

UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
OFFICE OF NUCLEAR REACTOR REGULATION  
WASHINGTON, DC 20555-0001

October 23, 2012

NRC INFORMATION NOTICE 2012-19: LICENSE RENEWAL POST-APPROVAL SITE  
INSPECTION ISSUES

**ADDRESSEES**

All holders of or applicants for operating licenses for nuclear power reactors under the provisions of Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50, "Domestic Licensing of Production and Utilization Facilities," except those who have permanently ceased operations and have certified that fuel has been permanently removed from the reactor vessel.

**PURPOSE**

The U.S. Nuclear Regulatory Commission (NRC) is issuing this information notice (IN) to inform addressees of issues of concern identified during inspection procedure (IP) 71003 inspections, "Post-Approval Site Inspection for License Renewal," (Agencywide Documents Access and Management System [ADAMS] Accession No. [ML082830294](#)), related to the management and implementation of the aging management programs (AMPs) described in the updated final safety analysis report (UFSAR) supplement, regulatory commitments for license renewal, and license conditions that are added as part of the renewed license. The examples of discrepancies included in this IN could have generic implications and may impact the licensee's ability to meet a commitment or effectively implement an AMP as was intended by the various license renewal documents. Licensees are reminded to apply thoroughness, diligence, and attention to detail when implementing, managing, and controlling the UFSAR supplement, commitments for license renewal, and license conditions that are specific to license renewal. The NRC expects that recipients will review the information for applicability to their facilities and consider actions, as appropriate, to avoid similar problems. Suggestions contained in this IN are not NRC requirements; therefore, no specific action or written response is required.

**BACKGROUND**

The NRC regulations in 10 CFR Part 54, "Requirements for Renewal of Operating Licenses for Nuclear Power Plants," provide a means by which licensees can obtain a renewed operating license which allows continued operation of a nuclear power plant beyond its original license term (40 years). NUREG-1801, "Generic Aging Lessons Learned (GALL) Report," Revision 2, issued December 2010 (hereafter referred to as "the GALL Report"), provides recommended programs that the NRC staff finds acceptable to manage the aging effects of passive and long-lived systems, structures, and components as plants enter the period of extended operation. License conditions are added to a renewed license to allow for changes to the licensee's AMPs in accordance with NRC requirements and to ensure that certain future programs and activities are completed before the period of extended operation.

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As licensees approach the period of extended operation, the NRC regional offices conduct inspections using IP 71003. The objectives of IP 71003 inspections include: (1) verifying the implementation of license conditions added as part of the renewed license and regulatory commitments for license renewal; and (2) confirming that the licensee has implemented the AMPs as described in the UFSAR supplement. A majority of these inspections are conducted before the licensee enters the period of extended operation. The inspections are scheduled to support completion of the review in sufficient time for licensees to make any necessary corrections to their AMPs before entering the period of extended operation.

## **DESCRIPTION OF CIRCUMSTANCES**

The NRC staff has performed many post-approval site inspections for license renewal at several plants, shortly before the plants entered the period of extended operation. The following information in this section describes issues that were identified during IP 71003 inspections conducted from 2009 to 2012.

### Oyster Creek Generating Station – Implementation of Corrosion Prevention Measures

Several issues were identified involving license renewal activities to implement corrosion prevention measures. Specifically, a strippable coating that was applied to the reactor cavity liner to prevent water leakage and protect the drywell shell from corrosion, unexpectedly delaminated. This allowed water to leak into the gap between the drywell shell and concrete shield wall and flow down the outside of the drywell shell into four of the ten sand bed bays. Additionally, NRC inspectors identified that an established administrative limit for cavity seal leakage did not prevent water intrusion into the gap. Further, the licensee monitored for water leakage from the sand bed bay drains by checking bottles connected via tygon tubing and funnels to the sand bed bay drain lines. Subsequently, the licensee identified that the tubing was not connected to the drain lines for two sand bed bays. When deficiencies or nonconformances are identified associated with the inadequate implementation of activities for license renewal, it is important that licensees establish corrective actions to prevent the ineffective aging management of systems, structures, and components. This event is described in “Oyster Creek Generating Station-NRC License Renewal Follow-Up Inspection Report 05000219/2009006,” dated May 18, 2009 (ADAMS Accession No. [ML091380379](#)).

### Dresden Nuclear Power Station Unit 2 – Implementation of the One-Time Inspection Program

NRC inspectors identified instances in which the licensee’s one-time inspection of a system (i.e., a ventilation system) identified degradation (i.e., ducting corrosion), but the evaluation to address the identified aging effect was inadequate. Specifically, the licensee scheduled follow-up examinations of the identified degraded system and did not conduct an extent-of-condition review for other similar in-scope systems, such as other ventilation systems with ducting of the same material under similar environmental conditions. The purpose of the one-time inspection program is to provide reasonable assurance that an aging effect, such as degradation from corrosion, is not occurring or that the aging effect is occurring in a manner such that the component or structure’s intended function(s) will not be affected during the period of extended operation and, therefore, not require additional aging management (e.g., measures to monitor and prevent corrosion of that structure or component). If a one-time inspection identifies age-related degradation that could jeopardize an intended function before the end of the period of extended operation, the one-time inspection program calls for the licensee to: (1)

perform an evaluation of the need for follow-up examinations to monitor the progression of any age-related degradation; and (2) perform an extent-of-condition review. This event is described in "Dresden Nuclear Power Station, Unit 2 NRC Post-Approval Site Inspection for License Renewal Inspection Report 05000237/2009007," dated December 22, 2009 (ADAMS Accession No. [ML093570258](#)).

#### Palisades Nuclear Plant – Management of CHECWORKS Software

Consistent with the GALL Report, some licensees made regulatory commitments that were incorporated into the UFSAR that stated an effective flow accelerated corrosion program includes analysis using a predictive code, such as CHECWORKS. NRC inspectors identified one example in which the licensee classified and managed the CHECWORKS software at a lower level (i.e., "Business Important" instead of "Regulatory Commitments") than what was specified in the licensee's procedure for software quality assurance. It is important that any software used to perform calculations be classified and managed in accordance with licensee procedures for software quality assurance to ensure that the appropriate software quality assurance requirements are applied during installation and testing of the program, and prior to its use. Also, it should be noted that regulatory commitments incorporated as part of the UFSAR supplement are considered components of the UFSAR, and are managed in accordance with the requirements of 10 CFR 50.59, "Changes, tests, and experiments." This event is described in "Palisades Nuclear Plant Post-Approval Site Inspection for License Renewal, Inspection Report 05000255/2011008 (DRS)," dated May 6, 2011 (ADAMS Accession No. [ML11126A328](#)).

#### H.B. Robinson Steam Electric Plant (H.B. Robinson) and Surry Power Station (Surry) Units 1 and 2 – Implementation of Procedures for AMPs

NRC inspectors identified one example where steps added to site-specific procedures in order to satisfy a UFSAR action item, which consisted of enhancements to the systems monitoring program, were inadvertently deleted as a result of a procedure revision. The procedure revision deleted enhancements made to the list of aging effects included in a system walkdown checklist. The elimination of such enhancements occurred during a transition from site-specific procedures to corporate procedures. The resulting implementation procedures would not have provided adequate guidance to meet the action as described in the plant's UFSAR because one of the applicable aging effects would not have been addressed in the procedure. This event is described in "H.B. Robinson Steam Electric Plant – NRC Post-Approval Site Inspection for License Renewal Inspection Report 05000261/2010008," dated April 7, 2010 (ADAMS Accession No. [ML100970495](#)).

Additionally, NRC inspectors identified one example where the adequacy of an approved station procedure, as part of an AMP to monitor water intrusion into manholes, which could lead to age-related degradation in high- or medium-voltage cables for non-environmental qualification applications, was not effectively verified prior to its final approval. The NRC inspectors noted that the procedure to inspect manholes would not have provided adequate instructions, during the period of extended operation, to fully meet the actions described in the UFSAR, due to physical limitations in the manhole design. This event is described in "Surry Power Station Units 1 and 2 – NRC Post-Approval Site Inspection for License Renewal Inspection Report 05000280/2011010 and 05000281/2011010," dated September 12, 2011 (ADAMS Accession No. [ML112560062](#)).

It is important for licensees to: (1) establish implementation procedures that provide adequate instructions for activities involving the testing, inspection, operation, or maintenance of systems, structures, and components within the scope of license renewal; and (2) ensure revisions to procedures are controlled such that any changes to instructions that are incorporated to fulfill a commitment for license renewal are given full consideration before being revised. By doing so, licensees can preclude the reduction in the effectiveness of AMPs and the unsatisfactory completion of activities for license renewal. The licensees for H.B. Robinson and Surry documented the deficiencies in their corrective action programs and initiated corrective actions to address the issues.

#### Vermont Yankee Nuclear Power (Vermont Yankee) – Management of License Conditions Added As Part of the Renewed License

During the license renewal application review, regulatory commitments are made by the applicant and listed in Appendix A of the license renewal safety evaluation report. NRC inspectors identified that commitments listed in Appendix A of the license renewal safety evaluation report for Vermont Yankee had not been incorporated as part of the UFSAR supplement. The conditions that were added as part of the renewed operating license for Vermont Yankee did not require the commitments for license renewal to be incorporated as part of the UFSAR. Furthermore, the specific wording of one of the license conditions that was added to the renewed license stated, “The UFSAR supplement, as revised, submitted pursuant to 10 CFR 54.21(d), describes certain future activities to be completed prior to and/or during the period of extended operation. [The licensee] shall complete these activities in accordance with Appendix A...” of the safety evaluation report for license renewal. This wording escalated the regulatory commitments to license conditions. Regulatory commitments that are incorporated as part of the UFSAR supplement are considered components of the UFSAR, and are managed in accordance with the requirements of 10 CFR 50.59. Regulatory commitments that are referenced in the license condition for license renewal, but not incorporated as part of the UFSAR, are to be treated as license conditions. Changes to license conditions require NRC approval and are processed in accordance with the requirements of 10 CFR 50.90, “Application for amendment of license, construction permit, or early site permit.” This issue appears in “Vermont Yankee Nuclear Power – NRC Inspection Report 05000271/2012008,” dated April 20, 2012 (ADAMS Accession No. [ML12103A406](#)).

#### **DISCUSSION**

The renewed operating license requires that licensees update the UFSAR with the UFSAR supplement, which includes programs and activities associated with license renewal. The renewed license also requires that certain future activities be completed before the period of extended operation. NRC inspectors conduct post-approval site inspections for license renewal to verify that the licensee effectively implements and manages license conditions, AMPs, and commitments for license renewal and to ensure that the licensee has made any necessary corrections before the licensee enters the period of extended operation. This IN summarizes several issues of concern that were identified during previous post-approval site inspections and may have broad implications for plants scheduled for upcoming IP 71003 inspections.

Licensees manage changes to commitments and AMPs incorporated into the UFSAR supplement in accordance with 10 CFR 50.59. Commitments that are not incorporated in the

UFSAR, but are referenced in the license conditions for license renewal, are escalated to license conditions. In accordance with 10 CFR 50.90, licensees can apply for amendments to license conditions. Both the NRC and the licensees need to ensure that there is a clear understanding of the intent and expectations with regard to the implementation of license conditions and commitments for license renewal at the time the renewed license is issued.

A nonconformance with a commitment or AMP description included in the UFSAR could be a deviation, whereas a nonconformance with a license condition could be a violation. Licensees are required to correct deviations, deficiencies, and nonconformances in accordance with Criterion XVI of Appendix B to 10 CFR Part 50, "Corrective Action," or through their corrective action programs.

## CONTACTS

This IN requires no specific action or written response. Please direct any questions about this matter to the technical contacts listed below or the appropriate NRC project manager.

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