Union of Concerned Scientists
Citizens and Scientists for Environmental Solutions

February 7, 2012

The Honorable Gregory B. Jaczko, Chair
The Honorable Kristine L. Svinicki, Commissioner
The Honorable George Apostolakis, Commissioner
The Honorable William D. Magwood, IV, Commissioner
The Honorable William C. Ostendorff, Commissioner
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

**Subject: FAIRNESS AND LEGAL ISSUES ASSOCIATED WITH RENEWED REACTOR OPERATING LICENSES**

Dear Commissioners:

The Union of Concerned Scientists (UCS) has identified fairness issues associated with the Nuclear Regulatory Commission's (NRC) process for renewing the operating licenses of nuclear power reactors. These issues are not caused by flaws in the license renewal regulation (10 CFR Part 54), but with how the NRC staff is implementing it vis-à-vis two other applicable regulations. Your attention to these issues and direction to the staff for their resolution is necessary.

As shown by the timeline in Attachment 1, the license renewal regulation was adopted in 1995. In March 2000, the two reactors at the Calvert Cliffs nuclear plant became the first reactors to have their operating licenses renewed. As of today, the NRC has issued renewed operating licenses for a total of 71 reactors, including the two at Calvert Cliffs.

Along the way, the NRC revised its guidance used when determining whether license renewal applications could be approved. The Standard Review Plan for License Renewal (NUREG-1800) and the associated Generic Aging Lessons Learned report (NUREG-1801) were first issued in July 2001, revised in September 2005, and revised again in December 2010. Attachment 1 shows these revision dates relative to the renewed operating licenses issued by the NRC. The underlying regulation has not changed, but the NRC staff has changed its acceptance criteria for approving license renewal applications.

Two regulations apply to this situation. 10 CFR §50.109, Backfitting, covers "the imposition of a regulatory staff position interpreting the Commission's regulations that is either new or different from a previously applicable staff position." This regulation prohibits the introduction of new

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Two Brattle Square · Cambridge, MA 02238-9105 · TEL: 617.547.5552 · FAX: 617.864.9405
1825 K Street NW · Suite 800 · Washington, DC 20006-1232 · TEL: 202.223.6133 · FAX: 202.223.6162
2397 Shattuck Avenue · Suite 203 · Berkeley, CA 94704-1567 · TEL: 510.843.1872 · FAX: 510.843.3785
One North LaSalle Street · Suite 1904 · Chicago, IL 60602-4064 · TEL: 312.578.1750 · FAX: 312.578.1751

and revised regulatory requirements unless they are necessary for adequate protection of public safety or are found to be cost-beneficial safety upgrades. The second regulation, 10 CFR §50.100, Revocation, Suspension, Modification, Amendment of Licenses and Construction Permits, Emergency Operations by the Commission, enables an operating license to be amended "because of conditions revealed by the application or statement of fact of any report, record, inspection, or other means which would warrant the Commission to refuse to grant a license."

These two regulations should have governed the NRC's license renewal process. The backfitting regulation prevented the NRC from applying higher standards when approving license renewal applications unless those standards were appropriately justified. And once higher standards were properly applied, 10 CFR §50.100 should have resulted in amendments to the operating licenses that were renewed when the lower standards applied. Evidence suggests that one or both of these regulations have been violated.

UCS provides the example of Alloy 600 aging management for the Ginna and Point Beach nuclear plants for illustration. Given the numerous changes in the Standard Review Plan for License Renewal and the GALL report, there are likely many other examples. UCS cites this single example to hopefully convince you to direct the staff to undertake the steps necessary to identify and correct them all.

According to Appendix A to the NRC's 2011-2012 Information Digest (NUREG-1350, Vol. 23), the Ginna and Point Beach nuclear plants each feature two-loop pressurized water reactors designed by Westinghouse. The Atomic Energy Commission (NRC's predecessor) issued the operating licenses for Ginna on September 19, 1969, for Point Beach Unit 1 on September 5, 1970, and for Point Beach Unit 2 on March 8, 1973. Thus, all three reactors have very similar reactor technologies and operating experiences.

The NRC issued the renewed operating license for Ginna on May 19, 2004, and the renewed operating licenses for both Point Beach reactors on December 23, 2005. Between the license renewals for these two plants, the NRC staff issued the first revisions to the Standard Review Plan for License Renewal and the GALL report in September 2005. The NRC staff issued NUREG-1833, Technical Bases for Revision to the License Renewal Guidance Documents (ADAMS ML052110003) in October 2005. Among the many new and revised items contained in the revised guidance documents was a new Aging Managing Review (AMR) item RP-22 for pressurizer surge and steam space nozzles and welds. NUREG-1833 stated the technical basis for this new item:

> *However, if alloy 600 or its associated weld materials (alloy 82/182) is used, the Staff has requested a commitment in the FSAR [final safety analysis report] supplement as stated. AMR line-item RP-22 was added to identify primary water stress corrosion cracking (PWSCC) of the pressurizer steam space nozzles and was added on the basis of*

> *a study of domestic operating experience. The NRC Office of Research provided a 128-item listing of LERs [licensee event reports] related to failures, cracking, degradation, etc of passive components.*

Four other new or revised alloy 600 aging management review items appear in NUREG-1833.

During its review of the Point Beach license renewal application, the NRC staff requested additional information (RAI) from the plant's owner (ADAMS ML043270647). Specifically, in RAI 2.1.16-1 the staff directed the owner to provide a commitment "that the Reactor Coolant System Alloy 600 Inspection Program will be submitted 24-36 months prior to the period of extended operation for staff review and approval to determine if the program demonstrates the ability to manage the effects of aging per 10 CFR 50.54.21(a)(3)." Point Beach's owner formally committed to the alloy 600 aging management program requested by the NRC staff (ADAMS ML050340198).

The Safety Evaluation Report (SER) (NUREG-1839, ADAMS ML053420134) issued by the NRC in support of the renewed operating licenses for Point Beach explicitly cites the alloy 600 aging management review items. For example, page 3-8 lists the "Reactor Coolant System Alloy 600 Inspection Program." Section 3.0.3.2.15 of the NRC's SER described it as a new program determined by the staff to be consistent with its aging management program expectations in the Standard Review Plan for License Renewal and the GALL report. On page 3-85, the staff stated that "On this basis of its review and the RAI response discussed above, the staff found this acceptable. The applicant committed to submit the subject program 24 to 36 months prior to the period of extended operation."

The NRC renewed the operating license for the Point Beach reactors based, in part, on the owner's formal commitment to alloy 600 aging management programs introduced in the revised regulatory requirements, as described in the September 2005 version of the applicable guidance documents. Our presumption is that the NRC staff would not have renewed the Point Beach operating licenses but for its alloy 600 aging management concerns having been explicitly and formally addressed in this manner.

The SER (NUREG-1786, ADAMS ML041400502) issued earlier by the NRC staff in support of the renewed operating license for Ginna addressed the alloy 600 aging issue quite differently. For example, on page 3-63 the NRC staff stated:

> *The applicant indicated that susceptibility models for other Alloy 600 and 82/182 pressure boundary components have not yet been developed. The applicant will perform a susceptibility assessment when the models become available.*

Unlike for Point Beach, the NRC staff did not extract a commitment from Ginna's owner for a reactor coolant system alloy 600 inspection program before approving its license renewal. And

UCS has not been able to find evidence that the NRC staff subsequently required Ginna's owner to implement a reactor coolant system alloy 600 inspection program.

The NRC renewed the operating license for Ginna following its determination that the license renewal application and ensuing RAI responses satisfied the requirements established in Revision 0 of the Standard Review Plan for License Renewal and the GALL report.

The NRC renewed the operating licenses for Point Beach following its determination that the license renewal application and ensuing RAI responses satisfied the requirements established in Revision 1 of the Standard Review Plan for License Renewal and the GALL report.

Revision 1 to the guidance documents established more extensive aging management measures, including the reactor coolant system alloy 600 inspection program, than existed in Revision 0.

The NRC issued Revision 2 to the guidance documents in December 2010, establishing even more extensive aging management measures.

10 CFR §50.109 does not allow the NRC to impose stricter regulatory requirements unless they are needed to provide adequate protection of public safety or are formally determined to be cost beneficial. UCS assumes that the NRC staff conformed to 10 CFR §50.109 and that the revisions to the license renewal guidance documents have the proper legal safety nexus.

10 CFR §50.100 allows the NRC to amend operating licenses when facts subsequently arise that, had they been known at the time, would have prevented the NRC from issuing the licenses. The more extensive aging management measures incorporated into Revisions 1 and 2 to the Standard Review Plan for License Renewal and the GALL report comprise such facts. Yet the NRC has not required applicable amendments to the renewed operating licenses.

The aging management measures necessary to provide adequate protection of public safety must not be based on where a reactor resides in the NRC's license renewal queue. If additional or revised measures are determined to be required by the NRC and incorporated into license renewal guidance documents for all future applicants to satisfy, then those same measures must also be satisfied by past applicants, too.

Had the license renewal application for Ginna been received *after* Point Beach's operating licenses were renewed in December 2005, there is little doubt that the NRC would have required aging management measures such as the reactor coolant system alloy 600 inspection program, as it did for Point Beach.

Conversely, had the license renewal application for Point Beach been received *before* Ginna's operating license was renewed in May 2004, there is little doubt that the NRC would not have

required aging management measures such as the reactor coolant system alloy 600 inspection program, as it did not for Ginna.

Consistent application of regulations 10 CFR §50.109 and 10 CFR §50.100 would not permit this disparity.

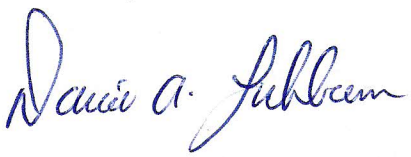
If the NRC staff must determine that a license renewal application satisfies the more extensive aging management measures contained in Revisions 1 and 2 to the license renewal guidance documents, then 10 CFR §50.100 requires that prior renewed operating licenses be amended accordingly. If safety truly dictates the more extensive aging management measures the NRC required for Point Beach, then it is unfair to the people living around Ginna for the NRC to have accepted less.

If, however, the lesser aging management measures contained in the documents (e.g., the NRC's SER, the license renewal application, the RAI responses, etc.) are sufficient to adequately protect public safety through the end of the extended license period, then 10 CFR §50.109 prevents the NRC from imposing stricter, and more costly, measures. If safety is adequately assured by the less extensive aging management measures the NRC accepted for Ginna, then it is unfair to the stockholders and ratepayers of Point Beach for the NRC to have required more.

The Ginna and Point Beach reactors share very similar reactor designs and operating experiences. Such dissimilar aging management requirements cannot be rationally explained.

We respectfully request that the Commission take the steps necessary to have its regulations consistently and fairly applied to all operating reactors regardless of their location in the license renewal queue.

Sincerely,



David Lochbaum
Director, Nuclear Safety Project
PO Box 15316
Chattanooga, TN 37415
(423) 468-9272, office