F.R. Part 50 App. A. Applicants for licenses issued under Part 50 (or Part 52, if they are not relying on already approved design certifications) are required to submit PDCs for approval. The two-step licensing process of Part 50 requires approval of the PDCs as a condition to the grant of a construction permit. Later, prior to issuance of an operating license and as a basis for its finding of reasonable assurance of adequate protection of public health and safety, the Commission must find that the facility has been built in accordance with the PDCs and any changes. See Final Rule, General Design Criteria for Nuclear Power Plants, 36 Fed. Reg. 3255, 3256 (Feb. 20, 1971) ("Principal design criteria established by an applicant and accepted by the Commission will be incorporated by reference in the construction permit. In considering the issuance of an operating license under Part 50, the Commission will require assurance that these criteria have been satisfied in the detailed design and construction of the facility and that any changes in such criteria are justified."). Thus, for Part 50 licenses issued since 1971 (when the GDCs were promulgated), the Commission has already necessarily reached the conclusion that the design basis of the plant, as reflected in the PDCs, meets or exceeds the minimum criteria set forth in the GDCs.

The approval process outlined above will typically yield more specific requirements than those set forth in the GDCs. However, the agency is not precluded from reliance on GDCs as the source of a "requirement" for purposes of invoking the compliance exception, in those cases where a GDC provides more than just a performance standard and has not been superseded through the approval of PDCs and requirements derived from those PDCs. Thus, a GDC can be regarded as a requirement in those circumstances in which the GDC is prescriptive in nature and the technical specifications and other licensee requirements derived from the PDCs do not speak to the matter in question.⁴

As explained in this passage, typically the GDC and PDC are translated into more specific licensing basis requirements against which compliance can be objectively evaluated. Thus, questions of compliance with the GDC should typically be determined by examining the technical specifications and other, more prescriptive licensing basis requirements derived from the PDCs.⁵

This understanding of the specific role of the GDC should also apply to future generic design criteria developed for non-light-water (advanced) reactors. Indeed, in recent draft guidance proposing such design criteria (based off the GDC), the staff acknowledged that the proposed design criteria "are not considered to be final or binding."⁶ Instead, "[i]t is the applicant's responsibility to develop the PDC for its facility based on the specifics of its unique design, using the GDC, non-LWR design criteria, or other design criteria as the foundation."⁷

In addition, the Commission has concluded that the GDC should not be retroactively applied to plants that received their construction permits prior to May 21, 1971.⁸ After considering the question of whether the agency should backfit the GDC, the Commission concluded:

⁴ Solicitor's Memo, at pg. 3-4 (emphasis added). While we generally agree with this guidance, it is unclear that any of the GDC is sufficiently "prescriptive in nature" to serve as a basis for objectively evaluating compliance at facilities that have been operating for decades.

⁵ NEI made a similar point in its July 19, 2016, letter to the Executive Director for Operations. See Letter from A.R. Pietrangelo (NEI) to V.M. McCree (NRC), "Nuclear Energy Institute Comments on Tasking Memorandum Dated June 9, 2016" (July 19, 2016). This position is also consistent with the guidance provided in the NRC's Enforcement Manual. See "Nuclear Regulatory Commission Enforcement Manual," Rev. 10 (March 3, 2017), at pg. 347 (explaining that the GDC carryover into the requirements for the FSAR and the Technical Specifications, and that the GDC are not directly applicable to operating requirements).

⁶ DG-1330, Guidance for Developing Principal Design Criteria for Non-Light Water Reactors, at 7 (Feb. 2017).

⁷ *Id.*

⁸ Memorandum from S.J. Chilk (Secretary, NRC) to J.M. Taylor (Executive Director for Operations, NRC), "SECY-92-223 – Resolution of Deviations Identified During the Systematic Evaluation Program," Sept. 18, 1992.

At the time of promulgation of Appendix A to 10 CFR Part 50, the Commission stressed that the GDC were not new requirements and were promulgated to more clearly articulate the licensing requirements and practice in effect at that time. While compliance with the intent of the GDC is important, each plant licensed before the GDC were formally adopted was evaluated on a plant specific basis, determined to be safe, and licensed by the Commission. Furthermore, current regulatory processes are sufficient to ensure that plants continue to be safe and comply with the intent of the GDC. Backfitting the GDC would provide little or no safety benefit while requiring an extensive commitment of resources. Plants with construction permits issued prior to May 21, 1971 do not need exemptions from the GDC.⁹

Given the discussion provided above, guidance should be provided to the inspection and technical staff, which clarifies the following: (1) for Part 50 licenses issued since 1971, the Commission has already necessarily reached the conclusion that the design basis of the plant, as reflected in the PDCs and confirmed by comparison to the as-built configuration of the plant, meets or exceeds the minimum criteria set forth in the GDCs; (2) the Commission has already decided that backfitting the GDC on plants with construction permits issued prior to May 21, 1971, is unnecessary because those plants were designed to criteria that are substantially similar to the GDC; and (3) when evaluating compliance with the GDC, inspectors and technical staff should identify relevant technical specifications and other more prescriptive NRC requirements, contained in either the regulations or the facility's licensing basis, in order to evaluate compliance.

Compliance with Licensing Basis Documents

The inspection and technical staff should also be provided guidance on how to analyze compliance with licensing basis information contained in the Updated Final Safety Analysis Report (UFSAR). Specifically, the staff should focus on identifying prescriptive licensing basis requirements that can be objectively evaluated, without the need for significant reinterpretation and without imposing current guidance or positions on licensees that were not applicable when licensing decisions were made, and which the licensee has not formally committed to meeting.

In situations where the relevant licensing or design basis requirements are not prescriptive enough for the staff to objectively evaluate compliance (*i.e.*, the relevant requirements are susceptible to multiple reasonable interpretations, at least one of which would allow the inspector or reviewer to conclude that the licensee's method of compliance is adequate), the

⁹ *Id.* at pg. 1.

presumption should be that the as-built condition of the plant conforms to the applicable GDC and licensing basis. As explained above in the discussion of GDC compliance, prior to issuance of an operating license the Commission has already necessarily concluded that the “facility has been built in accordance with the PDCs.”¹⁰ This aligns with the Commission’s statement in its 1985 backfitting rule that there is a “presumption of safety which ordinarily accompanies the issuance of a license.”¹¹ This presumption is also consistent with the guidance provided in NUREG-1409 with respect to the “reanalysis of issues,” which states:

Throughout plant lifetime, many individuals on the NRC staff have an opportunity to review the requirements and commitments incumbent upon a licensee. Undoubtedly, there will be occasions when a reviewer concludes the licensee's program in a specific area does not satisfy a regulation, license condition or commitment. In the case where the staff previously accepted the licensee's program as adequate, any staff specified change in the program would be classified as a backfit.

For example, in the case of an NTOL, once the SER is issued signifying staff acceptance of the programs described in the SAR, the licensee should be able to conclude that his commitments in the SAR satisfy the NRC requirements for a particular area. If the staff was to subsequently require that the licensee commit to additional action other than that specified in the SAR for the particular area, such action would constitute a backfit.¹²

Just as a licensee is entitled to rely on the NRC’s review and approval of programs (and the sufficiency of the commitments upon which such approvals are based), licensees should likewise be able to rely on the Commission’s conclusion that the facility has been built in accordance with the PDCs. This presumption stems from the fact that nuclear power plants are designed and licensed as an integrated system, and a patchwork reinterpretation of the GDC to force-fit individual changes on a licensed facility could be harmful if done “without the benefit of integrating the impact of these changes across the whole system or plant.”¹³

The presumption discussed above would not, however, prevent the staff from correcting situations where the as-built condition of the plant clearly does not conform to a prescriptive licensing basis requirement, or from imposing a new or different interpretation of the licensing

¹⁰ Solicitor’s Memo, at pg. 3.

¹¹ *Revision of Backfitting Process for Power Reactors, Final Rule*, 50 Fed. Reg. 38,097 (Sept. 20, 1985), *vacated and remanded on other grounds sub nom., Union of Concerned Scientists v. U.S. Nuclear Regulatory Comm’n*, 824 F.2d 108 (D.C. Cir. 1987).

¹² “Backfitting Guidelines,” NUREG-1409 (July, 1990), at pg. 18-19.

¹³ REGULATORY REFORM TASK FORCE, U.S. NUCLEAR REGULATORY COMMISSION, REPORT ON BACKFITTING AND LICENSING PRACTICES AT THE U.S. NUCLEAR REGULATORY COMMISSION 6 (March 11, 1985).

or design basis in all circumstances.¹⁴ Specifically, the agency's backfitting rules should be used to determine whether this presumption can be overcome. With respect to use of the compliance exception, the staff should follow the direction provided in the Solicitor's Memo to determine whether use of the exception is appropriate. For example, when evaluating a new or different position regarding a plant's licensing basis, the compliance exception would not be applicable to:

recharacterizations of whether a particular set of otherwise understood circumstances satisfies the standard at issue [*e.g.*, a licensing basis requirement] based upon professional standards and practices developed or accepted after the time of the determination [*e.g.*, the NRC's original licensing decision or subsequent NRC approvals].¹⁵

Assuming a potential backfit does not raise adequate protection considerations, in cases where the compliance exception is not applicable a full backfitting analysis should be performed prior to imposition of the new or different interpretation on the licensee.

We appreciate your consideration of our views on this issue and understand that work is underway to revise the agency's backfitting guidance in NUREG-1409 to conform to the positions provided in the Solicitor's Memo. We support that effort and look forward to providing industry's views at the appropriate time. We believe, however, that additional guidance (as described above) should be provided for the staff's use while work on NUREG-1409 is underway. Such guidance will ensure that the insights provided in the Solicitor's Memo are brought to bear in resolving important regulatory issues in the near term, and that lessons-learned from the 2016 Exelon backfitting appeal adequately institutionalized and implemented by the agency.

Please feel free to contact me if you have any questions.

¹⁴ In addition, while the presumption discussed above would be relevant when examining compliance with ambiguous licensing basis requirements or commitments, it would not apply in other circumstances, such as when evaluating whether the licensee has appropriately controlled modifications to the design of the facility or modifications to programs described in the USFAR. Instead, such modifications would be evaluated against configuration management, change control, and other relevant requirements.

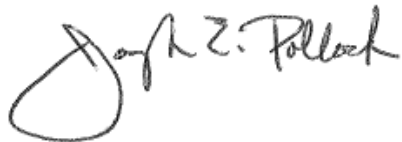
¹⁵ Solicitor's Memo, at pg. 3.

Victor M. McCree

June 6, 2017

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Sincerely,

A handwritten signature in black ink that reads "Joseph E. Pollock". The signature is written in a cursive style with a large, looped initial "J".

Joseph E. Pollock

c: Commissioners
M.R. Johnson, NRC, OEDO
F.D. Brown, NRC, OEDO
W.M. Dean, NRC, NRR
M.L. Dapas, NRC, NMSS