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

January 31, 1997

ORGANIZATION: Nuclear Energy Institute (NEI)

SUBJECT: SUMMARY OF MEETING WITH NEI REGARDING THE NRC STAFF'S REGULATORY GUIDE AND NEI'S GUIDELINE FOR IMPLEMENTING THE LICENSE RENEWAL RULE

On January 21, 1997, representatives of NEI met with the Nuclear Regulatory Commission (NRC) staff in Rockville, Maryland to present views on proposed guidance for inclusion in the final version of either the NEI "Industry Guideline for Implementing the Requirements of 10 CFR Part 54 - the License Renewal Rule," NEI 95-10, or the NRC staff's Regulatory Guide (RG), "Standard Format and Content for Applications to Renew Nuclear Power Plant Operating Licenses." The agenda for the meeting is provided in Attachment 1 and the attendees are listed in Attachment 2.

The NRC staff is currently preparing proposed revisions to its draft RG or to NEI 95-10, as applicable, to resolve the public comments received. Most of the topics for which additional guidance is needed are also known to NEI which is also developing proposed revisions to NEI 95-10. Following were the views presented for each agenda topic:

License Renewal Demonstration Program Lessons-Learned Reports

The NRC staff issued NUREG-1568, "License Renewal Demonstration Program: NRC Observations and Lessons Learned," December 1996, to document the experience gained from participation in the demonstration program. NEI requested clarification on whether the NRC staff intended to issue additional guidance on the intent of the rule for topics where the report states that the staff will recommend additional guidance to meet the intent of the rule. The staff stated that it is not treating these topics any differently than the other topics for which revised or additional guidance is needed. NEI may develop proposed revisions for these topics and submit them for NRC review.

NEI has not issued its lessons-learned report and will inform the staff of its schedule for issuing the report.

Clarification of Positions

97-22

(1) Dec. 24, 1996, NEI Letter - Active/Passive Determinations

The NRC staff commented on the NEI letter dated December 24, 1996, which discussed the active versus passive determination of several electrical devices. Fuses, transformers, and indicating lights were considered in the NEI letter to be active components and outside the scope of aging management

DF03

PROJ 690

review. The NRC staff proposed that in addition to these components performing their other intended functions, maintaining electrical continuity in these components provides a basis for considering them passive and thus subject to aging management review. NEI disagreed with this staff interpretation and stated that they believe these components should be categorized as active based on the philosophy the staff used to specifically exclude components from aging management review in §54.21(a)(1)(i) of the license renewal rule (e.g., the rule specifies that motors, breakers, switchgear, relays, switches, and others are excluded from the scope of review). The staff stated that it would consider the industry position and present its response in a letter to NEI.

(2) NEI Index Item No. 96-14: Bolting, Piece-Parts or Components

NEI identified this topic as needing guidance in NEI 95-10 as Item No. 96-14 in Revision 7 of its Index of Questions/Topics submitted by letter dated December 6, 1996. The staff requested clarification. NEI indicated that it intended to propose guidance for evaluating three categories of bolting that it had identified:

1. Bolting in components within the scope of aging management review (passive) that contribute to maintaining an intended function (e.g., bolts on a manway gasket that contribute to maintaining the intended function of pressure boundary). NEI stated that an applicant would need to perform an aging management review for this category of bolting.

2. Bolting in components not within the scope of aging management review (active). NEI stated that an applicant would not need to perform an aging management review for this category as the bolting in this case is considered to be a piece-part of the component.

3. Bolting on the portion of a component within the scope of aging management review that does not contribute to maintaining the passive intended function of the component (e.g., bolting on the pump impeller which is considered outside the scope of aging management review whereas the pump casing is within the scope of review). NEI stated that an applicant would not need to perform an aging management review for this category.

This topic is not intended to address bolting associated with supports. This bolting is evaluated along with the support members.

(3) Industry Comments on the Regulatory Guide Implementation Plan

The staff requested that NEI clarify the basis for its comment requesting revision of the implementation plan described in draft RG, DG-1047, Section C.1. The comment requested deletion of all items except the list of tasks that will not be completed at the time the renewed license is issued and the schedule for their completion. NEI indicated that the remainder of the items requested are not needed in the application implementation plan because

commitments regarding aging management programs will be contained in the required Updated Final Safety Analysis Report (UFSAR) supplement. Detailed lists of commitments are maintained in the applicant's onsite commitment tracking system.

NEI Presentation of Proposed Guideline Revisions

NEI provided the following documents at the meeting:

Attachment:

3. Complete rewrite of NEI 95-10, Section 4.2, to address the requirements and level of detail in the application for aging management programs and the required demonstrations and to discuss crediting existing programs. This submittal addresses NEI Index Item Nos. 96-04, 05, 06, 08, 15 (partial), and 21.

4. Revision of NEI 95-10, Section 6.0, to address level of detail for the UFSAR supplement. This submittal addresses NEI Index Item Nos. 96-08 and 09.

5. Topic Paper: License Renewal UFSAR Supplement Level of Detail
   Example: UFSAR Supplement for License Renewal

6. Topic Paper: Level of Detail in an Application for a New Inspection Program
   Example: Description of the Augmented Inspection for License Renewal of the Alloy 82/182 Clad Flow Meter Section

7. Revision of NEI 95-10, Section 4.3, to address NEI Index Item No. 96-15 on application of inspections for license renewal

8. Discussion on How Gaskets, Seals and Other Similar Consumables are Addressed in the Integrated Plant Assessment (IPA)

The NRC staff indicated that it would review the handouts and respond to NEI.

Proposed NRC Staff Resolution of Comments

The NRC staff distributed Attachment 9 which contains proposed revisions to the draft RG and NEI 95-10 for the following:

(1) Response to NEI Letter Dated December 24, 1996

The staff provided proposed revisions to changes made by NEI in the areas of scoping and timing for performing evaluations of time-limited aging analyses.

(2) Matters Not Subject to Review

The revisions reflect the staff's proposed acceptance of the public comments received.

(3) Environmental and Editorial

The proposed revisions reflect the staff's acceptance of the public comments received. The staff also indicated that based on SECY-96-259, dated December 19, 1996, the current schedule for issuing the environmental RG addressing the requirements for implementing the license renewal rule is July 97, draft, and March 1998, final. The environmental standard review plan addressing implementation of the license renewal rule is scheduled for August 1997, draft, and August 1998, final.

(4) Quality Assurance Programs for Documentation

The revisions reflect the staff's proposed acceptance of the public comments received.

Schedule

(1) Periodic Working Level and Senior Management Meetings

Working level meetings between the NRC staff and NEI are scheduled for January 30; February 10, 20, and 27; and March 6, 1997. NEI believes that senior management meetings between the NRC and NEI are beneficial and a potential meeting was discussed around February 14, 1997.

(2) Commission Briefing (and)
(3) Issue Final Regulatory guide

The schedule for issuing the final RG in August 1997 requires resolution of comments by February 14, 1997, and preparation of the final RG and NEI 95-10 for approval by March 14, 1997. A Commission briefing on the status of license renewal activities, which will include development of the final RG, is scheduled for the week of June 16, 1997. The final RG will be submitted to the Commission for approval.

Stephen T. Hoffman

Stephen T. Hoffman, Senior Project Manager
License Renewal Project Directorate
Division of Reactor Program Management
Office of Nuclear Reactor Regulation

Project 690

Attachments: As stated

cc w/atts: See next page

NUCLEAR ENERGY INSTITUTE (NEI)

Project No. 690

cc: Mr. Dennis Harrison
U.S. Department of Energy
NE-42
Washington, DC 20585

Mr. Douglas J. Walters
Nuclear Energy Institute
1776 I Street, NW
Suite 300
Washington, DC 20006

Mr. Richard P. Sedano, Commissioner
State Liaison Officer
State of Vermont
Department of Public Service
112 State Street
Drawer 20
Montpelier, Vermont 05620-2601

DISTRIBUTION w/attachments:
Central File
PUBLIC
PDLR R/F
ACRS

E-Mail
FMiraglia/AThadani (FJM)/(ACT)
RZimmerman (RPZ)
TMartin (TTM)
DMatthews (DBM)
SNewberry (SFN)
SHoffman (STH)
EJordan (JKR)
PShemanski (PCS)
BPrato (RJP2)
PTKuo (PTK)
JVora (JPV)
SFlanders (SCF)
JMoulton (JPM1)
SLee (SSL1)
WLiu (WCL2)
JFCostello (JFC2)
RCorreia (RPC)
RWessman (RHW)
JStrosnider (JRS2)
SDroggitis (SCD)
GLainus (GCL)
JCraig (JWC1)
SPeterson (SRP)
RJohnson (REJ)
CSerpan (CZV)
TSpeis (TPS)
JMoore/EHoller (JEM)/(EJH)
GMizuno (GSM)
GHolahan (GMH)
BSheron (BWS)
MMalsch (MGM)
MMayfield (MEM2)
AMurphy (AJM1)
HBrammer (HLB)
LShao (LCS1)
GBagchi (GXB1)

AGENDA

JANUARY 21, 1997

NRC - NEI MEETING
LICENSE RENEWAL REGULATORY GUIDE AND INDUSTRY IMPLEMENTATION GUIDELINE

- License renewal demonstration program lessons-learned reports
  - (1) NRC: NUREG-1568
  - (2) NEI
- Clarification of positions
  - (1) Dec. 24, 1996, NEI letter - active/passive determinations
  - (2) NEI Index Item No. 96-14: bolting, piece-parts or components
  - (3) Industry comments on the regulatory guide implementation plan
- NEI presentation of proposed guideline revisions
- Proposed NRC staff resolution of comments
  - (1) Response to NEI letter dated Dec. 24, 1996
  - (2) Matters not subject to review
  - (3) Environmental and editorial
  - (4) Quality assurance programs for documentation
- Schedule
  - (1) Periodic working level and senior management meetings
  - (2) Commission briefing
  - (3) Issue final regulatory guide

ATTACHMENT 1

ATTENDANCE LIST
NRC MEETING WITH THE NUCLEAR ENERGY INSTITUTE
JANUARY 21, 1997

	NAME	ORGANIZATION
1.	Steve Hoffman	NRC/NRR/DRPM/PDLR
2.	David Masiero	GPU Nuclear
3.	Barry Tilden	BGE
4.	Robert Gill	Duke Power
5.	Doug Walters	NEI
6.	Fred Polaski	PECO Energy
7.	Ray Baker	Southern Company
8.	Bill Mackay	Entergy - ANO
9.	Paul Shemanski	NRC/NRR/DRPM/PDLR
10.	Bob Prato	NRC/NRR/DRPM/PDLR
11.	P. T. Kuo	NRC/NRR/DPPM/PDLR
12.	Jit Vora	RES/EMMEB
13.	Scott Flanders	NRC/NRR/DRPM/PDLR
14.	John Moulton	NRC/NRR/DRPM/PDLR
15.	Sam Lee	NRC/NRR/DRPM/PDLR
16.	Winston W. C. Liu	NRC/NRR/DRPM/PDLR
17.	J. F. Costello	RES/DET
18.	Tricia Heroux	for EPRI
19.	Alice Carson	Bechtel
20.	Barry Sullivan	NUS INFO. Services

Attachment 2

4.2 Aging Management Reviews

Part 54 Reference

54.21(a)(3)

(3) For each structure and component identified in paragraph (a)(1) of this section, demonstrate that the effects of aging will be adequately managed so that the intended function(s) will be maintained consistent with the CLB for the period of extended operation.

Although there are several approaches to performing an aging management review, two general methods are described in this guideline. Each method can be used to demonstrate that the effects of aging are being managed such that the intended function of the structure or component is maintained consistent with the CLB for the period of extended operation. Each method in this section is applicable to evaluations of individual structures, components or commodity groupings. Although only two methods are included in this guideline, other methods may be acceptable provided that the demonstration required by Section 54.21(a)(3) is accomplished.

The first method is an aging management review of a structure, component or commodity grouping. If aging effects requiring management are identified, an aging management review will typically identify one or more aging management programs, either existing or new to be credited in order to meet the requirements of 10CFR54.21(a)(3). Three different types of aging management programs are described. These are (1) preventive or mitigative aging management programs, (2) condition monitoring, and (3) performance monitoring.

The second method utilizes the results of previous aging management reviews of a similar component or structure. These aging management reviews may have been either found acceptable by the NRC, or may be in other reports which have not been reviewed by the NRC. Examples of aging management reviews found acceptable by the NRC include the license renewal topical reports developed by the Nuclear Steam Supply System (NSSS) Owners' Groups and previous plant specific applications. Examples of reports which are valuable sources of information, but which have not been reviewed by the NRC, are the DOE Aging Management Guidelines. More information on use of previous reviews can be found in Section 4.3.

The aging management review is developed by first understanding how the structure, component, or commodity grouping performs its intended function(s). Second, the aging effects associated with the structure, component, or commodity grouping are identified. Third, it is determined if analysis can be used to demonstrate that the results of the aging effect are such that the intended function(s) is maintained during the period of extended operations. Finally, if needed, the applicable plant programs are identified, and the ability to detect, mitigate, or prevent the aging effects are reviewed. It may be necessary to propose enhancements to existing programs or to

develop new aging management programs if existing programs are not adequate for managing the effects of aging for the period of extended operation. The assembled information is then used to demonstrate that the effects of aging will be managed so that the structure or component intended function(s) will be maintained for the period of extended operation. (Figure 4.2-1 depicts this process.)

4.2.1 Identify and Assess Aging Effects

In Section 3.2 of the guideline, the system, structure and component intended functions were identified, and in Section 4.1 the structure's or component's intended function(s) were determined. There are various techniques used to identify and assess aging effects. For some structures and components, design margins and/or material properties are known and can be reviewed. In such cases, an analysis may be sufficient to demonstrate that the effects of aging are managed. For other structures and components, performance or maintenance history is available and can be reviewed to assist in demonstrating that the effects of aging are managed. These and other considerations point to the need to determine the appropriate level of review for the type of structure, component, or commodity grouping and plant-unique conditions.

Assessing the appropriate level of review involves examining information from various investigations and developing a scope statement to describe the depth of review that is needed for the structure, component, or commodity grouping. As appropriate, the assessment should include the following activities:

- Assemble information relative to the structure or component material and service environment. If the components are made from different materials or are subject to distinctly different aging effects, a separate review of each may be needed.

- Identify the aging effects potentially affecting the structures' and components' ability to perform their intended function(s). This review is intended to identify potential aging effects on the basis of assembled industry information, as well as plant specific determinations (e.g. from maintenance histories.)

- Review the design or material properties to determine if analysis can demonstrate that the effects of aging are sufficiently managed to maintain the capability of the structure or component to perform its intended function during the period of extended operation. Of particular interest are parameters such as corrosion allowance, fatigue cycles, loading conditions, fracture toughness, tensile strength, dielectric strength, radiation exposure, and environmental exposure.

- Review and assess the operating and maintenance history for the structure or component. The focus of the review may include the service duty, operational transients, past failure, or unusual conditions that affect the performance or condition of the structure or component. Of particular interest is how the performance or degraded condition of the structure or

component affects the capability of the structure or component to perform its intended function and its risk significance. The review also may include an examination of repairs, modifications, or replacements for relevance to aging considerations.

- Identify design features that prevent or mitigate aging of the structure or component. The plant may have been designed with equipment which serves to prevent age related degradation of structures or components. These design features may be used as part of an analysis to show that specific aging effects are not plausible.

- Identify installation and maintenance practices that are accepted as preventing or mitigating the aging effect of concern. Generally, the maturity of these maintenance practices is sufficient that programmatic verification is not warranted.

To determine the aging effects of concern, the applicant should consider and address the materials, environment, stressors, and industry operating experience that are associated with each structure, component or commodity grouping under review. In many instances, the proper selection of materials for the operating environment results in few, if any, aging effects of concern. For example, loss of material due to erosion /corrosion is not an aging effect of concern for stainless steel piping, while it could be for carbon steel pipe. Also, carbon steel pipe is subject to loss of material due to general corrosion in a raw water environment, whereas certain stainless steels are not. However, there should be various programs and activities available to manage the loss of material in the carbon steel pipe.

In addition to the consideration of materials, environment, and stressors, the applicant should consider and address the plant-specific CLB, plant operating experience, plant design features, plant maintenance practices, and existing engineering evaluations in order to identify the aging effects of concern for the structure or component subject to an aging management review. The aging effects of concern are those that have been identified using the considerations described above, and that adversely affect the structure and component such that the intended function(s) may not be maintained consistent with the CLB for the period of extended operation. Aging effects may not be plausible because of environmental conditions, design features, or maintenance practices. For example, cathodic protection is a design feature that can prevent external corrosion of underground equipment, thus eliminating loss of material as a plausible aging effect. An example of an installation or maintenance practice is the application of nonoxidizing compounds to electrical cable terminations to prevent oxidation, thus preventing high electrical resistance from occurring.

Water chemistry control practices, while effective at preventing loss of material due to corrosion on the inside wall of pipe, are credited as a plant program to manage the effects of aging. Although water chemistry control practices may be required by Technical Specifications and have been implemented for the life of the plant, they require positive actions by personnel and equipment to maintain the water chemistry within specified limits. General corrosion could occur if water chemistry parameters are outside of the allowed operating ranges.

By analysis, an applicant may be able to demonstrate that the results of an aging effect are such that the intended function(s) of the structure or component' will be maintained under all CLB design conditions. The demonstration ultimately should conclude that there is reasonable assurance that the CLB will be maintained for the period of extended operation and therefore that the effects of aging need not be managed. An inspection for license renewal, as discussed in Section 4.4, may be utilized to verify specific design values, demonstrate that an aging effect is occurring as anticipated, or that an aging effect is not significant. Monitoring industry experience, such as the results of inspections for license renewal at other plants, may also contribute to the demonstration in these cases.

4.2.2 Identify Plant Aging Management Programs

Plant programs that apply to the structures, components, or commodity groupings should be reviewed to determine if they include actions to detect, mitigate or prevent the effects of aging. The Rule does not contain specific requirements for features of an acceptable aging management program. These features will vary depending on the structure, component or commodity grouping. Three types of aging management programs described in this document are (1) those that prevent or mitigate aging effects, (2) those that monitor the condition of the structure or component, and (3) those that monitor the performance of the structure or component. These are described in sections 4.2.2.1, 4.2.2.2, and 4.2.2.3, respectively. Aging management programs that do not fit into one of these three types may also be acceptable, as long as the program is effective in managing the effects of aging. Any program to be credited as an aging management program for license renewal must be implemented in accordance with the plant's administrative procedures. Corrective actions resulting from the aging management program may be controlled by the aging management program or, more commonly, will be controlled by the plant's existing corrective action program.

The review of the aging management program must include verification that the program is sufficient to prevent, mitigate, or detect age related degradation so that the intended function(s) will be maintained. This includes methods, techniques, alert values, action values, direction for expanded sampling, etc. The details relating to these techniques for each aging management program are further discussed below. This information should be included in the aging management review.

4.2.2.1 Preventive or Mitigative Aging Management Programs

A preventive aging management program is one that will limit the degradation of the structure or component to such small quantities that the degradation is not detectable. A preventive aging management program may also be referred to as a program that precludes age related degradation from occurring.

A mitigative aging management program is one that will limit the degradation of the structure or component to quantities that are detectable, but sufficiently small that the structure or component

characteristic or property of concern will not be challenged during the lifetime of the plant. A mitigative aging management program may also be referred to as a program that inhibits age related degradation.

Other than the difference that aging is detectable in a mitigative program, as compared to a preventive program, both types will have the same characteristics and attributes. They are generally existing programs which have been in effect since the plant was initially operated, but may be new programs or enhancements to existing programs.

These programs are effective because they control the environment of the structure or component so that the environmental conditions needed for aging to occur do not exist. The environment of concern can include chemistry conditions inside a pipe, external environments, or use of coatings to prevent the aging from occurring. The applicant must perform an assessment of the aging effects and operating history and show that age related degradation can only be caused by adverse process fluid properties or environmental conditions. The program must include parameters of the environment (e.g. secondary water chemistry oxygen level) which are monitored periodically, and for which action and alert values have been established to restore the environment to within specified limits in a timely manner when deviations from acceptable values occur. The parameter that is monitored may either provide direct or indirect indication of the condition of the component or structure. Indirect indications are used when the environment being controlled cannot be visually observed or directly monitored (e.g. inside of pipe). Indirect indications monitor chemical properties of the fluid or environmental conditions that are related to the aging effect of concern. Direct indications are used when the environment can be visually observed or directly monitored (e.g. external surfaces).

Although an aging management program that is designed to prevent or mitigate the effects of aging is expected to preclude or sufficiently inhibit the effects of aging, a verification of the effectiveness of the preventive or mitigative aging management program may be needed. Some manner of condition monitoring, such as an inspection to measure wall thickness of a pipe, may be needed in conjunction with the preventive or mitigative aging management program to demonstrate that the effects of aging are being adequately managed. An example of this is feedwater chemistry control program, along with a one time inspection to determine wall thickness of the feedwater piping.

An example of a preventive aging management program is control of the chemistry of the sodium pentaborate solution in the standby liquid control system of a BWR to prevent corrosion of the storage tank, piping, valves and pumps.

Another example of a preventive aging management program is the application of coatings or paint to a component to prevent degradation due to general corrosion. Specifically, this could be the painting of the exterior of a heat exchanger that could experience external corrosion due to condensation, caused by the cold cooling water on the shell side of the heat exchanger.

Refer to Table A for additional examples of preventive or mitigative aging management programs.

4.2.2.2 Condition Monitoring Aging Management Programs

A condition monitoring program is one which monitors, inspects, tests, or measures the physical condition of the SC to detect from direct information degradation due to the effects of aging. A condition monitoring program performs an inspection of the physical property of the SC. The inspection may or may not be intrusive. The inspection technique used by the condition monitoring program may be any one of a wide range, including visual, ultrasonic measurement, physical measurement of size, hardness measurement, radiographs, etc. The technique used must be appropriate for the aging effect of concern, the SC being considered, the significance of the aging effect, the rate of degradation, and the frequency of the inspection. The program may also use a sampling approach. An example of an aging management program that demonstrates how these considerations are properly factored in to the program is the erosion/corrosion program which monitors for loss of material in piping.

Condition monitoring programs range from sophisticated inspection techniques to very simple inspections. The ultrasonic inspection for pipe cracking is an example of a sophisticated, technically complex condition monitoring program. Visual inspection of piping supports under ASME Section XI Subsection IWF is an example of a condition monitoring program using relatively simple techniques.

Refer to Table B for additional examples of condition monitoring aging management programs.

4.2.2.3 Performance Monitoring Aging Management Programs

A performance monitoring program is one which monitors process parameters to provide an indication of the condition of the system, structure, or component with respect to the aging effect of interest. The performance monitoring program may be an aspect of normal plant operations, or it may be a test that is performed periodically to ascertain the performance of a component or structure. A performance monitoring program must include action or alert values, or the trending of changes in parameter values, which will result in corrective action being initiated.

An example of an existing performance monitoring program is the technical specification testing of the control room ventilation system to verify its flow capacity.

Two cases are discussed below where performance monitoring may be credited as an aging management program. There may be other cases which are not discussed here.

Case 1

For some components, the design of the plant, as delineated in the CLB, provides for the use of performance monitoring to detect degradation of components by monitoring system parameters. An example of this is the leakage from the reactor coolant pressure boundary of a BWR. The CLB provides for measurement of leakage from the RCPB by the rate of pump outs from the containment sumps. Alert and action values are established in the technical specifications at levels which result in corrective action (e.g. plant shutdown) before the degradation results in a condition that is outside the design of the plant systems. For this approach to be used, the CLB must include allowances for degraded condition of the passive structure or component, while allowing the intended function(s) to be accomplished. To establish this, the applicant will need to develop the following information:

- Review the CLB and identify that the degraded performance or condition contemplated by the CLB considered the characteristics of the relevant aging effects,

- Perform an assessment of the aging effects, operating history, and attributes of the monitoring program and show that the degraded performance will be manifested over a time period where the aging effects will be detected by the monitoring program activities, and

- Show that the considerations in the CLB are the basis for performance monitoring criteria and that the criteria will result in timely corrective action so that the intended function(s) will be maintained consistant with the plant specific CLB design basis conditions.

Case 2

For some structures and components in the scope of license renewal, the design conditions for these structures and components do not include all of the loading conditions, including seismic, required for safety related systems. For example, the fire protection systems at some plants are designed to National Fire Protection Association standards, and are not designed for seismic conditions. For these structures and components, a less rigorous monitoring program is needed because the applicant must only be able to demonstrate system functionality under normal operating conditions. In fact, performance monitoring will provide adequate demonstration of the intended function of the system, structure or component in many cases. The following criteria should be used by an applicant to determine if performance monitoring will provide adequate assurance that functionality is maintained:

- Review the CLB and show that the design of the system, structure, or component was only required to consider normal loads,

- Perform an assessment of the aging effects and attributes of the monitoring program and show that the program activities ensure that aging effects (such as leakage) affecting condition will be detected,

- Show that the monitoring criteria will result in corrective action so that the system intended function(s) will be maintained, and

- Confirm that the operating history provides supporting justification for the conclusion that the performance monitoring program will detect the aging effects and result in timely corrective action.

Refer to Table C for additional examples of performance monitoring aging management programs.

4.2.3 Demonstrate That the Effects of Aging Are Managed

The key part to a license renewal application is the demonstration that the effects of aging will be adequately managed during the extended period of operation, as required by 10 CFR 54.21(a)(3). The demonstration is the final conclusion, based on the technical work performed in the aging management reviews, that the applicant will be able to adequately manage the effects of aging so that the intended functions of the structures and components in the scope of license renewal will be maintained consistent with the CLB. The demonstration should include the following five elements:

- The aging effect(s) of concern.

- The aging management program(s) that is being or will be used to manage the aging effect.

- The connection between the aging management program, the aging effect and the intended function. This is also described as "the link."

- A description of how the aging management program has or will mitigate, prevent, or detect the effect of aging so that the intended function will be maintained. More details on this element are provided in sections 4.2.3.1 through 4.2.3.3 for the different types of aging management programs.

- A clear statement that the aging management program will manage the effects of aging in the future so that the intended function will be maintained, including an explanation of the justification.

When describing the aging management program, and how it is or will be effective at managing the effects of aging, the demonstration may be made either from the viewpoint of actual operating experience, or from the view of attributes of the program. For an existing program that

is being credited as an aging management program, the use of plant operating experience is the preferred approach, but either approach is acceptable. Actual experience (e.g. wall thickness measurements and trend analysis) may be used for an existing program to demonstrate that the effects of aging are being managed so that the intended function is maintained during the period of extended operation.

Aging management programs that have been implemented as a result of rules, operating license conditions (including technical specifications), and industry codes have, in general, the following attributes:

- the requirements are generic and have been developed through an industry wide consensus process;
- the requirements have been in place many years and have been refined over the years based on actual operating experience;
- regulatory guidance for implementing the requirements is available;
- regulatory oversight via inspection and enforcement is provided;
- revisions to the generic requirements are made through an industry wide review and comment process;
- revisions to the plant specific programs are made within the bounds established by the generic requirement;
- differences between plant programs and the generic requirements are addressed via NRC review of either exemptions or relief requests.

The level of detail required to demonstrate that these types of aging management programs are effective is small in comparison to the other types of aging management programs described in the following paragraphs because of the extensive regulatory oversight not only in the development of the regulatory requirement, but also in the oversight of the plant specific implementation.

Aging management programs that have been implemented in response to NRC generic communications have, in general, the following attributes:

- the requested activity is communicated by either an NRC bulletin or Generic Letter which has undergone substantial internal NRC review and approval;
- the NRC initially reviews many of the plant specific implemented programs;
- ongoing regulatory oversight is provided by inspection and enforcement;

- the licensee is responsible for the review and approval of changes to the implemented programs in accordance with established plant procedures.

More detail is required in the demonstration that these types of programs are effective because of the ability of the licensee to effect changes to the programs without direct regulatory oversight.

Aging management programs that have been implemented by plant management and are not in response to a regulatory requirement or communication have, in general, the following attributes:

- little or no regulatory guidance;

- little or no regulatory oversight;

- program elements are based on plant and/or industry operating experience;

- revisions to the programs are made in accordance with established plant processes.

Even more detail is necessary in this type of program because of the limited regulatory involvement in either the development of the initial program or in the ongoing oversight of the program.

Aging management programs that are implemented as a result of the aging management reviews being performed to develop a license renewal application are generally of two types: those that are implemented and will continue as ongoing programs and those that are one-time activities. In both instances, the demonstration requires that as complete a description of the aging management program or activity as possible be included in the aging management review. This information should be provided from the perspective of 'what will be done.' In addition, following the implementation of the program, the licensee may provide reports to the NRC, on an agreed upon schedule, to document what has been done and what results have been obtained.

For a new program that is being proposed for license renewal, because no data exists, the attributes of the program will have to be used to demonstrate that the effects of aging will be managed so that the intended function will be maintained. The attributes of the aging management program can be demonstrated by several means:

- demonstration that the techniques have been used successfully on similar SCs at the plant

- demonstration that the techniques have been used successfully on similar SCs at other nuclear power plants

- if the techniques have not been used in similar situations before, the applicant may have to demonstrate that the aging management program is capable of preventing, mitigating, or detecting the aging effect of concern.

The last approach described may require development of equipment and procedures, testing, validation, verification, and training.

4.2.3.1 Preventive or Mitigative Aging Management Programs

To demonstrate that the effects of aging are being adequately managed by an existing aging management program, the applicant must show that the aging management program has been and will continue to either prevent or mitigate the age related degradation. This can be done by using historical evidence either from the plant or from other nuclear plants that shows that the aging management program has been effective, and that the conditions under which the aging management program has been effective in the past will be retained into the future.

For example, control of chemistry of the sodium pentaborate solution in the standby liquid control system of a BWR is effective at preventing corrosion of the subcomponents in the system. Over twenty years of industry experience has shown that with proper control of the chemistry of the solution, there have been no age related failures of equipment on this system. Existing chemistry monitoring programs have been and will continue to be adequate to properly maintain the solution chemistry parameters within specified limits. No inspections of the equipment will be needed because the existing aging management program is adequate to prevent age related degradation.

For a new aging management program, the applicant must show that other aging management programs that use this approach have been successful at preventing or mitigating the effects of aging. If this type of aging management program has never been implemented in the past, the applicant will have to demonstrate how the techniques to be implemented will be able to prevent or mitigate the effects of aging. The demonstration may have to include detailed information on how the aging management program works, and may have to include provisions for condition monitoring until the capabilities of the aging management program are demonstrated in the power plant.

An example of a new preventive aging management program is the painting of the exterior of a heat exchanger that has experienced external corrosion due to condensation, caused by the cold cooling water on the shell side. The degradation has been monitored and is not severe enough to cause concern with the operability of the heat exchanger presently. However, if the loss of material would continue for the remaining life of the current license plus an additional twenty years, the ability of the heat exchanger to perform its intended functions (i.e. pressure boundary) could be questioned. To avoid this problem, the applicant could elect to paint the heat exchanger to prevent further loss of material. The heat exchanger paint condition could be monitored by any of several existing programs, such as system manager inspections, which would detect deterioration of the paint before additional loss of material of the heat exchanger shell could occur. Deterioration of the paint would be corrected using the plant's corrective action program.

4.2.3.2 Condition Monitoring Aging Management Programs

To demonstrate that the effects of aging are being adequately managed, the applicant must show that the condition monitoring program is capable of detecting the effect of aging such that there is reasonable assurance that the intended function of the structure or component will be maintained. For existing programs, this can be shown by using actual results of inspections performed in the plant.

An example of an existing condition monitoring program is the inspections performed to identify wall thinning of pipe in service water systems, in response to Generic Letter 89-13. These inspection programs use various techniques (e.g. UT and RT) to detect loss of material of the pipe wall, and include appropriate alert and action values, and criteria for additional sampling or more frequent inspections based on actual results. Wall thinning which reaches alert or action values initiates corrective actions in accordance with the direction in Generic Letter 89-13 and the plant's existing corrective action programs.

For a new program, several approaches can be used. If the technique has been used on other components, the applicant must show that the techniques can be used to detect degradation of the component in question. For instance, the applicant may elect to perform an augmented ISI inspection of a component which is not included in the scope of the Inservice Inspection Plan using existing techniques and code requirements. If the technique has been used in other nuclear power plants, but is new to the applicant, the applicant must show that the proposed techniques are the same as used at other plants, and that other factors, such as material and environment, support the use of this technique. Doing this will allow the applicant to credit the experience at other plants. If the new program uses techniques that have not been used elsewhere before, the applicant will have to demonstrate how the condition monitoring technique can detect the aging effect. This may require actual demonstration to validate and verify the adequacy of the technique. An example of this is the development of the ultrasonic techniques presently used to detect cracks in piping, which had an extensive testing, validation, verification and training program.

For example, a new program that measures the thickness of the wall of an underground buried tank, compares the wall thickness to alert values, and trends the data would be described in terms of the attributes of the program, but no objective evidence could be provided in the demonstration because the program had not yet been initiated.

The use of attributes to make the demonstration would also be acceptable for an existing program, especially if the attributes of the program were well understood and the program had been successful in the past at adequately managing the effects of aging. An example of an existing program, similar to the previous paragraph, would be an existing inspection program for an underground tank. The program could be described in terms of actual data or in terms of attributes, because underground tank wall thickness measurement using UT is a well understood technique and is accepted as being able to detect degradation of the tank wall.

Another example of a new condition monitoring program is the one-time volumetric inspection of the Alloy 82/182 clad flow meter section of the hot leg in B&W plants. The inspection is needed because the Alloy 82/182 cladding may have some susceptibility to primary water stress corrosion cracking during the period of extended operation. The inspection will be performed for one flow meter section in one plant during the fourth interval of the plant's Inservice Inspection Plan. This augmented inspection will comply with the version of the ASME Code that has been approved by the NRC and incorporated into 10 CFR Part 50.55a at the start of the fourth inservice inspection interval. After this inspection is complete, and assuming that no degradation is identified, other applicants with similar components will be able to credit this inspection to demonstrate that stress corrosion cracking is not a plausible aging effect. Further discussion of this example is provided in Appendix C as Example XXXX.

4.2.3.3 Performance Monitoring Aging Management Programs

To demonstrate that the effects of aging are being adequately managed, the applicant must show that the performance monitoring program is capable of detecting degradation due to aging such that the intended function is maintained, even when the degradation is considered. For some SSCs, this will mean that the system intended function is maintained, even when the component has degraded. The applicant must be able to demonstrate the correlation between the parameter being monitored and the effect of aging of concern. Performance monitoring is useful where the design of the plant provides for on line monitoring of parameters which are linked to the aging effect of concern.

An example of an existing performance monitoring program is the technical specification testing of the control room ventilation system which assures that the system flow requirements are satisfied. The flow testing ensures that the control room ventilation system can provide sufficient flow through the system, confirming that the duct work, expansion joints, and other components in the flow path are performing their intended function of directing air flow through the control room. Trending of the test results will identify any degradation of performance, and initiate any needed corrective actions if performance should degrade. The control room ventilation system can be demonstrated to maintain its intended function, even if degradation of components has resulted in identified leakage from the system. A gasketed joint may be leaking, but the system design has sufficient margin that even with the leakage from the gasketed joint, the system is capable of performing its intended function under all design conditions. The gasketed joint, when performing as designed, prevents leakage from the ductwork but does not perform any structural functions.

For a new performance monitoring program, the applicant must be able to demonstrate that the proposed performance monitoring program will be able to detect the degradation of concern. Several approaches can be used for this. The applicant can show that the technique has been used in similar applications at the plant, or elsewhere in the industry. Also, the applicant may chose to show that the proposed program is capable of detecting the effects of aging by actual performance

under simulated conditions to show the correlation between the parameters being monitored and the aging effect of concern.

Table A
Examples of Preventive or Mitigative
Aging Management Programs

Initiator	Preventive or Mitigative
Rule, Operating License Condition, Technical Specification, Industry Code	Reactor Coolant System Chemistry Secondary System Water Chemistry (PWR) Feedwater Water Chemistry (BWR) Oil/Fuel Oil Testing
NRC Generic Communication: Bulletin or Generic Letter	Bolting Degradation (GL 91-17), Resolution of GSI 29
Licensee Developed	Bolting Maintenance Practices Coating Maintenance Ambient Temperature/Radiation Monitoring •

Table B
Examples of Condition Monitoring
Aging Management Programs

Initiator	Condition Monitoring
Rule, Operating License Condition, Technical Specification, Industry Code	ASME B&PV Code, Section XI, including IWE/IWL Tendon Surveillance Testing Reactor Vessel Integrity Reactor Vessel Internals Inspections Steam Generator Tube Inspections Reactor Vessel Neutron Embrittlement Specimens Surveillance Fatigue Monitoring Program
NRC Generic Communication: Bulletin or Generic Letter	Erosion-Corrosion (GL89-08) Boric Acid Wastage(GL88-05) SQUG Walkdowns (GL87-02) Corrosion of River Water Piping Inspections (GL89-13)
Licensee Developed	Service Water Liner Inspections Alloy 600 Inspections Reactor Vessel Internals Bolting Tank Inspections Cable Monitoring and Testing Structural Inspections Inspections for License Renewal

Table C
Examples of Performance Monitoring
Aging Management Programs

Initiator	Performance Monitoring
Rule, Operating License Condition, Technical Specification, Industry Code	Ventilation System Testing Leakage Monitoring (RCS and others) Fire Protection Plan (System FunctionalTesting) Maintenance Rule
NRC Generic Communication, Bulletin or Generic Letter	Service Water Heat Exchanger Performance Monitoring (GL89-13) Boraflex Monitoring (GL96-04) Spent Fuel
Licensee Developed	Performance Testing for License Renewal

p:\fwp\lr\sect 4.2 new rev 1

TABLE NOS.
96-08
96-09
DRAFT

TABLE 6.0-1

SAMPLE APPLICATION FORMAT

GENERAL INFORMATION (54.17,.19)

1. Name of Applicant (5 0.3 3 (a))
2. Address of Applicant (50.33(b))
3. Description of Business or Occupation of Applicant (50.3')(c))
4. Organization and Management of Applicant (50.33(d)) [address also 5 4.17 (b)]
5. Class of License Applied for, the use to which the facility will be put, the period of time for

which the license is sought (50.33(e))

6. Earliest and latest dates for alterations, if proposed (50.33(h))
7. Listing of regulatory agencies having jurisdiction and appropriate news publications

(50.33(i))

8. Conforming changes to the standard indemnity agreement (54.19 (b))
9. Restricted Data Agreement (54.17 (f, g))
10. Reference to Exhibits A, B, C, and D

EXHIBIT A - TECHNICAL INFORMATION (54.21 (a)-(c))

1.0 Introduction
- 1.1 Scope
- 1.2 CLB changes during NRC review [54.21(b)]
- 1.3 Time Limited Aging Analysis Evaluation[54.21(c)]
  - 1.3.1 TLAA [identification & resolution]
  - 1.3.2 Exemptions [identification & resolution]

2.0 Integrated Plant Assessment - Structure/Component Identification (54.21 (a)(1) - (2))
- 2.1 Introduction
- 2.2 Structure/Component Selection Process per 54.21(a)(2)
- 2.3 List and identify results per 54.21 (a)(1)

3.0 Integrated Plant Assessment - Demonstration that the Effects of Aging Will Be Adequately Managed (54.21 (a)(3))
- 3.1 Introduction
- 3.2 Demonstration that the Effects of Aging Will Be Adequately Managed

EXHIBIT B - FSAR SUPPLEMENT (54.21 (d))

EXHIBIT C - TECHNICAL SPECIFICATIONS (54.22)

EXHIBIT D - ENVIRONMENTAL INFORMATION (54.23)(50.53(c))

53

6.1 Formal Application

The following information, required by 54.17 and 54.19 is consistent with the information contained in the facility's original operating license application as delineated in IOCFR50.33(a)through(e),(h),and(i):

1. Name of Applicant
2. Address of Applicant
3. Description of Business or Occupation of Applicant
4. Organization and Management of Applicant
   Note that the license renewal rule prohibits any person who is a citizen, national, or agent of a foreign country, or any corporation, or other entity which the Commission knows or has reason to know is owned, controlled or dominated by an alien, a foreign corporation, or a foreign government, from applying for and obtaining a renewed license.
5. Class of License, the Use of the Facility and the Period of Time for which the License is Sought.
6. Earliest and latest dates for alterations, if proposed
7. Listing of regulatory agencies having jurisdiction and appropriate news publications
8. Confomffig changes to the standard indemnity agreement
9. Restricted data agreement
   Pursuant to 54.1 7 69 and (g): Ifthe orplication contains Restricted Data or *other defense information, it must be prepared in such a manner that all Restricted Data and other defense information are separatedfrom unclassifiedinformationinaccordancewithlOCFR50.336). Aspartofits application and in any event prior to the receipt ofrestricted Data or the issuance ofa renewed license, the applicant shall agree in writing that it will notpermit any individual to have access to Restricted Data until an investigation is made and reported to the Commission on the character, association, and loyalty of the individual and the Commission shall have determined that permitting such persons to have access to Restricted Data will not endanger the common defense and security. The agreement ofthe applicant in this regard is part ofthe renewed license, whether so stated or not.*
10. Reference to Exhibits A, B, C, and D

The contents specified for the application are the minimum set required by the regulations. Upon issuance of the renewal operating license, this part of the application becomes an historical document with no further revisions.

55

6.2 Exhibit A - Technical Information

Exhibit A of the renewal application contains the technical information that the NRC staff will review to determine if the effects of aging on certain long-lived passive structures and components are being managed such that the associated intended function(s) is maintained consistent with the CLB in the period of extended operation. The Technical Information provided in Exhibit A must be of sufficient detail in order that the NRC may make the finding that there is reasonable assurance that the activities authorized by the renewal license will continue to be in accordance with the CLB (54.29(b)).

The application should contain clear and concise presentations of the required information. Confusing or ambiguous statements and unnecessarily verbose descriptions do not contribute to expeditious technical review. Claims of adequacy of aging management review should be supported by technical bases. The information provided in the application must be of sufficient detail to support the demonstration that the effects of aging are being adequately managed for the period of extended operation. The level of detail needed will be influenced by the technical argument presented for the specific structure, component or commodity grouping being discussed. The level of detail must be sufficient so that the application clearly shows the relationship between the aging effect(s) of concern, how the aging management program will adequately manage the effects of aging, and how the intended function will be maintained. For an existing program that is well understood, less detail and information is needed than for a new program that has been developed for license renewal.

The information contained in the application is based on the information contained in plant specific documentation as previously described in Sections 3.3, 4.5 , and 5.3 of this guideline. The license renewal application is not a summary, or condensed version of the aging management reviews performed by the applicant. The license renewal application is a separate document that will contain the

56

information needed to demonstrate that the applicant will be able to manage the effects of aging for the structures and components subject to aging management review during the period of extended operation. The application may incorporate by reference other existing documents, such as the plant specific UFSAR, owners group reports and industry reports. Although the application must contain sufficient detail, it will not include detailed procedures or calculations which were used in support of the aging management reviews performed as described in section 4.0.

The contents of this portion of the application parallel the requirements stated in 54.21 (a)-(c). Once the Renewal Operating License is issued by the NRC, this exhibit of the application is a licensing historical document and is not required to be updated.

The information provided in Exhibit A will provide the basis of the changes made to both the FSAR and the Technical Specifications. The FSAR Supplement and the Technical Specifications changes are provided in Exhibits B and C, respectively.

Exhibit A is organized into three sections or chapters: Introduction, Integrated Plant Assessment - Structure and Component Selection, and Integrated Plant Assessment - Demonstrating That the Effects of Aging Will Be Adequately Managed. Guidance on each of these chapters is provided in the following subsections.

6.2.1 Introduction

The first Chapter of Exhibit A is the Introduction which includes the following subsections: Scope of Exhibit A, CLB Changes during NRC review, and Time Limited Aging Analysis Evaluations.

57

The subsection Scope of Exhibit A identifies that Exhibit A will address requirements from 54.21 (a) - (c).

6.2.1.1 Identify CLB Changes

Part 54 Reference

54.21(b)

CLB changes during NRC review of application. Each year following submittal of the license renewal application and at least 3 months before scheduled completion of the NRC review, an amendment to the renewal application must be submitted that identifies any change to the CLB of the facility that materially affects the contents of the license renewal application, including the FSAR supplement.

The Rule requires that the application be updated yearly and at least three months before scheduled completion of the NRC review, to identify any changes to the facility's current licensing basis that materially affect the application. These changes are provided to the NRC in the form of an amendment to the license renewal application. For the initial renewal application submittal, this provision does not apply. It is a place holder.

The CLB Changes subsection will contain any CLB changes that occur during NRC review of the application that materially affect the contents of the license renewal application including the FSAR supplement.

6.2.1.2 Time Limited Aging Analysis Evaluations

The Time-Limited Aging Analyses subsection provides the information required by 54.21(c).

The application shall include a list of time-limited aging analyses, as defined by 54.3. The application should include the identification of the affected systems, structures, and components, an explanation of the time dependent aspects of the calculation or analysis, and a discussion of the TLAAs impact on the associated aging effect.

The application shall include a demonstration that (1) the analyses remain valid for the period of extended operation, (2) the analyses have been projected to the end of the period of extended operation, or (3) the effects of aging on the intended function(s) will be adequately managed for the period of extended operation.

The identification of the results of the time limited aging analysis review, which may be

provided in tabular form, may reference the section in the Integrated Plant Assessment -

59

Demonstrating That The Effects of Aging Will Be Adequately Managed chapter where more details of the actual review and disposition (as required by 54.21(c)(1)(i)-(iii)) are located.

Summary descriptions of the evaluations of TLAAs for the period of extended operation shall be included in the FSAR supplement (Exhibit B).

The application shall include a list of plant specific exemptions granted pursuant to 50.12 and in effect that are based on TLAAs as defined in 54.3. The application shall include an evaluation that justifies the continuation of these exemptions for the period of extended operation.

The text may reference approved topical reports or regulatory guides, as applicable.

6.2.2 Integrated Plant Assessment - Structure and Component Identification

The second chapter of Exhibit A contains information related to the identification of structures and components subject to an aging management review as described previously in Section 4.0 of this guideline.

The application shall identify and list the structures, components, or commodity groupings subject to an aging management review.

Pursuant to 54.21 (a)(2), the application shall include a description and justification of the methods used to identify and list those structures and components that are within the scope of license renewal and subject to an aging management review.

Reference may be made to approved topical reports or regulatory guides as appropriate.

6.2.3 Integrated Plant Assessment - Demonstrating That The Effects of Aging Will Be Adequately Managed

In the third chapter, the applicant must demonstrate that the effects of aging will be adequately managed so that the intended function(s) will be maintained consistent with the CLB during the period of extended operation. The demonstration must be performed for all of the structures and components identified in the second chapter of Exhibit A. The information contained in this chapter will be based on the aging management reviews prepared as described in Section 4.0 of this guideline. However, the license renewal application is not a summary or condensation of the aging management reviews. The license renewal application is a separate document that will contain the information needed to demonstrate that the applicant will be able to manage the effects of aging for

the structures and components within the scope of license renewal during the period of extended operation.

The following information on the aging management review should be included in the renewal application:

- Description of the structures and components being evaluated. The description should be adequate so that the reader can understand the functional purpose of the structure or component in the design and operation of the power plant. A listing of all functions of the component or structure is not required. The description may include component identification numbers, where applicable. For commodity groupings, the description should provide either a narrative description of the extent of the components included in the commodity grouping, or a listing of the components included in the commodity grouping. For example, if the commodity grouping is for building structural steel, the description should include the listing of the buildings that are within the scope of the evaluation . If the component is pipe supports, the description should include information on the type of support (e. g. spring can hanger) and the systems included (e.g. all systems, Residual Heat Removal). Reference to previous information filed with the NRC may be made.

- Identification of the systems, structures, or component intended functions, as appropriate. The intended function(s) are those that were determined as described in section 4.1.2.

- Identification and assessment of the aging effects (or mechanisms, if appropriate), including a description of materials of construction and service environment. The description of the materials of construction and service environment should provide sufficient detail to support the demonstration that the applicant will be able to adequately manage the effects of aging. For example, if the aging effect is loss of material due to general corossion in carbon steel pipe containing feedwater , the specific pipe schedule, pipe diameter, and pipe length will not influence the demonstration. However, the water chemistry conditions will be a consideration. Normal water chemistry conditions should be described in sufficient detail in this section to bound the conditions the feedwater pipe will experience. Operating experience should also be considered in order to identify applicable aging effects for the structures and components.

- Identification and description of aging management programs necessary for renewal. The amount of detail needed to adequately describe the aging management program will depend on the nature of the program. Existing programs which are well

understood by the industry, and which exist to manage the effects of aging of concern during the current term will need minimal description. New programs which are developed to support license renewal and which have not been implemented prior to submittal of the application, will require sufficient information to demonstrate that the program will be able to adequately manage the effects of aging during the period of extended operation. Section 4.2.3 provides more information on the demonstration for different types of aging management programs, and Appendix C provides examples.

Not needed in the application is information on administrative controls or corrective actions. These will normally be implemented by existing plant administrative procedures and controls, as specified in the plant's technical specifications and UFSAR, and also in some cases, by the aging management program.

Consistent with the guidance in Section 4.2.3, sufficient information should be provided, or incorporated by reference, on the techniques and alert values to support the finding that the effects of aging will be adequately managed. However, the details of the program, such as details of the methods used and inspection techniques, and specific numerical alert values, are not needed in the application. This information is needed in the information retained on site by the applicant.

- Demonstration that aging management programs, either new, existing or enhanced, will adequately manage the effects of aging such that the intended functions will be maintained consistent with the CLB for the period of extended operation. The key part to a license renewal application is the demonstration that the effects of aging will be adequately managed during the extended period of operation, as required by 10CFR54.21(a)(3). The demonstration is the final conclusion, based on the technical work performed in the aging management reviews, that the applicant will be able to adequately manage the effects of aging so that the intended functions of the structures and components in the scope of license renewal will be maintained consistent with the CLB. The demonstration should include the following five elements:

    - The aging effect(s) of concern.

    - The Aging Management Program(s) that is being or will be used to manage the aging effect. Alternately, the analysis that shows that there are no aging effects of concern should be summarized.

    - The connection between the Aging Management Program, the aging effect and the intended function. This is also described as "the link."

    - A description of how the Aging Management Program has or will mitigate, prevent, or detect the effect of aging so that the intended function will be maintained. This should be a technical argument that the program is effective, but should not include actual values of alert or action parameters, calculations, corrective actions, detailed

descriptions of inspection techniques, or other details that are not pertinent to the demonstration. More details on this are provided in section 4.2.3 for the different types of aging management programs.

- A clear statement that the Aging Management Program will manage the effects of aging in the future so that the intended function will be maintained, including an explanation of the justification.

Section 4.2.3 provides more detailed information on the contents of the demonstration.

Summary descriptions of the programs and activities for managing the effects of aging shall be included in the FSAR supplement (Exhibit B) at a level of detail consistent with the current FSAR. The results included in Exhibit A determine and technically support the changes proposed to the FSAR in Exhibit B and the changes proposed to the plant technical specifications as contained in Exhibit C.

Time-limited aging analyses that have been identified pursuant to 54.21 (c) should be evaluated and the results may be provided with the appropriate structure or component.

6.3 Exhibit B - FSAR Supplement

Part 54 Reference

54.21(d)

An FSAR supplement. The FSAR supplementfor thefacility must contain a summary description of the programs and activitiesfor managing the effects ofaging and the evaluation of time-limited aging analysesfor the period of extended operation determined by paragraphs (a) and (c) of this section, respectively.

The contents of the FSAR supplement will be based on the material provided in Exhibit A. Section 54.21 (d) of the Rule requires that a summary description of the programs and activities for managing the effects of aging for the period of extended operation as determined by the IPA review and the evaluation of time limited aging analyses for the period of extended operation be included in the FSAR supplement.

In some instances, summary descriptions of programs and activities already exist in the plant FSAR. The applicant may chose to incorporate these existing pages of the FSAR by reference or may choose to include them in the application for the convenience of the

63

reader.

In addition, a brief licensing summary of the license renewal proceeding may be located in the Introduction chapter of the FSAR. The renewal license application process is historical information and the brief summary may be of assistance to future readers.

The process to review and approve this change to the plant FSAR should be the same as that which the applicant presently utilizes.

Once the Renewal Operating License is approved by the NRC, the material contained in Exhibit B should be incorporated into the FSAR. The FSAR is a living document and should be maintained in accordance with applicable regulations and plant procedures.

Refer to Appendix D for examples of the level of detail needed in acceptable FSAR supplements.

6.4 Exhibit C - Technical Specifications

No changes

6.5 Exhibit D - Environmental Information

No changes

64

65

6.0 RENEWAL OPERATING LICENSE APPLICATION FORMAT AND CONTENT

A sample application format is presented in Table 6.0-1. Contents of the application are divided into two parts. (1) general information required by 54.17 and 54.19 and (2) technical information required by 54.21, 54.22, and 54.23. As presented, the general information is the formal part of the application with the technical information being attached as Exhibits. The Exhibits are presented in the same order that they appear in the license renewal rule application.

Topic Paper
Licensee Renewal UFSAR Supplement
Level of Detail

January 2, 1997

Introduction

The License Renewal Rule, 10 CFR 54, §54.21 (d), requires that the renewal application include a Supplement to the Updated Final Safety Analysis Report (UFSAR) which will contain summary descriptions of the programs and activities for managing the effects of aging and the evaluations of time-limited aging analyses for the period of extended operation. These programs and activities form part of the basis for the finding the NRC will make when the renewal license is issued.

The objectives of placing summary descriptions in the UFSAR are twofold:
1) To make the credited programs and activities visible, and
2) To allow effective regulatory oversight

In addition, any changes to the UFSAR should be made such that a reader is able to readily identify where programs and activities credited to manage the effects of aging are described.

General guidance for the level of detail for the summary descriptions of aging management programs and time-limited aging evaluations in the Supplement to the UFSAR is provided in the following discussion. Following this general guidance, an example of a supplement to the UFSAR is provided.

Discussion

Revisions to Chapter 1, which are considered optional, may be provided as an aid to the reader to tell the history of license renewal for the plant. The text may include a forward reference to Chapter 13, Conduct of Operations, where the summary descriptions of aging management programs will be provided. In addition, the list of time-limited aging analyses may be taken from the application for renewal license and provided as an aid to identify where the actual evaluation results are provided elsewhere in the UFSAR. Reference may be made to the application and the NRC safety evaluation.

The remaining chapters of the UFSAR should be revised to include updated time-limited aging analyses and minor editorial changes to forward reference to the summary descriptions of aging management programs which will be contained in Chapter 13, Conduct of Operations. Reference should also be made to the pertinent sections of the application and the NRC safety evaluation. These references will provide the reader with additional supporting information which has been submitted on the docket.

If the results of the time-limited aging analysis currently exist in the UFSAR, then the UFSAR Supplement need only revise the existing information to reflect the evaluation for license renewal. If the time-limited aging analysis does not currently exist, then a summary of the evaluation needs to be developed and included in the UFSAR Supplement. The summary of the evaluation should contain enough information that the reader can obtain a general understanding of the evaluation. Reference to the pertinent sections of the renewal license application and the NRC safety evaluation will provide the reader with additional information.

The exact location of the summary descriptions of credited aging management programs in the FSAR is plant specific. For this example, Chapter 13, Conduct of Operations has been chosen as the singular location for the summary descriptions of the credited aging management programs. A singular location is recommended in order to make the credited programs and activities more visible to the reader. Locating the summary descriptions in one location also reduces confusion to the reader, as many programs affect more than one system and having the summary description in each applicable chapter might result in inconsistencies in describing each program.

The level of detail in describing the credited aging management programs will vary depending on whether or not it is an existing program and what the regulatory document for the program is. Regulatory documents include:

1) regulations, operating license condition, or plant technical specifications; and
2) plant commitments to generic letters and bulletins.

Existing and new programs will be credited as required by the aging management review which is documented in the renewal application and reviewed and approved in the NRC safety evaluation. For each summary description of aging management program provided in the UFSAR Supplement, reference should be made to the pertinent sections of the renewal license application.

For aging management programs that are new or that have not been previously described in docketed correspondence, a clear statement of the purpose of the program along with the scope of components included and the aging effects that will be managed should be included in the Supplement to the UFSAR. These programs will become enforceable due to their existence as commitments in the renewal application and in the UFSAR. If the implementation details are to be included in another document, such as an ASME Code Section XI Inservice Inspection Plan, then this document may be referenced from the UFSAR. Reference should be made to the appropriate administrative controls program described in the UFSAR or the plant Technical Specifications. Reference should also be made to the pertinent sections of the renewal license application and the NRC safety evaluation for further details of the credited program.

For aging management programs established in response to regulations, operating license condition, or plant technical specifications, NRC review and approval of the actual program elements as well as regulatory oversight of the implementation, generally exists.

These programs are enforceable due to their existence in regulatory documents as requirements. The summary description to be contained in the UFSAR Supplement should identify the program and reference the applicable regulation, license condition, or technical specification. Any further detail is not considered necessary as the regulation, operating license condition, or plant technical specification requirement would supersede any licensee statement made in docketed correspondence or the UFSAR. Reference should be made to the appropriate administrative controls program described in the UFSAR or the plant Technical Specifications. Reference should also be made to the pertinent sections of the renewal license application and the NRC safety evaluation for further details of the credited program.

For aging management programs created in response to generic letters or bulletins, the level of detail should be consistent with docketed statements provided in response to the generic letter or bulletin. These programs presently are enforceable due to their existence in licensing documents as commitments. The purpose of the program, scope of structures, systems and components included, and the aging effects managed should be identified in the Supplement to the UFSAR. The emphasis of the description should be on what the objectives of the program are rather than precisely how the program objectives will be accomplished as the methods may change over time as technology changes. Reference should be made to the appropriate administrative controls program described in the UFSAR or the plant Technical Specifications. Reference should also be made to the pertinent sections of the renewal license application and the NRC safety evaluation for further details of the credited program.

The attachment to this topic paper provides several summary descriptions of aging management programs that would be included in the Supplement to the UFSAR.

EXAMPLE

UFSAR SUPPLEMENT

for

LICENSE RENEWAL

Chapter 1

Section 1.1 Introduction - add paragraph describing the fact that [plant] has received a Renewal Operating License and that the programs and activities to manage the effects of aging are identified at the beginning of appropriate chapters and sections and the summary descriptions are provided in Section 13. 7.

Add a table that summarizes the Time-Limited Aging Analyses (TLAA) that have been identified and shows where in the UFSAR the revised TLAA is located. TLAA will be described in the individual chapters associated with each structure and component.

Reference needs to be made to renewal license application and NRC safety evaluation.

Table 1.x Time-Limited Aging Analyses

Structure, Component / TLAA	Evaluation Conclusion	UFSAR Section (plant specific)
1. **Reactor Building Liner Plate and Penetrations** / Thermal Fatigue	Existing analyses remain valid for the period of extended operation.	
2. **Reactor Building Tendons** / Loss of Prestress	Evaluation in progress. Results to be provided at a later date.	
3. **Reactor Vessel** / Embrittlement, Upper Shelf Energy Toughness, Thermal Shock, PTS, under clad crack growth.	Evaluation in progress. Results to be provided at a later date.	
4. **Reactor Vessel Internals** / Loss of fracture toughness, fatigue	Evaluation in progress. Results to be provided at a later date.	
5. **Reactor Coolant System** / Fatigue	Evaluation in progress. Results to be provided at a later date.	
6. **Class 1 Components** / Fracture Mechanics Analyses for ISI reportable indications (fatigue)	Evaluation in progress. Results to be provided at a later date.	
7. **Once Through Steam Generator** / Vibration, lifetime	Evaluation in progress. Results to be provided at a later date.	
8. **Reactor Coolant Pump Flywheel** / Fatigue	Evaluation in progress. Results to be provided at a later date.	
9. **Non-Class 1 Piping** / Thermal Fatigue	Evaluation in progress. Results to be provided at a later date.	
10. **Electrical Equipment** / Environmental Qualification	Evaluation in progress. Results to be provided at a later date.	
11. **Polar Crane** / Fatigue, heavy load cycles	Evaluation in progress. Results to be provided at a later date.	
12. **Spent Fuel Rack Boraflex** / Aging of non-metallic material	Evaluation in progress. Results to be provided at a later date.	

Chapter 13
Revise Section 13.1.1 to reflect the renewal of the [plant] operating licenses.

Add Section 13.7, Aging Management Programs, which provides the summary descriptions all of the programs and activities to manage the effects of aging of the structures and components within the scope of license renewal. This section would contain the list of commitments for future inspections that are required.

13.7. AGING MANAGEMENT PROGRAMS

An Integrated Plant Assessment (IPA) has been conducted on [plant] in accordance the requirements contained in 10 CFR Part 54. The results of this IPA were summarized in [plant] Application for a Renewal Operating License, which was submitted to NRC for review and subsequently approved [reference]. On [date], a renewal operating license was issued to permit [plant] to continue operating until [date].

Summary descriptions of the programs credited for managing the effects of aging are required by §54.21(d) to be included in the UFSAR. The following summary descriptions are provided in response to this requirement. These programs and activities provide reasonable assurance that the effects of aging will be adequately managed so that the current licensing basis will be maintained throughout the licensed life of [plant].

13.7.1 BORIC ACID CORROSION SURVEILLANCE PROGRAM

The Boric Acid Corrosion Surveillance Program provides assurance that boric acid corrosion does not lead to excessive degradation of the RCS pressure boundary and that there will be a low likelihood of abnormal leakage, rapidly propagating failure, or gross leakage. The program was established in response to Generic Letter 88-05 and the requirements of ASME Section XI. The program elements include:

1) determination of the principle locations where leakage could cause degradation of reactor coolant pressure boundary components;
2) procedures for locating small leaks;
3) procedures for evaluating boric acid induced corrosion;
4) and corrective actions to prevent similar types of corrosion.

The program is implemented by written procedures that are maintained in accordance with administrative controls which are summarized in the [plant] UFSAR, Section 13.5. [Reference Application Exhibit A, Section x]

13.7.2 CHEMISTRY PROGRAM

13.7.2.1 PRIMARY

The Primary Water Chemistry Program provides controls for monitoring primary water chemistry to minimize the corrosion in the Reactor Coolant System. The program includes:

1. Specifications for each chemistry parameter;
2. Sampling frequency for each chemistry parameter;
3. Corrective actions in the event established acceptance criteria are not met.

The program is implemented by written procedures that are maintained in accordance with administrative controls which are summarized in the [plant] UFSAR, Section 13.5.
[Reference Application Exhibit A, Section x]

13.7.2.2 SECONDARY WATER CHEMISTRY

The Secondary Water Chemistry Program provides controls for monitoring secondary water chemistry to inhibit steam generator tube degradation. The required program elements are contained in [plant] Technical Specification 5.5.11 (ITS). The Secondary Water Chemistry Program is implemented by written procedures as required by [plant] Technical Specification 5.4.
[Reference Application Exhibit A, Section x]

13.7.3 DIESEL FUEL OIL TESTING

[plant]Technical Specification 5.5.14 provides the requirements to establish, implement, and maintain a Diesel Fuel Oil Testing Program and includes appropriate testing requirements. The Diesel Fuel Oil Testing Program is implemented by written procedures as required by [plant] Technical Specification 5.4.
[Reference Application Exhibit A, Section x]

13.7.4 FIRE PROTECTION PROGRAM

The Fire Protection Program has been established in accordance with the requirements contained in the [plant] Facility Operating Licenses. The program is described in [plant] UFSAR Section 9.5.1.
[Reference Application Exhibit A, Section x]

13.7.5 INSERVICE INSPECTION PROGRAM, 10 CFR §50.55a(g)

The purpose of the [plant] Inservice Inspection Program is to assure the continued structural integrity of ASME Code Class 1, 2 and 3 components. Requirements have also been established by ASME Section XI, Subsection IWE, for steel liners of concrete

containments.(See Section 13.7.9 for a summary description of the [plant] program.) In addition, requirements have been established by ASME Section XI, Subsection IWL, covering tendons and Reactor Building concrete inspections to assure their continu functioning.(See Section 13.7.11 for a summary description of the [plant] program)

The [plant] Inservice Inspection program is implemented and maintained in accordance with the requirements of §50.55a(g). The Inservice Inspection Program for each inspection interval is submitted to the NRC for review and approval prior to the start of each inspection interval. The inspection program is implemented by written procedures that are maintained in accordance with administrative controls which are summarized in the [plant] UFSAR, Section 13.5.
[Reference Application Exhibit A, Section x]

13.7.5.1 ASME SECTION XI REQUIRED INSPECTIONS AND ACTIVITIES

The [plant] Inservice Inspection Program has been established in accordance with the requirements of 10 CFR §50.55a(g, Inspections are being performed in accordance with the 1989 Edition of ASME Section XI, no addenda for ASME Code Class 1, 2, and 3 components in [plant]. The examinations are being performed to the extent practicable within the limitations of design, geometry and materials of construction and component.

13.7.5.2 AUGMENTED INSPECTIONS AND ACTIVITIES FOR LICENSE RENEWAL

13.7.5.2.1 Hot leg flow nozzle Alloy 82/182 cladding inspection

later
(BAW-2243A, SER Section 4.1)
[Reference Application Exhibit A, Section x]

13.7.5.2.2 Small Bore RCS piping inspection

later
(BAW-2243A, SER Section 4.1)
[Reference Application Exhibit A, Section x]

13.7.6 INSPECTION PROGRAM FOR CIVIL ENGINEERING STRUCTURES AND COMPONENTS

The purpose of the Inspection Program for Civil Engineering Structures and Components is to monitor and assess the condition of civil engineering structures and components in order to assure that they are capable of performing their intended functions. The scope of this inspection program includes, but is not limited to:

1. nuclear safety-related structures which enclose, support, or protect nuclear safety-related systems and components, and
2. non-safety related structures whose failure may prevent a nuclear safety-related system or component from fulfilling its intended function.

Each structure included in the scope of the inspection program is visually inspected for signs of degradation or existing structural problems. The results of each inspection are compared by a qualified engineer to established acceptance criteria. If the results of the inspection are deemed to exceed the established acceptance criteria, then appropriate corrective actions are taken.

The inspection is performed on a nominal 5 year interval. The inspection interval may be adjusted to account for refueling outages. More frequent inspections may be performed following unusual events such as flooding or seismic event.

The results of the inspection are documented in a report prepared by the personnel performing the inspections.
[Reference Application Exhibit A, Section x]

13.7.7 PIPE EROSION / CORROSION CONTROL PROGRAM

The Pipe Erosion / Corrosion Control Program is an inspection and analysis program that assures the integrity of piping susceptible to erosion / corrosion. The program has these elements:

1. The program focuses on the integrity of piping systems that are susceptible to erosion / corrosion which includes, but is not limited to those within the scope of license renewal.

2. Loss of material is detected before there is a loss of integrity of the piping pressure boundary.

3. Inspection locations have been identified and acceptance criteria have been established for each location.

4. Monitoring and trending of the inspections results by the assigned station engineer provides predictability and timely preventive actions.

5. The program is implemented by procedures which are subject to [plant] administrative controls.

[Reference Application Exhibit A, Section x; GL 89-08]

13.7.8 PRIMARY COOLANT SOURCES OUTSIDE CONTAINMENT

This program provides controls to minimize leakage from those portions of systems outside containment that could contain highly radioactive fluids during serious transient or accident to levels as low as practicable. Program requirements are provided in [plant] Technical Specification 5.5.3. The program is implemented by written procedures as required by [plant] Technical Specification 5.4.
[Reference Application Exhibit A, Section x]

13.7.9 REACTOR BUILDING CIVIL INSPECTION PROGRAM

The purpose of the Reactor Building Civil Inspection Program is to uncover any evidence of structural deterioration which may affect either the containment structural integrity or leak-tightness. Inspections of steel liners of concrete containments have been developed in accordance with the ASME Code Section XI, Subsection IWE, 1992 Edition and addenda and as required by 61 FR 41303, August 8, 1996. The examinations will be performed to the extent practicable within the limitations of design, geometry and materials of construction and component.

Instructions are provided for performing visual inspections of accessible interior and exterior surfaces of the Reactor Building and its components. Appropriate acceptance criteria have been established and corrective actions are taken when necessary. Previously identified locations of deterioration are reinspected and a determination of effectiveness of the previous corrective actions is made. The program is implemented by written procedures that are maintained in accordance with administrative controls which are summarized in the [plant] UFSAR, Section 13.5.
[Reference Application Exhibit A, Section x]

13.7.10 REACTOR BUILDING LEAKAGE TESTING PROGRAM

The purpose of the Reactor Building Leakage Testing Program is to provide assurance that leakage through the Reactor Building does not exceed allowable leakage rates, which are established in the [plant] Technical Specifications. The [plant] Reactor Building Leakage Testing Program has been established in accordance with 10 CFR 50, Appendix J, Primary Reactor Containment Leakage Testing for Water-Cooled Power Reactors. The program is implemented by written procedures that are maintained in accordance with administrative controls which are summarized in the [plant] UFSAR, Section 13.5. The following subsections briefly describe the testing and inspections that are performed.

13.7.10.1 REACTOR BUILDING INTEGRATED LEAK RATE TEST

The purpose of the Reactor Building Integrated Leak Rate Test is to measure the overall integrated leakage rate at periodic intervals as specified in 10 CFR 50, Appendix J. Leakage testing methods and additional testing requirements are also specified in Appendix J, Section III.A.

[Reference Application Exhibit A, Section x]

13.7.10.2 REACTOR BUILDING LOCAL LEAK RATE TEST

The purpose of the Reactor Building Local Leak Rate Test is to measure leakage 1) across each Reactor Building pressure retaining penetration and 2) through containment isolation valves. Leakage testing is performed on intervals as specified in Appendix J. Guidance is provided in Appendix J for identifying the appropriate test method for testing every penetration in the reactor Building. Additional testing requirements are also specified in Appendix J, Section III.B.
[Reference Application Exhibit A, Section x]

13.7.10.3 REACTOR BUILDING CIVIL INSPECTION FOR INTEGRATED LEAK RATE TEST

The purpose of the Reactor Building Civil Inspection for Integrated Leak Rate Test is to uncover any evidence of structural deterioration which may affect either the containment structural integrity or leak-tightness. [Appendix J, Section V.A.] The [plant] Reactor Building inspections are performed prior to each integrated leak rate test. Acceptance criteria have been established and corrective actions are taken in the event that degraded conditions are identified.
[Reference Application Exhibit A, Section x]

13.7.11 REACTOR BUILDING TENDON SURVEILLANCE PROGRAM

The purpose of the Reactor Building Tendon Surveillance Program is to demonstrate the integrity of the post-tensioning system including the tendons, tendon end anchorage hardware, general and adjacent concrete, and the corrosion protection (grease) system. The Reactor Building Tendon Surveillance Program meets, to the extent practical within the limitations of design, geometry and materials of construction and component, the requirements contained in ASME Section XI, Subsection IWL, 1992 Edition through 1992 Addenda and 10 CFR §50.55a.

The Reactor Building Tendon Surveillance Program manages the aging effects of concern including loss of material due to wire breakage or corrosion, loss of grease, corrosion of end anchorages and cracking of adjacent concrete. Appropriate acceptance criteria are provided and corrective actions are taken as required. The program is implemented by written procedures that are maintained in accordance with administrative controls which are summarized in the [plant] UFSAR Section 13.5.
[Reference Application Exhibit A, Section x]

13.7.12 REACTOR COOLANT SYSTEM, OPERATIONAL LEAKAGE

The purpose of the Reactor Coolant System Operational Leakage specification is to limit system operation in the presence of leakage from joint and valve interfaces to amounts that do not compromise safety. Technical Specification 3.4.13 (ITS) establishes the types

and amounts of allowable RCS leakage. Required actions in the event the leakage limits are exceeded are also provided. Surveillance requirements are also established. The program is implemented by written procedures that are maintained in accordance with administrative controls which are summarized in the [plant] UFSAR Section 13.5.
[Reference Application Exhibit A, Section x]

13.7.13 REACTOR VESSEL MATERIAL SURVEILLANCE PROGRAM

The Reactor Vessel Material Surveillance Program monitors changes in the fracture toughness properties of ferritic materials in the reactor vessel beltline region from exposure to neutron irradiation and thermal environment. The program meets the requirements contained in 10 CFR 50 Appendices G, H. The [plant] Reactor Vessel Material Surveillance Program is described in [plant] UFSAR Section 5.2.3.13.
[Reference Application Exhibit A, Section x]

13.7.14 SPENT FUEL RACK BORAFLEX MONITORING PROGRAM

The purpose of the Spent Fuel Rack Boraflex Monitoring program is to monitor the Boraflex to assure that the required 5% criticality margin is maintained for the lifetime of the spent fuel storage racks. The program includes:

1) Periodic neutron attenuation testing of a representative sample of actual Boraflex panel enclosures to established appropriate acceptance criteria;
2) Periodic sampling and analysis for silica in the spent fuel cooling water and the trending of results obtained;
3) Corrective actions to be taken in the event the Boraflex is no longer capable of maintaining the required subcriticality margin.

The program is implemented by written procedures that are maintained in accordance with administrative controls which are summarized in the [plant] UFSAR Section 13.5.
[Reference Application Exhibit A, Section x; GL 96-04]

13.7.15 TRANSIENT CYCLE MONITORING (ITS)

[plant] Technical Specification 5.5.6 establishes the requirement to provide controls to track the number of UFSAR Section [ ]cyclic and transient occurrences to assure that components are maintained within design limits. The Transient Cycle Monitoring Program is implemented by written procedures as required by [plant] Technical Specification 5.4.
[Reference Application Exhibit A, Section x]

Topic Paper
Level of Detail in an Application for a New Inspection Program

Introduction

NEI 95-10, §4.3 provides guidance on the elements of an inspection program including the use of sampling and timing of such inspections. A new inspection program may be appropriate in order to provide reasonable assurance that identified aging effects can be managed for the period of extended operation. The purpose of this topic paper is to provide an example of a new inspection program in the level of detail that would be included in a renewal license application. Prior to providing the example, background information is provided.

Background

In March 1995, the B&W Owners Group submitted BAW-2243, "Demonstration of the Management of Aging Effects for the Reactor Coolant System Piping," for NRC staff review and approval. The NRC staff reviewed this report and documented the results of the review in a Safety Evaluation attached to a letter dated March 21, 1996, entitled "Acceptance for Referencing of Topical Report BAW-2243, Demonstration of the Management of Aging Effects for the Reactor Coolant System Piping."

One of the applicant action items that has been identified in the NRC Safety Evaluation concerns the reactor coolant system flow meter section located in each hot leg of the reactor coolant system. Each flow meter section is a carbon steel piping section which contains a cladded flow meter element. The cladding material attached to the carbon steel section is Alloy 82. Alloy 182 was used to connect Alloy 600 flow rings to the Alloy 82 cladding. This cladding is referred to as 'Alloy82/182' hereafter. (Refer to Figure 2-4 of BAW-2243A attached.)

Alloy 82/182 cladding may have some susceptibility to primary water stress corrosion cracking, although Alloy 82 may have a lower susceptibility to primary water stress corrosion cracking than Alloy 182.

To determine the condition of the Alloy 82/182 clad flow meter section, the B&W Owners Group proposed, and the NRC agreed, that a one-time volumetric inspection of the Alloy 82/182 clad flow meter section of the hot leg[1] would be performed at one B&W plant at or near the end of the current license term. The schedule for the performance of this inspection at or near the end of the current license term is acceptable because there is no indication that the potential cracking is a safety concern during the current 40 year operating license.

---

[1] The NRC safety evaluation refers to this item as the 'Alloy 82/182 clad hot leg segment'. Either terminology is acceptable as they refer to the same item.

The performance of the inspection at or near the end of the current license term will provide information on the condition of the Alloy 82/182 clad flow meter section. The B&W Owners Group deferred developing details of the inspection program until an applicant submits its renewal application.

The NRC staff safety evaluation requires that the details of the inspection plan for the Alloy 82/182 clad flow meter section of the hot leg be provided in the renewal application for staff review and approval. The following example is provided to illustrate the level of detail necessary in a renewal application to meet this requirement.

Example
(level of detail to be provided in an application)

Description of the Augmented Inspection for License Renewal of the Alloy 82/182 Clad Flow Meter Section of the Hot Leg

Purpose

The purpose of the augmented inspection for license renewal is to assess the condition of the Alloy 82/182 clad flow meter section in the hot leg. The Alloy 82/182 clad flow meter section of the hot leg will be inspected to provide reasonable assurance that the reactor coolant system piping pressure boundary integrity will be maintained consistent with the CLB for the period of extended operation. (Refer to Figure 2-4 of BAW-2243A attached.)

Methodology

This proposed augmented inspection is being developed using the guidance contained in NEI 95-10, §4.3 and is required to be submitted for NRC staff review and approval as part of the renewal application. Implementation of this proposed augmented inspection is contingent upon NRC issuance of a renewed operating license for [plant[2]].

The augmented inspection will comply with the version of the ASME Code that has been approved by the NRC and incorporated into §50.55a prior to the start of the fourth inservice inspection interval. The fourth inservice inspection interval covers the last 10 years of operation in the initial operating license term. By using this edition of the ASME Code, the inspection requirements associated with this augmented inspection will be consistent with inspection requirements for the other ASME Code Section XI inspections being conducted during the fourth interval.

The Alloy 82/182 clad flow meter section of one hot leg will be inspected. In the event that there are multiple units on a single site, the augmented inspection may be performed on any one of the units, if all of the units are similar in design. An evaluation of the results of this inspection will determine whether additional inspections are warranted.

Scheduling of the specific inspection date will be specified in the [plant] Inservice Inspection Plan for the fourth interval. Performing this augmented inspection in the first or second period of the fourth inservice inspection interval meets the timing requirement contained in the NRC's Safety Evaluation dated March 21, 1996 that the inspection be performed at or near the end of the current license. Performing the augmented inspection at this time also permits subsequent inspections to be performed, if necessary, prior to the end of the current operating license. The performance of this inspection at or near the end of the current license term is acceptable because there is no indication that the potential cracking is a concern during the current 40 year operating license.

---

[2] The name of the specific plant which submits this augmented inservice inspection plan for license renewal should be inserted in locations indicated by square brackets: '[ ]'.

[Plant] will perform the augmented inspection using ultrasonic techniques. Previous experience has shown that ultrasonic inspection techniques are effective in identifying indications in reactor coolant system piping. As required by ASME Code Section XI, an inspection calibration block will be manufactured in accordance with the edition of ASME Code Section XI specified for the fourth interval [plant] Inservice Inspection Plan.

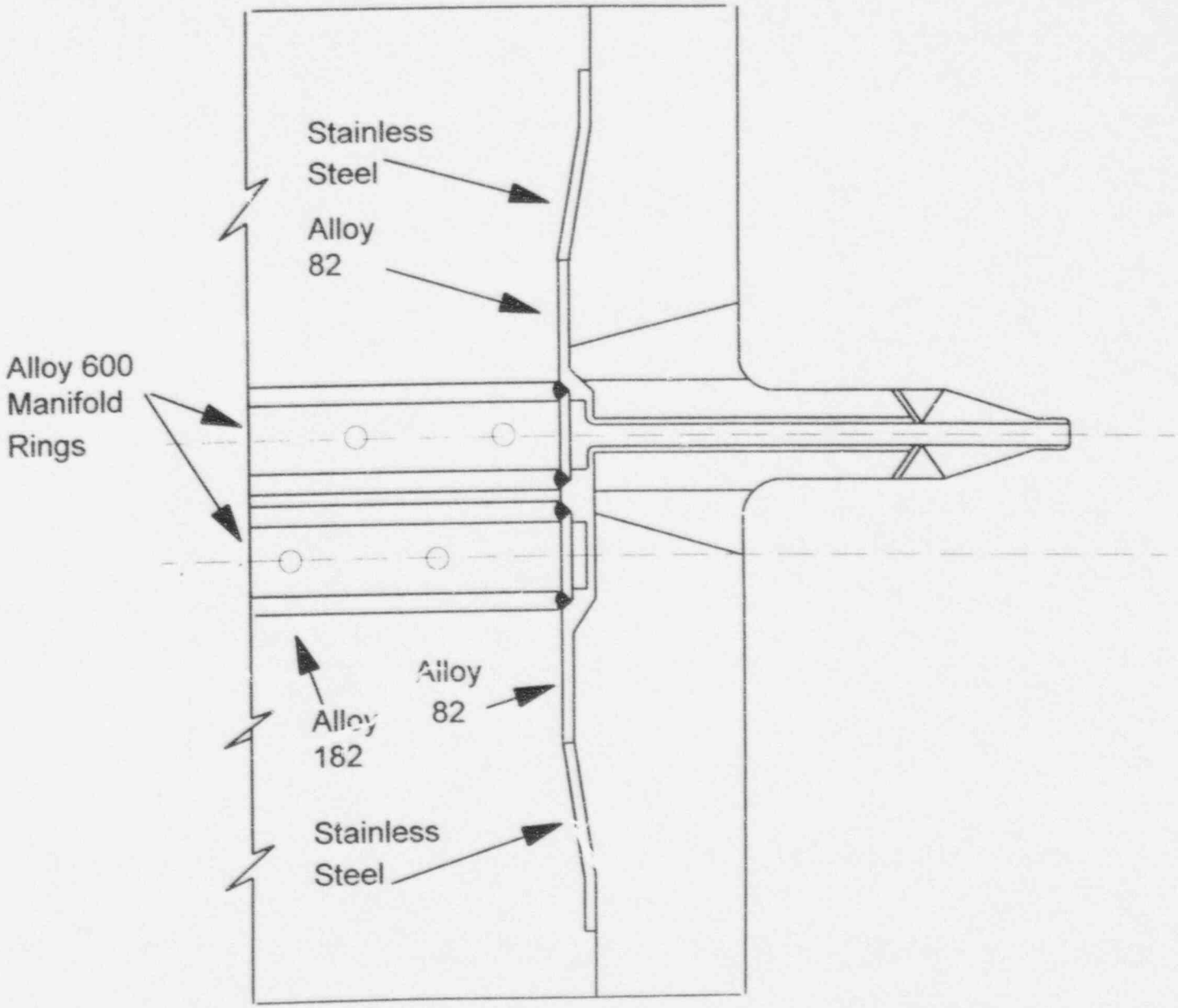
Appropriate acceptance criteria will be developed using the edition of ASME Code Section XI specified for the fourth interval [plant] Inservice Inspection Plan. The results of the augmented inspection will be evaluated against the established acceptance criteria using methods considered acceptable to comply with the requirements of the specified edition of the ASME Code Section XI. All augmented inspection results will be reported to the NRC within 90 days after the completion of the outage in which the inspection was conducted, as currently required by ASME Code Section XI, IWA-6230.

Corrective actions will be taken in accordance with the edition of the ASME Code Section XI applicable to the [plant] Inservice Inspection Plan for the fourth interval. Indications may be determined to be acceptable for the remaining life of the plant or may need to be repaired. If fracture mechanics analysis is performed to determine acceptance, then the analysis will be submitted to the NRC for review and approval prior to unit startup. The need for any further actions, including the need for any additional inspections, will be considered following the review of the results of the initial inspections by [plant].

Submittal of Augmented Inspection Plan for License Renewal

Within 12 months after the issuance of a renewed operating license for [plant], or as included in the [plant] Inservice Inspection Plan for the Fourth Interval, whichever is later, a complete description of the proposed augmented inspection for license renewal of the Alloy 82/182 clad flow meter section of the hot leg, including the additional information to be specified later as noted above, will be submitted to NRC for review and approval.

Figure 2-4 Flow Meter Assembly Detail
(Probes Not Shown)



4.3 Application of Inspections for License Renewal

Section 4.2 discusses options for performing an aging management review. If the applicant concludes, after reviewing the options or implementing the option, that the demonstration has not achieved reasonable assurance, an inspection program for license renewal may be appropriate. This section provides guidance on the elements of an inspection program including the use of sampling and the timing of such inspections.

4.3.1 Inspection Program

The Rule does not contain any requirements for features of an acceptable inspection program. The elements of an inspection program may vary depending on the specific structure, component, or commodity grouping that is subject to aging effects of concern. However, features to consider are:

- Purpose: The inspection program should provide reasonable assurance that the specific aging effect is adequately managed or need not be managed.

- Scope: The scope of the inspection program may be a specific component, structure, or commodity grouping. The scope also may be a representative sample of a commodity grouping if justified.

- Inspection Methods: The programs should describe an inspection method that is capable of either (1) detecting the effects of aging in sufficient time to ensure ~~before~~ the structure or component would always maintain ~~lose~~ the ability to perform its intended function under design conditions, or (2) demonstrate that the structure or component intended function will be maintained during the period of extended operation without the need for an aging management program.

- Analysis of Results: The inspection program should include a methodology for analyzing the results of the inspection against applicable acceptance criteria. The methodology should be capable of determining the ability of the structure or component to perform its intended function for the period of extended operation under design conditions required by the plant-specific CLB. The results of the inspection also should be evaluated to assess whether the sample size is adequate or if it needs to be expanded.

- Corrective and Follow-Up Actions: The inspection program should discuss when corrective actions and/or follow-up activities are implemented if appropriate. As appropriate, consideration should be given to root cause analysis, actions to prevent recurrence and repair/replacement.

- Conclusion: The inspection program should include a final conclusion on whether the purpose been achieved.

4.3.2 Sampling

When the applicant determines an inspection is necessary, sampling may be used to evaluate a group of structures or components. If sampling is used, a program should be developed which describes and justifies the methods used for selecting the population and the sample size.

4.3.2.1 Population

A population is the collection of the structures or components to be inspected under a sampling plan. Selection of the population demands attention to similarity of material of construction, fabrication, procurement, design, installation, operating environments, and aging effects.

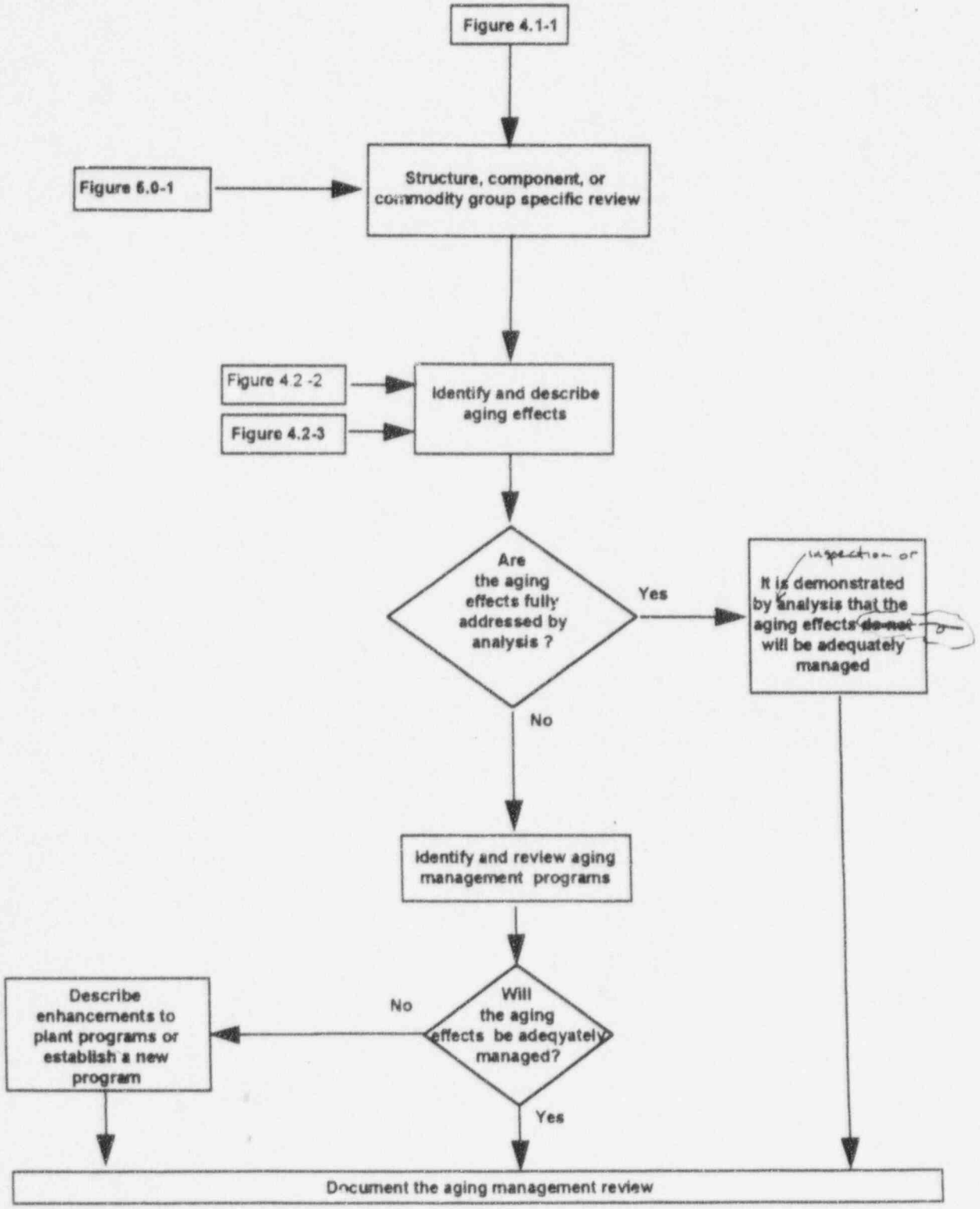
4.3.2.2 Sample Size

A sample consists of one or more structures or components drawn from the population. The applicant must determine a sample size that is adequate to provide reasonable assurance that the effects of aging on the structure or component will ~~not prevent~~ be limited to ensure the performance of its intended function during the period of extended operation will be maintained. The size of the sample should include consideration of the specific aging effect(s), location, existing technical information, materials of construction, service environment, previous failure history, etc. The sample should be biased towards locations most susceptible to the specific aging effect(s) of concern.

4.3.3 Timing of Inspections

An inspection for license renewal may be performed at various times. It may be performed prior to submittal of the license renewal application. The license renewal application may include a commitment to perform an inspection prior to the commencement of the period of extended operation. There also maybe justification for performing the inspection during the period of extended operation.

FIGURE 4.2-1
ASSURING THAT THE EFFECTS OF AGING WILL BE MANAGED
[§ 54.21(a)(3)]



Discussion on How Gaskets, Seals and Other Similar Consumables are Addressed in the IPA

Comment 96-13:

Describe how gaskets, seals and other similar consumables are addressed in the Integrated Plant Assessment for aging process. Provide a basis for this approach.

Response:

As shown in the below definitions, items such as gaskets, seals, O-rings, valve packing and pump packing are generally classified as consumables under current plant component naming conventions. NCIG-17 Guidelines for the Safety Classification of Systems, Components and Parts Used in Nuclear Power Plant Applications defines "component" and "consumable" as follows:

> "Component - An assembly of parts that is viewed as an entity for purposes of design, operation and reporting. (IEEE 803) A component is usually assigned a plant unique identification number.
>
> "Consumable" - Materials and supplies used in the process of component operation or maintenance:
> - items that are expended during the operation of components/subcomponents or that are routinely replaced during the maintenance (e.g. diesel fuel, calibration standards, O-rings, gaskets, hydraulic fluid, lubricating oil, grease, packing, and paint);
> - items that are expended in maintaining the chemical control of system process fluids (e.g. resins, additive chemicals and gases such as boron standard, pH buffer, branophenal blue and nitric acid); or
> - items that are expended during maintenance, installation, and modification activities that are generally used throughout the plant and are not included in the above (e.g. solvents layout fluid, leak-testing fluid, tape, and penetrant testing materials) (NUREG-1000)

The SOC to the LR Rule is generally silent on how consumables should be treated in the IPA process. However, the SOC at 22477 provides the following guidance on what items should be excluded from the AMR.

> However, the Commission does not believe that it can generically exclude structures and components that- (1) Do not have performance and condition characteristics that are as readily monitorable as active components; and (2) Are not subject to periodic, planned replacement. Unlike the extensive experience associated with the performance and condition monitoring of the active functions of structures and components, little experience has been gained from the evaluation of long-term effects of aging on the passive functions of structures and components. The Commission considers that the detrimental effects of aging affecting passive functions of structures and components are less apparent than the detrimental effects of aging affecting the active functions of structures and components. Therefore, the Commission concludes that a generic exclusion for passive structures and components is inappropriate at this time.

In applying this guidance to consumables, the following conclusions can be reached -
1) By the definition of consumable, these items are intended to be used during the normal operation and maintenance of the system and replaced. Therefore, consumables are subject to periodic planned replacement, but not at a calendar frequency or based on a qualified life.
2) The detrimental effects of aging on the intended function of gaskets, seals, O-rings and packing is readily apparent, i.e. observable leakage results before the deterioration proceeds to an unacceptable level (note that these parts do not support the structural integrity function of their parent component) and
3) Extensive experience has been gained with the aging of such materials since these materials are replaced routinely during the normal operation and maintenance of the plant equipment.

Based on the application of SOC guidance to consumables such as gaskets, seals, O-rings and packing, the conclusion can be reached that these consumable items should not be subject to aging management review.

Proposed NEI Guide Changes:

On page 21, section 4.1.1, insert the following paragraph after the paragraph on bolting which resulted from comment 96-14.

> "Similarly, some components which support the pressure retaining function of a system may include consumable parts such as gaskets, seals , O-rings or packing. By definition, such consumable items are intended to be used in the process of operating or maintaining system components. Additionally, these parts normally support the pressure retaining function only by limiting system leakage and the effects of aging are readily detectable by observing leakage before these effects would prevent the performance of the parent component's intended function. Therefore, the effects of aging on such consumable parts does not need to be considered during the AMR of the parent component."

PROPOSED PARTIAL NRC STAFF RESPONSE TO NEI LETTER DATED DEC. 24, 1996

ATTACHMENT 9

3.0 IDENTIFY THE SSCs WITHIN THE SCOPE OF LICENSE RENEWAL AND THEIR INTENDED FUNCTIONS

This section provides a process for determining which of the many systems, structures, and components that make up a commercial nuclear power plant are included within the scope of the Rule. The scoping process described in this guideline is at the system and structure level for the majority of the systems, structures, and components. In subsequent sections, it is assumed that scoping is performed at the system and structure level. This is not intended to imply that scoping at a component level is not allowed by the Rule. In fact, for some plants it may be easier to scope at the component level. ~~(Figure 3.0-1 is a process diagram for this section.)~~

ion under §54.4. These evaluations are are evaluated against

The scoping process should ensure that all systems, structures, and components ~~that meet~~ each of the scoping criteria ~~are identified. This is~~ necessary to make certain that all of the intended functions ~~of~~ each system, structure and component ~~are captured.~~ (Figure 3.0-1 is a process diagram for this section.)

are identified for the correct evaluation boundaries and within the scope of license renewal.

5.1.4 Timing for Evaluation of TLAA

~~In general, t~~The evaluation of TLAAs should be completed and submitted at the time of renewal application. However, there may be instances when ~~the completion of~~ the evaluation of a TLAA ~~can~~ must be deferred **until** ~~to a time~~ after the issuance of the renewal license.

~~When~~ An applicant ~~elects to defer completing the evaluation of a TLAA at the time of renewal application, the applicant should submit the following details~~ **should be provided** in the renewal application ~~to support a conclusion that the effects of aging addressed by that TLAA will be managed for a specific structure or component~~: the following information for each request to defer the evaluation of a TLAA:

- Details concerning the methodology which will be used for TLAA evaluation, and the bases for the criteria
- Acceptance criteria that will be used to judge the adequacy of the structure or component, consistent with the CLB, when the TLAA evaluation or analysis is performed,
- Corrective actions that the applicant could perform to provide reasonable assurance that the component in question will perform its intended function when called upon or will not be outside of its design basis established by the plant's CLB, and
- Identification of when the completed TLAA evaluation will be submitted to ensure that the necessary evaluation will be performed before the structure or component in question would not be able to perform its intended functions established by the CLB.
- Basis for the determination that the evaluation of the TLAA cannot be performed prior to issuance of the renewal license,
- Justification that the intended functions of a structure or component subject to the TLAA will be maintained until the TLAA evaluation has been completed and approved by the NRC staff.

PROPOSED NRC STAFF RESOLUTION OF COMMENTS

MATTERS NOT SUBJECT TO REVIEW

However, an applicant for renewal is not relieved from addressing the issue relevant to the period of extended operation as part of its renewal application.

Section 54.30 does not require a general demonstration of compliance with the CLB as a prerequisite for issuing a renewed license. Section 54.30 discusses the applicant's responsibilities for addressing safety matters under its current license, which are not within the scope of the renewal review. ~~Conversely, 10 CFR 54.30 does not support the position that~~, because aging is a continuous process, aging management being performed on structures and components within the scope of license renewal during the current term ~~is~~ may be acceptable for the period of extended operation. However, the demonstrations required by the license renewal rule must still be provided for these aging management programs.

3.2 Resolution of Current Generic Issues

Section 1.5 of NEI 95-10 provides general guidance on the resolution of generic issues related to aging management reviews for license renewal or on evaluation of TLAAs that have been identified by the NRC as unresolved safety issues (USIs) or generic safety issues (GSIs). USIs and GSIs are identified and tracked in the NRC's formal generic safety issues resolution process set forth in NUREG-0933, "A Prioritization of Generic Safety Issues."[2]

During the preparation and review of a renewal application, an applicant or the NRC may become aware of an aging management or time-limited aging analysis issue that may be generically applicable to other nuclear plants. If issues may have generic applicability (but are not yet part of the formal generic safety issues resolution process), an applicant must still address the issue in its application to demonstrate that the effects of aging are or will be adequately managed or that TLAAs have been evaluated for the period of extended operation.

---

[2]R. Emrit et al., "A Prioritization of Generic Safety Issues," NUREG-0933, January 1991. Copies may be purchased at current rates from the U.S. Government Printing Office, P.O. Box 37082, Washington, DC 20402-9328 (telephone (202)512-2249); or from the National Technical Information Service by writing NTIS at 5285 Port Royal Road, Springfield, VA 22161. Copies are available for inspection or copying for a fee from the NRC Public Document Room at 2120 L Street NW., Washington, DC; the PDR's mailing address is Mail Stop LL-6, Washington, DC 20555; telephone (202)634-3273; fax (202)634-3343.

PROPOSED NRC STAFF RESOLUTION OF COMMENTS

ENVIRONMENTAL

RG

Technical specification changes or additions that are necessary to manage the effects of aging during the period of extended operation should be included or referenced and should comply with the applicable requirements of 10 CFR Part 50. The justification for the changes or additions should also be included in the license renewal application. The NRC staff may include conditions or limitations on the renewed license in accordance with 10 CFR 54.33(b), for example, when a licensee's commitment will not be completed prior to issuance of the renewal operating license or when the NRC staff determines that the additional regulatory control is warranted to ensure that the effects of aging will be adequately managed for the period of extended operation. NEI 1.A(1) 1.A(2)

The environmental information should be provided in a supplement to the environmental report that complies with the requirements of Subpart A of 10 CFR Part 51 as required by 10 CFR 54.23. ~~The format and content of the environmental report are addressed~~ (INSERT C.1-1) in Regulatory Guide 4.2, "Preparation of Environmental Reports for Nuclear Power Stations." NEI 1.A(3)

To facilitate the NRC staff's review of an application, an implementation plan should be provided. The implementation plan is a summary of the commitments, activities, and schedules required from an applicant's license renewal reviews and evaluations and should include:

1. A list of the commitments described in the license renewal application.
2. A description of the administrative control programs used by the applicant to establish and maintain the commitments described above. The administrative controls should ensure that activities to manage the effects of aging as part of an aging management program are identified and controlled so that changes are not made that could reduce the effectiveness of the program and so that any program modifications are adequately reviewed and approved.
3. A list of tasks and task schedules pertaining to aging management programs and activities not yet in place that will be completed during or prior to the period of extended operation. These tasks may include system design changes, replacements, inspections, program enhancements, and establishing new programs.
4. A schedule for the specific actions that have been committed to be completed. This schedule should be consistent with the evaluations

6.5 Exhibit D - Environmental Information

Part 54 Reference

§54.23
Each application must include a supplement to the environmental report that complies with the requirements of Subpart A of 10 CFR Part 51

~~When the Part 51 rulemaking is complete, it is expected that §51.53(a) will require that certain environmental impacts be addressed in the Supplement to the Environmental Report contained in the renewal license application.~~

INSERT 6.5

~~The format and content of Exhibit D should be based on~~ Supplement 1 to Regulatory Guide 4.2, "Preparation of Environmental Reports for Nuclear Power Plants". ~~Exhibit D meets the requirements of §54.23.~~

Once the Renewal Operating License is issued by the NRC, the environmental information contained in Exhibit D will be maintained in accordance with applicable regulations and plant procedures.

1/10/97

RG INSERT C.1-1

The NRC staff is developing a regulatory guide and an environmental standard review plan that will provide guidance on implementing the requirements of Part 51 for license renewal. Until issued, an applicant should follow the format and content guidance contained...

NEI 95-10 INSERT 6.5

A Supplement to the Environmental Report must be submitted that complies with the requirements of §51.53(c). The supplement must address certain environmental impacts outlined in Appendix B to Subpart A of 10 CFR Part 51.

The NRC staff is developing a regulatory guide and an environmental standard review plan that will provide guidance on implementing the requirements of Part 51 for license renewal. Until issued, an applicant should follow the format and content guidance contained in...

PROPOSED NRC STAFF RESOLUTION OF COMMENTS

QUALITY ASSURANCE PROGRAMS FOR DOCUMENTATION

3.3 Documenting the Scoping Process

Section 54.37(a) of the Rule requires applicants to retain in an auditable and retrievable form all information and documentation required by, or otherwise necessary to document compliance with, the provisions of the Rule.

The results of the scoping determination should be documented in a format consistent with other plant documentation practices. The information may be maintained in "hard-copy" or electronic format. If available and appropriate, the information may be incorporated into an existing plant database. ~~The applicant should use the quality assurance program in effect at the plant when~~ documenting the results of the scoping process.

A 10CFR Part 50, Appendix B approved quality assurance program should be used to

NEI-2.B.2

The information to be documented by the applicant should include:

- A designation of the plant systems, structures, and components that are safety-related (§54.4 (a)(1)), meet the requirements of §54.4(a)(2), or meet the requirements of §54.4(a)(3);

- Identification of the all systems, structures, and components functions that meet the requirements of §54.4(b) and therefore are intended functions; and

- The information sources, used to accomplish the above, and any discussion needed to clarify their use.

4.4 Documenting the Integrated Plant Assessment

Section 54.37(a) of the Rule requires applicants to retain in an auditable and retrievable form all information and documentation required by, or otherwise necessary to document compliance with the provisions of the Rule.

The results of the IPA should be documented in a format consistent with other plant documentation practices. The information may be maintained in "hard-copy" or electronic format. It may be appropriate to incorporate the information into an existing plant database if available. ~~The applicant should use the~~ quality assurance program ~~in effect at the plant when~~ documenting the results of the IPA. NEI 2.0.2

A 10CFR Part 50, Appendix B approved should be used to

4.4.1 Documenting the Identification of Scs Subject to an Aging Management Review

Define

The information to be documented and retained by the applicant should include:

- An identification and listing of structures and components subject to an aging management review and their intended functions.

space

- A description and justification of the methods used to determine the structures and components that are subject to an aging management review.

- The information sources used to accomplish the above, and any discussion needed to clarify their use.

The information documented and retained by the applicant will form the bases of the information contained in the Application as further discussed in Section 6.0.

4.4.2 Documenting the Aging Management Review

The information to be documented by the applicant should include:

- An identification of the applicable aging effects of concern for the structures and components subject to an aging management review.

- An identification of the specific programs or activities which will manage the effects of aging for each structure, component, or commodity grouping listed.

- A description of how the programs and activities will manage the effects of aging.

- A discussion of how the determinations were made.

- A list of substantiating references and source documents.

5.3 Documenting the Evaluation of the Time Limited Aging Analyses and Exemptions

Section 54.37(a) of the Rule requires applicants to retain in an auditable and retrievable form all information and documentation required by, or otherwise necessary to document compliance with the provisions of the Rule.

The results of the time-limited aging analyses and exemptions evaluation should be documented in a format consistent with other plant documentation practices. The information may be maintained in "hard-copy" or electronic format. If available and appropriate, the information may be incorporated into an existing plant database. ~~The applicant should use the~~ quality assurance program ~~in effect at the plant when documenting~~ the results of the time-limited aging analyses and exemptions evaluation. ~~should be used to document~~ (A 10CFR Part 50, Appendix B approved NEI 2.B.2)

The information to be documented by the applicant should include:

- A list of the time-limited aging analyses and exemptions applicable to the plant.
- A description of the evaluation performed or to be performed on each plant specific TLAA and exemption.
- A general discussion of how the determinations were made.
- A list of substantiating references and source documents.
- A discussion of any assumptions or special conditions used in applying or interpreting the source documents.

The information documented and retained by the applicant will form the bases of the information contained in the Application as further discussed in Chapter 6.0.

(2) Matters Not Subject to Review

The revisions reflect the staff's proposed acceptance of the public comments received.

(3) Environmental and Editorial

The proposed revisions reflect the staff's acceptance of the public comments received. The staff also indicated that based on SECY-96-259, dated December 19, 1996, the current schedule for issuing the environmental RG addressing the requirements for implementing the license renewal rule is July 97, draft, and March 1998, final. The environmental standard review plan addressing implementation of the license renewal rule is scheduled for August 1997, draft, and August 1998, final.

(4) Quality Assurance Programs for Documentation

The revisions reflect the staff's proposed acceptance of the public comments received.

Schedule

(1) Periodic Working Level and Senior Management Meetings

Working level meetings between the NRC staff and NEI are scheduled for January 30; February 10, 20, and 27; and March 6, 1997. NEI believes that senior management meetings between the NRC and NEI are beneficial and a potential meeting was discussed around February 14, 1997.

(2) Commission Briefing (and)
(3) Issue Final Regulatory guide

The schedule for issuing the final RG in August 1997 requires resolution of comments by February 14, 1997, and preparation of the final RG and NEI 95-10 for approval by March 14, 1997. A Commission briefing on the status of license renewal activities, which will include development of the final RG, is scheduled for the week of June 16, 1997. The final RG will be submitted to the Commission for approval.

Original signed by:
Stephen T. Hoffman, Senior Project Manager
License Renewal Project Directorate
Division of Reactor Program Management
Office of Nuclear Reactor Regulation

Project 690

Attachments: As stated

cc w/atts: See next page

DOCUMENT NAME: A:\NEI0121.MTS
To receive a copy of this document, indicate in the box: "C" = Copy without attachment/enclosure "E" = Copy with attachment/enclosure "N" = No copy

OFFICE	PM:PDLR STH	E	D:PDLR	N						
NAME	SHoffman:avl		SNewberry							
DATE	1/28/97		1/31/97							

OFFICIAL RECORD COPY