UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

OFFICE OF THE
INSPECTOR GENERAL

May 2, 2008

MEMORANDUM TO: Dale E. Klein
Chairman

FROM: Hubert T. Bell
Inspector General

SUBJECT: NRC STAFF REVIEW OF LICENSE RENEWAL APPLICATIONS

The Office of The Inspector General (OIG), U.S. Nuclear Regulatory Commission (NRC) recently completed an audit[1] of the NRC License Renewal Program. The OIG audit found cases where NRC documents contained nearly word-for-word repetitions of renewal application text provided by applicants[2] without attribution to the applicant. The audit noted that this practice made it difficult for a reader to distinguish between the information submitted by the applicant and the information prepared by the NRC staff to support its independent assessment and conclusion. It was noted that this reporting technique could cast doubt as to exactly what NRC did to independently review an applicant's license renewal application.

As a result of this audit finding, concerns were raised regarding the extent of the NRC staff review of license renewal applications. To address these concerns, OIG conducted a review of NRC staff[3] preparation of license renewal Safety Evaluation Reports (SERs) that documented NRC assessments of license renewal applications for four nuclear plants. This review included interviews and reviews of documents relevant to NRC's assessment of license renewal applications for the four nuclear plants. OIG's review focused on two Aging Management Programs (AMPs)[4] for each plant. Different AMPs were selected for each plant. OIG's review covered eight AMPs as depicted in the table below.

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[1] Audit of NRC's License Renewal Program, OIG-07-A-15, September 6, 2007
[2] The term applicant is consistently used in this memo to identify the entities applying to the NRC for a renewed license for a nuclear power reactor. These entities are operating reactor licensees but for the purposes of an extended license application they are referred to as applicants.
[3] Or technical reviewers contracted by the Nuclear Regulatory Commission
[4] Acceptable AMPs demonstrate that the effects of aging will be adequately managed so that the intended function(s) will be maintained consistent with the current licensing basis for the period of extended operation.

Plant	Aging Management Program
Browns Ferry	Buried Piping and Tanks
Browns Ferry	Fire Water[5]
Brunswick	Bolting Integrity[5]
Brunswick	Reactor Head Closure Studs
DC Cook	Oil Analysis[5]
DC Cook	Pressurizer Examination
Oyster Creek	Flow Accelerated Corrosion[5]
Oyster Creek	Compressed Air

Ten NRC staff members and two contractors involved with NRC license renewal reviews were interviewed by OIG. Each individual had direct involvement with the review of license renewal applications for the selected plants. In addition, OIG reviewed NRC license renewal audit reports,[6] NRC time reporting records, NRC project tracking reports, and other documents associated with the license renewal reviews for the four nuclear plants.

The NRC safety review process includes technical reviews performed in headquarters and on-site audits. Individual staff from Office of Nuclear Reactor Regulation (NRR) engineering divisions in headquarters conduct technical reviews of plant-specific AMPs and other unresolved or emergent issues. These individuals review specific sections of the renewal application based on their area of expertise. Teams from the Division of License Renewal, NRR, perform on-site audits of supporting documentation for AMPs. The results of these NRC staff reviews are documented in a SER.

Interviews

The technical reviewers interviewed by OIG consistently described two general approaches used in reviewing AMPs and preparing the associated input for SERs. The approach taken depended on whether the reviewer was conducting the review within an engineering division in headquarters or as part of an on-site audit team. OIG was told that the majority of AMP reviews were conducted by the audit teams. An NRC branch chief estimated that audit teams completed 70 to 90 percent of the work for AMP reviews between 2005 and 2007.

An engineering division reviewer working in NRC headquarters told OIG that their reviews were conducted initially through a review of the applicant's submittal. The reviewers submitted formal questions to the applicant in Requests for Additional

[5] These Aging Management Programs were addressed in the OIG Audit Report
[6] Audit reports are published by NRC staff following the completion of on-site reviews of applicant's license renewal supporting materials.

Information (RAI) to solicit additional information to support the review of the application. The applicant provided the NRC with formal written responses to these questions.

The engineering division reviewer told OIG that they then prepared a formal summary of their technical review and conclusions based on the application, RAIs, responses to RAIs, and clarifying discussions with the applicant. According to the reviewer, this input was provided to the License Renewal Division. In addition, the reviewer stated that they provided comments on the final draft SER to ensure the SER reflected their technical input.

Reviewers who participated in audit teams provided a consistent description of the general approach for their technical review. These reviewers stated that applicants provided applicable support materials at the applicant facilities during the on-site audits. These materials typically would include a high level license renewal document describing the AMPs as well as more detailed supporting documents.

The reviewers told OIG that professional judgment is used to determine the number and types of applicant documents that a reviewer examined during the audit. These individuals told OIG that they prepared working papers, including checklists, during the audit that reflected the specific documents reviewed. The OIG audit team working papers included notes from these document reviews and additional information supplied by applicant staff. The reviewers then used these working papers during and following the on-site audit to prepare their formal input for an audit report, which is then used as input to the SER. The License Renewal Division project manager collected the various inputs and prepared the SER.

The reviewers who participated in audits told OIG that the working papers prepared during on-site reviews were not retained as agency records and were not maintained in any formal record keeping system. The reviewers disposed of these working papers when they were no longer needed to support the review and approval of the application.[7]

Document Reviews

OIG reviewed the SER input document prepared by the engineering division reviewer. The SER input described specific application information, specific questions contained in RAIs, and the staff's review of the RAI response. The SER input described conclusions based on reviewing this information.

OIG reviewed NRC audit reports prepared for the four license renewal applications. These audit reports included attachments indicating that the individuals OIG interviewed participated in the respective audits. The audit reports contained summary descriptions of the staff evaluation of all applicable AMPs, including those reviewed by OIG.

[7] Handbook 1 of NRC Management Directive 3.53 provides criteria as to what constitutes personally held non-record materials which may be retained or discarded at the author's sole discretion.

OIG found that these audit reports did not provide a detailed description of applicant interviews or the contents of applicant documents reviewed by the NRC staff. The audit reports largely contained summary language such as "The project team interviewed the applicant's technical staff and reviewed, in whole or in part, the documents listed in Attachment 5 of this audit report."[8] The audit reports cited some specific documents of interest and included some observations made by the staff.

OIG also found that each audit report included an attachment which listed the documents reviewed during the Audit. According to the information in these audit reports, the staff reviewed approximately 280 applicant documents on average during each audit. The audit report listed an average of eight applicant documents for each specific AMP reviewed by OIG. The largest number of documents reviewers reported as referencing for any of the AMPs reviewed by OIG was nine and the least reviewed for any AMP was three.

OIG reviewed work hour data[9] for those NRC employees interviewed by OIG who had worked on the four license renewals which were reviewed. OIG found that all of these individuals reported time associated with the respective license renewal reviews. An analysis of the work hour data revealed that the average number of hours for project managers working on these license renewals was 2,835 hours, the average number of hours for each technical reviewer was 402 hours, and the average number of total hours for license renewal per reactor unit was approximately 10,582 hours.

Findings

OIG determined that the staff conducted headquarters and onsite reviews of license renewal application materials. OIG also learned that professional judgment was used to determine the extent of the staff's review of applicant documents and the number and nature of questions posed by NRC to the applicant staff. Based on this information, NRC reviewers prepared SER input for the License Renewal Division project manager who prepared a final SER.

NRC work hour data reviewed by OIG indicated that significant numbers of hours were used by the NRC staff in the review of these four license renewal applications. NRC audit reports also listed a number of applicant documents that were reviewed during these license renewal reviews.

OIG noted that SERs are summary in nature as are the NRC audit reports. These audit reports contain the documented description of the NRC on-site review of AMPs and provide support for the SERs. However, OIG learned that the staff does not preserve copies of all applicant documents reviewed during the on-site audit, and the staff does not preserve their own audit working papers as permanent records. The applicant documents reviewed and the working papers prepared during NRC onsite activities

[8] Page 85, Browns Ferry License Renewal Audit Report
[9] Provided to OIG by the Division of Financial Services in the NRC Office of the Chief Financial Officer

provide direct support of the specifics of the NRC review. Consequently, the failure to retain applicant documents and NRC working papers made it difficult to verify specific details of staff on-site review activities.

cc: Commissioner Jaczko
Commissioner Lyons
Commissioner Svinicki