UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
SAM NUNN ATLANTA FEDERAL CENTER
61 FORSYTH STREET SW SUITE 23T85
ATLANTA, GEORGIA 30303-8931

October 29, 2001

Mr. John P. McElwain, Site Vice President
Turkey Point Nuclear Plant
Florida Power and Light Company
9760 SW 344th Street
Florida City, FL 33035

SUBJECT: TURKEY POINT NUCLEAR PLANT - NRC INSPECTION REPORT NOS. 50-250/01-11, 50-251/01-11

Dear Mr. McElwain:

On September 14, 2001, the NRC completed an inspection at your Turkey Point facility regarding your application for license renewal for the Turkey Point, Units 3 and 4 reactor facilities. The enclosed inspection report presents the results of that inspection. The results of this inspection were discussed on September 14, 2001, with members of your staff in an exit meeting open for public observation at the City Hall of Florida City FL.

The purpose of this inspection was an examination of activities that support your application for a renewed license for the Turkey Point facilities. The inspection consisted of a selected examination of procedures and representative records, and interviews with personnel regarding the implementation of aging management programs. For a sample of plant systems, inspectors performed visual examination of accessible portions of the systems to observe any effects of equipment aging. The inspection concluded that your license renewal activities were conducted as described in your License Renewal Application and that documentation supporting your application is in an auditable and retrievable form.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available electronically for public inspection in the NRC Public Document

Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at http://www.nrc.gov/NRC/ADAMS/index.html (the Public Electronic Reading Room).

Should you have any questions concerning this letter, please contact us.

Sincerely,

\RA

Harold O. Christensen
Deputy Director
Division of Reactor Safety

Docket Nos. 50-250, 50-251
License Nos. DPR-31, DPR-41

Enclosure: NRC Inspection Report 50-250/01-11, 50-251/01-11

cc w/encl: (See next page)

cc:
M. S. Ross, Attorney
Florida Power & Light Company
P.O. Box 14000
Juno Beach, FL 33408-04206

County Manager
Miami-Dade County
111 NW 1 Street, 29th Floor
Miami, Florida 33128

Senior Resident Inspector
Turkey Point Nuclear Plant
U.S. Nuclear Regulatory Commission
9762 SW. 344th Street
Florida City, Florida 33035

Mr. William A. Passetti, Chief
Department of Health
Bureau of Radiation Control
2020 Capital Circle, SE, Bin #C21
Tallahassee, Florida 32399-1741

Mr. Joe Myers, Director
Division of Emergency Preparedness
Department of Community Affairs
2740 Centerview Drive
Tallahassee, Florida 32399-2100

Attorney General
Department of Legal Affairs
The Capitol
Tallahassee, Florida 32304

Plant Manager
Turkey Point Nuclear Plant
Florida Power and Light Company
9760 SW. 344th Street
Florida City, FL 33035

Mr. Steve Franzone
Licensing Manager
Turkey Point Nuclear Plant
9760 SW. 344th Street
Florida City, FL 33035

Mr. Don Mothena
Manager, Nuclear Plant Support Services
Florida Power & Light Company
P.O. Box 14000
Juno Beach, FL 33408-0420

Mr. J.A. Stall
Sr. Vice President - Nuclear Operations
Florida Power & Light Company
P.O. Box 14000
Juno Beach, FL 33408-0420

Mr. Douglas J. Walter
Nuclear Energy Institute
1776 I STreet NW, Suite 400
Washington, D.C. 20006

Mr. Stephen T. Hale
Turkey Point Nuclear Point
Florida Power & Light Company
9760 S.W. 344 Street
Florida City, Florida 33035

Ms. E.A. Thompson
Turkey Point Nuclear Plant
Florida Power and Light Company
9760 SW 344th Street
Florida City, Florida 33035

Ms. Joette Lorion
13015 SW 90 Court
Miami, Florida 33176

Mr. Mark P. Oncavage
12200 S.W. 110th Avenue
Miami, Florida 33176-4520

David R. Lewis, Esq.
Shaw Pittman
2300 N Street, NW
Washington, DC 20037

U. S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket Nos:	50-250, 50-251
License Nos:	DPR-31, DPR-41
Report No:	50-250/01-11, 50-251/01-11
Licensee:	Florida Power and Light Company (FPL)
Facility:	Turkey Point Nuclear Plant, Units 3 & 4
Location:	9760 SW 34th Street Florida City, FL 33035
Dates:	August 20 - September 14, 2001
Inspectors:	B. Crowley, Reactor Inspector R. Moore, Reactor Inspector K. Van Doorn, Reactor Inspector H. Wang, Operations Engineer, NRR
Approved by:	Caudle Julian Team Leader Division of Reactor Safety

TABLE OF CONTENTS

SUMMARY OF FINDINGS

IR 05000250-01-11, IR 05000251-01-11; 08/20 -09/14/2001; Florida Power and Light Company, Turkey Point Nuclear Plant, Units 3 & 4. License Renewal Inspection Program, Aging Management Programs.

This inspection of License Renewal activities was performed by four regional office engineering inspectors, and one staff member from the office of Nuclear Reactor Regulation. The inspection program followed was NRC Manual Chapter 2516 and NRC Inspection Procedure 71002. This inspection did not identify any “findings” as defined in NRC Manual Chapter 0610.

The inspectors reviewed Aging Management Programs for selected plant systems as described in Attachment 2 of this report to determine if the program requirements were identified correctly and being implemented for the selected systems consistent with the Turkey Point License Renewal Application (LRA) and the NRC report “Safety Evaluation Report With Open Items Related to the License Renewal of the Turkey Point Plant, Units 3 and 4" (SER) dated August 17, 2001. Where existing programs are to be expanded or new aging management programs are to be created to support the LRA, the inspectors examined available documentation and discussed future plans with applicant engineers.

This inspection concluded that the existing aging management programs were being implemented as described in the LRA. Discussion with plant staff and review of available documentation for expansion of existing programs and creation of new aging management programs demonstrated that plans were consistent with the LRA and SER.

The inspectors performed numerous visual inspections on portions of plant equipment to attempt to observe aging effects. The overall condition of plant equipment was good.

Attachment 1 of this report lists the applicant personnel contacted and the documents reviewed. Attachment 2 of this report lists the plant systems selected for inspection and the corresponding Aging Management Programs credited by the LRA to manage aging in those systems. A list of acronyms used in this report is provided in Attachment 3.

Report Details

I. Inspection Scope

This inspection was conducted by NRC Region II inspectors and members of the NRR staff to interview applicant personnel and to examine a sample of documentation which supports the license renewal application (LRA). This inspection reviewed the implementation of the applicant's Aging Management Programs. The team reviewed supporting documentation and interviewed applicant personnel to confirm the accuracy of the LRA conclusions. The plant systems selected for review during this inspection and their corresponding Aging Management Programs are listed in Attachment 2 to this report. For a sample of plant systems, inspectors performed visual examination of accessible portions of the systems to observe any effects of equipment aging. Attachment 1 of this report lists the applicant personnel contacted and the documents reviewed. A list of acronyms used in this report is provided in Attachment 3.

II. Findings

A. Visual Observation of Plant Equipment

During this inspection, the inspectors performed a walkdown inspection of several plant systems to determine their current condition and to attempt to observe aging effects. In general, equipment was in good condition and no aging related issues other than those identified in the LRA were identified. However, the following two material condition problems were identified in the Control Building Ventilation System.

DC/Inverter Room Air Conditioning Units E16E and E16F (self-contained units) had extensive corrosion on the outside housing of the units. The applicant provided Condition Reports (CRs) 1280 for E16F and 1281 for E16E documenting that this condition had been identified by the applicant during the last preventive maintenance cycle. The CRs concluded that operability was not affected. Work Order 31014650 had been issued for temporary repairs. The final disposition was to recommend replacement of the units under the 2002 capital improvement program.

Computer Room Chiller A (S74A) had deteriorated coating and heavy corrosion on the chiller water pump casing (shaft end). The applicant immediately (August 21, 2001) issued Work Request 31008088 to remove insulation from the pump and clean and re-coat the pump casing.

Corrective actions for these equipment problems were appropriate and evidence was provided that these types of problems would be identified in existing and/or planned aging management programs.

On October, 9 - 10 2001, during the Unit 3 refueling outage, a team inspector performed a walkdown of accessible plant equipment inside of the Unit 3 Containment Building. The objective was to assess the material condition of equipment which was inaccessible during normal plant operation. The systems and equipment in this review included: Auxiliary Feedwater System, Safety Injection System, Reactor Coolant System, Containment Spray System, Class 1 Piping and Supports, Component Cooling, Containment Emergency Ventilation and electric cable support and shielding.

The general material condition of the piping and equipment was good. There was no degradation noted from boric acid leakage onto equipment. The inspector reviewed the results of the boric acid leakage surveillance conducted at the start of the outage. The identified leakage was addressed in work orders and no additional leakage locations were noted by the inspector. No damage or degradation was noted on electrical cable support or shielding. The inspector noted that the protective coating on the #3 Steam generator supports was peeling over an approximate two square foot area as well as several smaller surface areas. The underlying metal was clean and undamaged. The inspector reviewed the protective coating program as applied to the steam generator supports and concluded that the condition would be appropriately resolved by the applicant.

B. Review of Mechanical Aging Management Programs

1. Auxiliary Feedwater (AFW) Steam Piping Inspection Program

This is a new program which is being developed to monitor and assess loss of material on the inside diameter (ID) and outside diameter (OD) surfaces of carbon steel AFW steam supply lines due to general and pitting corrosion. The licensee determined these were the aging mechanisms for the intermittent use auxiliary steam piping. The inspection program will consist of volumetric examinations of susceptible locations using either computed radiography or ultrasonic wall thickness techniques. These examinations are currently used at the station and have been effective in identifying piping wall degradation in other systems. The inspections will be included in the Preventative Maintenance Five-Year Plan using a model work order to document specific locations, examination method, surface preparation, and contingency actions for piping replacement if required.

The inspectors reviewed the program documentation, discussed the program with the engineering staff and walked down accessible portions of the system. The License Renewal Aging Management Review (LRAMR) document for the AFW and Condensate Storage System identified the aging effects applicable to the AFW steam supply piping. The License Renewal Basis Document (LRBD) for the AFW Steam Piping Inspection Program, identified the implementing procedures, processes, and evaluations required for program implementation and assigned Departmental responsibility for the program development and implementation. The program development is scheduled to be completed prior the end of the current operating license (July 19, 2012). Action items specified in the AFW LRBD for program development and implementation were entered into an Engineering Action Item Tracking list and responsibility was assigned for these items.

The inspectors concluded that the applicant had conducted adequate historic reviews of plant specific and industry experience information to determine aging effects. The applicant had provided adequate guidance to ensure the aging effects will be appropriately managed. When implemented, there is reasonable assurance that the intended function of the AFW Steam Piping will be maintained through the period of extended operation. The present material condition of the AFW steam piping was good.

2. AFW Pump Oil Coolers Inspection

This is a new program being developed to perform a one time inspection of the AFW pump oil coolers to assess whether loss of material of cast iron components, due to selective leaching, has occurred and will be an aging effect requiring management during the period of extended

operation. The inspection will be a visual observation of the external and internal surface of the cooler cast iron components.

The inspectors reviewed the program documentation, discussed the program with the engineering staff and assessed the present physical condition of the coolers. The LRAMR for the AFW and Condensate Storage System identified the potential aging effects applicable to the AFW pump oil coolers. The LRBD for the AFW Pump Oil Coolers Inspection includes the actions to develop and implement this one time inspection. These actions included reference to existing procedures for program activities, development of a work order for inspection performance, and acceptance criteria for the inspection. The program development is scheduled to be completed prior the end of the current operating license (July 19, 2012). Action items specified in the AFW LRBD for program development and implementation were entered into an Engineering Action Item Tracking list and responsibility was assigned for these items.

The inspectors concluded that the applicant had conducted adequate historic reviews of plant specific and industry experience information to determine aging effects. The applicant had provided adequate guidance to ensure the aging effects will be appropriately managed. When implemented, there is reasonable assurance that the intended function of the AFW pump oil coolers will be maintained through the period of extended operation. The present material condition of the external surface of the cooler components was good.

3. Small Bore Class 1 Piping Inspection

This is a new activity being developed to perform a one time volumetric examination to verify that service-induced weld cracking is not occurring in class 1 piping that is less than four inches in diameter. A sample of welds for volumetric examination will be selected using a risk-informed approach. The applicant will submit to the NRC a report describing the inspection plan. If a weld flaw is identified it will be documented and evaluated using the existing condition reporting process and additional samples will be selected and examined.

The inspectors reviewed the program documentation and discussed the program with the engineering staff. The License Renewal Aging Management Review Summary Report for Class 1 Piping identified the potential aging effects applicable to the small bore piping. The LRBD for the Small Bore Class 1 Piping Inspection includes the actions to develop and implement this one time inspection. These actions included an engineering evaluation to determine specific welds for examination, development of a specific volumetric examination procedure for small bore piping and providing a report to the NRC describing the inspection plan prior to its implementation. The one time inspection is scheduled to be performed prior to the end of the current operating license (July 19, 2012). The acceptance criteria for the inspection is consistent with ASME Section XI for Class 1 piping. Action items specified were entered into an Engineering Action Item Tracking list and responsibility was assigned for these items.

The inspectors concluded that the applicant had conducted adequate historic reviews of plant specific and industry experience information to determine aging effects. The applicant had provided adequate guidance to ensure the aging effects will be appropriately managed. When implemented, there is reasonable assurance that the intended function of the systems containing small bore class 1 piping will be maintained through the period of extended operation.

4. Containment Spray System Piping Inspection

This is an existing program to monitor and assess the loss of material due to general corrosion, pitting, and crevice corrosion in the Containment Spray System carbon steel headers within containment. The susceptible locations were identified and documented from previous ultrasonic examinations of the piping in 1992 and 1993. These were areas of localized corrosion in the elbows located near the containment penetrations. Follow-up inspections have been performed at refueling outages. The inspections have been entered into the Preventive Maintenance Five-Year Plan.

The inspectors reviewed the program documentation, discussed the program with the Engineering staff, and reviewed the documented results of previous ultrasonic examinations. The LRAMR for the Containment Spray System identified the aging effects applicable to the system. The LRBD for the Containment Spray System Piping Inspection Program identified the implementing procedures, model work order, and evaluations required to enhance the existing program to meet the requirements of the LRA and assigned Departmental responsibility for the program implementation. These actions to develop a model work order for the inspection, enter the inspection activity into the Five-Year Plan, and continue the existing program inspections have been implemented.

The inspectors noted that although the program basis document scope stated that piping/fittings and valves were to be included in the inspection program, there was no inspection activities indicated or performed for the valves located in the carbon steel Containment Spray header. In discussion with the Engineering staff the applicant demonstrated that the valve bodies were typically thicker than the pipe wall thickness; therefore, the examination of susceptible locations of piping elbows would provide a more sensitive indication of system degradation. Additionally, the scope of the program could be expanded to include valves based on inspection results. The licensee revised the LRBD for the Containment Spray System Piping Inspection to document the manner in which valves were addressed by the program

The inspectors concluded that the applicant had conducted adequate historic reviews of plant specific and industry experience information to determine aging effects. The applicant had provided adequate guidance to ensure the aging effects will be appropriately managed. When implemented, there is reasonable assurance that the intended function of the Containment Spray System will be maintained through the period of extended operation.

5. Boric Acid Wastage Surveillance Program

This is an existing program that is credited in most license renewal systems' Aging Management Reviews for loss of material or mechanical closure integrity due to boric acid wastage as an aging effect requiring management. The program uses systematic inspections, leakage evaluations, and corrective actions to ensure that boric acid corrosion does not lead to degradation of pressure boundary or structural integrity of license renewal system components, supports, or structures. Electrical and fire protection equipment located in the proximity of borated water systems are included. Periodic inspections are performed, using existing procedures, at each refueling outage inside and outside containment and when reactor coolant leakage evaluation results exceed one gallon per minute. Minor procedure enhancements are required for license renewal.

The inspectors reviewed the program documentation, discussed the program with the Engineering staff, and reviewed the documented results of previous inspections and condition reports which corrected identified leakage conditions. The LRBD for the Boric Acid Wastage Surveillance Program identified the implementing procedures and action items required to enhance the existing program to meet the requirements of the license renewal application and identified Departmental responsibility for the program implementation. The action items were entered into an action item tracking process and scheduled for completion prior to the end of the current operating license (July 19, 2012).

The inspectors concluded that the applicant had conducted adequate historic reviews of plant specific and industry experience information to determine aging effects. The applicant had provided adequate guidance to ensure the aging effects will be appropriately managed. When implemented, there is reasonable assurance that the intended function of the systems, structures, and components (SSCs) will be maintained through the period of extended operation.

6. Field Erected Tanks Internal Inspection

This is a new one time inspection activity to assess whether loss of material due to corrosion is a significant aging effect in field erected tanks. These include the condensate storage tanks (CSTs), demineralized water storage tank (DWST) and the refueling water storage tanks (RWSTs). The CSTs were previously inspected and re-coated approximately ten years ago. The remaining tanks have not been internally inspected. Acceptance criteria for the inspections will be the corrosion tolerance specified on the tank drawings (RWST and CST) and tank specification (DWST).

The inspectors reviewed the program documentation, discussed the program with the Engineering staff, and reviewed the tank design drawings and specifications which included the acceptance criteria for the proposed one time internal tank inspection. The LRBD for the Field Erected Tanks Internal Inspection identified the action items required to develop the inspection procedure, the work order to perform the inspections, and identified Departmental responsibility for the program implementation. The action items were entered into an action item tracking process and scheduled for completion prior to the end of the current operating license (July 19, 2012).

The inspectors concluded that the applicant had conducted adequate historic reviews of plant specific and industry experience information to determine aging effects. The applicant had provided adequate guidance to ensure the aging effects will be appropriately managed. When implemented, there is reasonable assurance that the intended function of the tanks will be maintained through the period of extended operation.

7. Chemistry Control Program

This is an existing program which is credited for managing the aging effects of loss of material, cracking, and fouling build up for the internal surfaces of fluid systems in the scope of license renewal. The aging effects are minimized or prevented by controlling the chemical species that cause the underlying aging mechanisms. Chemical agents such as corrosion inhibitors and biocides are introduced to prevent mechanisms that could cause loss of material, cracking, or fouling. The fluid environment internal to these systems is tested periodically to monitor chemistry conditions. Tolerance ranges for chemistry parameters are included in the station chemistry control procedure as well as alert levels and required actions. The existing chemistry

control program has been reviewed by the NRC and internal audits and determined to be effective. Program enhancements to meet license renewal requirements which include procedure changes to expand the scope of the program have been completed.

Inspectors reviewed periodic chemistry sampling documentation for the previous two years. That documentation demonstrated that systems' chemistry was monitored and maintained consistent with the established Chemistry Control Program.

The inspectors concluded that the applicant had conducted adequate historic reviews of plant specific and industry experience information to determine aging effects. The applicant had provided adequate guidance to ensure the aging effects will be appropriately managed. When implemented, there is reasonable assurance that the intended function of the fluid systems will be maintained through the period of extended operation.

8. Emergency Containment Cooler Inspection Program

This is a new program to perform a one time inspection of one of three emergency containment coolers. The inspection will examine the tube wall thickness of a cooler to assess whether loss of material due to erosion is a significant aging effect for the emergency containment cooler heat exchanger tubes. The inspection is to be performed prior to the end of the current operating license (July 19, 2012). The need for additional inspections will be determined by the result of the initial inspection.

The inspectors reviewed the program documentation and discussed the program with the Engineering staff. The LRBD for the Emergency Containment Cooler Inspection identified the action items required to develop the inspection procedure, the work order to perform the inspections, and identified Departmental responsibility for the program implementation. The basis document also includes the acceptance criteria for the inspection and an evaluation to determine sample locations for the volumetric examination. The action items were entered into an action item tracking process and scheduled for completion prior to the end of the current operating license.

The inspectors concluded that the applicant had conducted adequate historic reviews of plant specific and industry experience information to determine aging effects. The applicant had provided adequate guidance to ensure the aging effects will be appropriately managed. When implemented, there is reasonable assurance that the intended function of the Emergency Containment Coolers will be maintained through the period of extended operation.

9. Intake Cooling Water System (ICW) Inspection Program

For this Aging Management Program (AMP) the applicant plans to enhance the existing ICW inspection guidelines to clarify criteria, repair methods, and documentation requirements; develop an engineering specification to provide improved guidance for Component Cooling Water heat exchanger tube inspections; and utilize existing procedures which provide for equipment change outs and inspections with minor enhancements. The aging effects addressed by this program include loss of material, cracking, and biological fouling. The inspectors reviewed the applicable AMP LRBD which described program requirements, the ICW LRAMR which identified aging effects, credited procedures, selected proposed procedure changes, identified associated engineering documents, and recent inspection results. In addition the inspectors held discussions with the system engineer.

A minor problem was noted, in that, the applicant experienced difficulty retrieving records of the latest crawl through inspection results for each ICW header. These records, while not a regulatory requirement, are important to assure knowledge of current system conditions so that adequate planning is implemented for future inspections. The applicant initiated Condition Report (CR) No. 01-1729 to assure this problem was addressed.

The inspectors concluded that the applicant had conducted adequate historic reviews of plant specific and industry experience information to determine aging effects. The applicant had established tracking items to assure implementation of proposed actions to support LR. In addition, the inspectors concluded that the applicant had provided adequate guidance to ensure that the aging effects will be appropriately managed. When implemented as described, there is reasonable assurance that the intended function of the ICW system will be maintained through the period of extended operation.

10. Fatigue Monitoring Program

The applicant plans to utilize the existing Fatigue Monitoring Program with a modification to notify Engineering when 80% of projected plant cycles are reached. In addition, the applicant plans to conduct inservice inspections of the pressurizer surge line to confirm that Environmentally Assisted Fatigue (EAF) has not resulted in cracking. The program provides for evaluation of actual fatigue cycles, e.g. heat up and cool down, which the plant experiences and to confirm these cycles will not exceed the design cycles assumed in the fatigue analysis leading to cracking. The inspectors reviewed the LRBD which described program requirements, associated procedures, engineering documents, and recent evaluation results. In addition, the inspectors held discussions with site and corporate program owners in this area.

One minor problem was noted. Although not required by initial licensing basis, the applicant evaluated effects of EAF. For this effect, the fatigue factor would exceed the normally accepted Fatigue Usage Factor value of 1.0 for the pressurizer surge line. The applicant chose to provide additional inspection for this line utilizing the risk informed inservice inspection program. This special consideration was not described in the basis document for the Fatigue Monitoring Program. The applicant issued Revision 3 to the document to assure reference to the special inspection requirement was included. The inspectors confirmed that the basis document for the inservice inspection program included the inspection requirement.

The inspectors concluded that the applicant had conducted adequate historic reviews of plant specific and industry experience information to determine aging effects. The applicant had established tracking items to assure implementation of proposed actions to support LR. In addition, the inspectors concluded that the applicant had provided adequate guidance to ensure that the aging effects will be appropriately managed. When implemented as described, there is reasonable assurance that the intended function of the RCS piping will be maintained through the period of extended operation.

11. Boraflex Surveillance Program

For this AMP the applicant plans to continue the recently enhanced Boraflex Surveillance Program which includes areal density testing on a frequency of at least once every five years in either fuel pool. This testing utilizes a radioactive source to provide a measure of boron remaining in the Boraflex, which would provide indication of boron dissolution and gaps in the Boraflex. The applicant also plans to continue monthly monitoring of silica in each pool. The aging effects addressed by this program include shrinkage, gap formation, and boron

dissolution. The inspectors reviewed the applicable LRBD which described program requirements, credited procedures, associated engineering documents, and recent inspection results. The inspectors also discussed the program with responsible personnel and observed both fuel pools in the field. Material condition in the fuel pool areas was good.

The inspectors concluded that the applicant had conducted adequate historic reviews of plant specific and industry experience information to determine aging effects. The applicant had established tracking items to assure implementation of proposed actions to support LR. In addition, the inspectors concluded that the applicant had provided adequate guidance to ensure that the aging effects will be appropriately managed. When implemented as described, there is reasonable assurance that the intended function of the Boraflex will be maintained through the period of extended operation.

12. Systems and Structures Monitoring Program (Systems Portion)

The applicant has credited for LR existing system visual monitoring performed by system engineers in accordance with established procedures. In addition, the applicant plans to initiate an additional procedure to provide more guidelines for inspections such as external roof surfaces, field erected tanks, and use of computer aided radiography, and to provide guidelines for inspection frequencies. The aging effects addressed by this AMP include loss of material, crack initiation, fouling buildup, loss of seal, and change in material properties. The inspectors reviewed the applicable LRBD which described program requirements, identified associated procedures, and referenced selected system LRAMRs which identified aging effects. In addition, the inspectors conducted a walkdown of the Spent Fuel Pool Cooling System and the Instrument Air System and held discussions with system engineers for these systems. Material condition of the systems observed was good.

The inspectors concluded that the applicant had conducted adequate historic reviews of plant specific and industry experience information to determine aging effects. The applicant had established tracking items to assure implementation of proposed actions to support LR. In addition, the inspectors concluded that the applicant had provided adequate guidance to ensure that the aging effects will be appropriately managed. When implemented as described, there is reasonable assurance that the intended function of the SSCs will be maintained through the period of extended operation.

13. Periodic Surveillance and Preventive Maintenance Program

For this AMP the applicant plans to utilize existing surveillance and preventive maintenance procedures, with enhancements, which provide for inspections, testing, and component replacement and refurbishment. The aging effects addressed by this program include loss of material, crack initiation, fouling buildup, loss of seal, and embrittlement. The inspectors reviewed the applicable LRBD which described program requirements, identified credited procedures, and selected proposed procedure enhancements. In addition, the inspectors held discussions with engineers responsible for this area.

The inspectors concluded that the applicant had conducted adequate historic reviews of plant specific and industry experience information to determine aging effects. The applicant had established tracking items to assure implementation of proposed actions to support LR. In addition, the inspectors concluded that the applicant had provided adequate guidance to ensure that the aging effects will be appropriately managed. When implemented as described, there is

reasonable assurance that the intended function of the SSCs will be maintained through the period of extended operation.

14. Galvanic Corrosion Susceptibility Inspection Program

The applicant plans to develop a new program for this AMP which will provide for sample inspections to observe for galvanic corrosion. The applicant indicated that the program sample will include a variety of field conditions emphasizing the most vulnerable combination of materials and environment and will utilize a variety of inspection techniques. The inspectors reviewed the applicable LRBD which described program requirements and held discussions with the engineer responsible for development of the program.

The inspectors concluded that the applicant had conducted adequate historic reviews of plant specific and industry experience information to determine aging effects. The applicant had established tracking items to assure implementation of proposed actions to support LR. In addition, the inspectors concluded that the applicant had provided adequate guidance to ensure that the aging effects will be appropriately managed. When implemented as described, there is reasonable assurance that the intended function of the SSCs will be maintained through the period of extended operation.

15. ASME Section XI, Subsection IWB, IWC, and IWD Inservice Inspection Program (ISI Program)

The ISI Program, an existing program, is credited in the LRA as an aging management program for the pressurizer, class 1 piping, reactor coolant pumps, reactor vessel, reactor vessel internals, and steam generators. A request to revise the Unit 3 ISI program for Class 1 piping to a risk-informed program in accordance with Westinghouse Topical Report WCAP-14572 has been submitted to the NRC. The applicant plans to submit a similar request for Unit 4.

The ISI program is credited for managing cracking, loss of mechanical closure integrity and loss of material due to various mechanisms for: stainless steel, cast stainless steel, stainless steel weld butter, Inconel alloy 600, alloy X-750, low alloy steel with alloy 600 cladding, carbon steel, low alloy steel, carbon steel with stainless steel clad, and alloy steel with stainless steel cladding materials. The program consists of performing surface and volumetric nondestructive examinations of piping and components at various intervals in accordance with the ASME Boiler and Pressure Vessel Code and other augmented requirements such as NUREGs, Generic Letters, etc. The ISI Program is controlled by ISI-PTN-3/4-Program, Revision 3, Third Interval Inservice Inspection Program for Turkey Point Nuclear Power Plants Units 3 and 4. The program document is updated each 10-year interval and submitted to the NRC for approval of any relief requests. The current program (Third 10-year Interval) ends on February 21, 2004 for Unit 3 and April 14, 2004 for Unit 4 and was approved by NRC SER dated March 31, 1995. In addition inspection plans and plant procedures, as listed in Attachment 1 below implement the program.

The inspectors reviewed the applicable AMP basis document and selected system LRAMRs as listed in Attachment 1. In addition to review of the above program documents and discussion of the program with responsible applicant personnel, the inspectors reviewed the final ISI inspection results reports for the last two outages, the ISI inspection plans for the next two outages, and the 1999 pressure test reports to verify that the ASME Section XI ISI program was in place and being implemented.

Also, periodic inspections of ISI activities are performed by NRC ISI inspectors during outages. Recent inspections have found activities to be performed in accordance with program and plan requirements in a quality manner.

During the review, the inspectors identified the following discrepancies between the ISI Program and 6-column Table 3.2-1 of the LRA.

> For external environment, Table 3.2-1 listed ASME Section XI, Category B-H, as an aging management program for cracking of the pressurizer support skirt. For Turkey Point Units, the pressurizer support skirt weld is outside the area of interest and therefore no inspections are required under the ISI Program.
>
> For external environment, Table 3.2-1 listed ASME Section XI, Category B-G-1, as an aging management program for loss of material for the RV flange. The Category should be B-N-1.
>
> For external environment, Table 3.2-1 listed ASME Section XI, Category B-H, as an aging management program for cracking of steam generator support pads. These support pads do not require examination by ASME Section XI and therefore, are not included in the ISI program.
>
> For external environment, Table 3.2-1 listed ASME Section XI, Category C-C, as an aging management program for cracking of steam generator seismic lugs. These seismic lugs do not require examination by ASME Section XI, Code Case N-509, and therefore, are not included in the ISI program.

The licensee issued revisions on September 6, 2001, to LRAMRs PTN-ENG-LRAM-99-0033, 99-0034, and 99-0089 to correct these discrepancies. The changes will be made to Table 3.2-1 of the LRA during the next periodic update.

The team concluded that ISI activities are being conducted as described in the ISI Program. The program includes the systems and components listed in the LRA, for which the LRA credited the ISI Program for aging management. Adequate historic reviews to determine aging effects had been conducted, and adequate guidance had been provided to reasonably ensure that aging effects will be appropriately managed.

16. Flow Accelerated Corrosion (FAC) Program

FAC is an aggressive material thinning of carbon steel piping materials resulting from high energy steam/fluid flow. The FAC Program, an existing program, is credited in the LRA as an aging management program for portions of the main steam, main feedwater, and blowdown systems.

The program is credited for managing the loss of material in carbon steel piping and components and consists of monitoring the wall thickness of susceptible carbon steel piping and components in various systems, and replacing affected piping prior to failure. In many cases, FAC resistant materials are used for replacements. The program is based on EPRI NSAC-202L, Recommendations for an Effective Flow-Accelerated Corrosion Program. The program computer models susceptible systems and predicts wear rates. The model is supplemented and updated with periodic thickness inspections of selected components each

cycle. Based on the model and inspection results, decisions are made on pipe replacement schedules.

The FAC Program is controlled by the following procedures: (1) ENG-CSI-FAC-100, Revision 9, Corporate Long-Term Flow-Accelerated Corrosion Monitoring Program and (2) 0-ADM-530, 12/28/00, Flow Accelerated Corrosion (FAC) Inspection Implementation Program. The inspectors reviewed the applicable LRBD documents and selected LRAMRs as listed in Attachment 1. In addition to review of the above program implementing procedures and discussion of the program with responsible applicant personnel, the inspectors reviewed the final FAC inspection reports for the last two outages and the FAC outage inspection plans for the next two outages to verify that the program was in place and being implemented.

The FAC Program will be enhanced to include piping between the main steam process piping and steam traps/bypass valves for ST-3-1 through ST-3-13 and ST-4-1 through ST-4-13. The inspectors verified this enhancement is captured in the applicant's open items tracking system (Item No. LR-00-0005).

The inspectors concluded that the FAC program was in place, had been implemented, and included the systems and components identified in the LRA and should manage aging effects as defined in the LRA. Adequate historic reviews to determine aging effects had been conducted, and adequate guidance had been provided to reasonably ensure that aging effects will be appropriately managed.

17. Thimble Tube Inspection Program

The Thimble Tube Inspection Program, an existing program, is credited in the LRA as an aging management program managing the effect of material loss due to fretting wear of thimble tubes. The program was initiated in response to NRC Bulletin 88-09 and consists of the following program documents: (1) JPN-PTN-SEMS-91-091, Revision 0, Engineering Evaluation of BMI Thimble Tube wear, (2) Procedure NDE 1.4, revision 1, Eddy Current examination Flux thimble Tubing, and (3) Procedure 0-GMI-059.4, 8/30/95, Flux Map Thimble Tube eddy current Test.

The program consists of two sets (separated in time) of eddy current measurements of tube wall thickness and engineering analysis to show that the wear rate will not result in violation of minimum wall thickness through the life of the plant. The last sets of measurements were taken in 1990 for Unit 4 and 1992 for Unit 3 and showed no appreciable wall thinning had occurred between inspections. Based on the measurements taken, the applicant determined that only Unit 3 thimble N-05 will require further evaluation in the renewal period. The applicant will enhance the program to require this additional inspection before the end of the current operating license. This enhancement is identified in the applicant's action item tracking system as Item No. LR-00-0008.

The inspectors reviewed the applicable LRBD and the LRAMR document as listed in Attachment 1. In addition to review of the above program procedures and discussion of the program with responsible applicant personnel, the inspectors reviewed the engineering evaluation that determined the acceptability of the thimble tubes.

The inspectors concluded that the thimble tube inspection program, had been implemented, was consistent with the description in the LRA and should manage aging effects as defined in the LRA. Adequate historic reviews to determine aging effects had been conducted.

18. Reactor Vessel Head Alloy 600 Penetration Inspection Program

The Reactor Vessel Head Alloy 600 Penetration (VHP) Inspection Program is credited in the LRA as an aging management program for primary water stress corrosion cracking (PWSCC) in Control Rod Drive Mechanism Alloy 600 VHP nozzles. In accordance with the LRA, the program consists of inspection for leakage during outages under the ASME Section XI ISI program and the Boric Acid Wastage Program. The response to NRC Bulletin 97-01 credited these existing leakage inspections as the program to monitor cracking of the nozzles. In addition, the LRA identified that the program will be enhanced to require a one-time volumetric inspection of selected Unit 4 VHPs.

After submittal of the LRA, additional cracking has been identified in the industry. As a result, NRC issued Bulletin 2001-01 to require additional inspections. Turkey Point's response to the Bulletin was issued on September 4, 2001, and includes additional inspections as detailed in the Bulletin. Results from current industry inspections may require additional enhancements to the program. The NRC SER dated August 17, 2001 identified an open item indicating that the LRA needed to be updated to reflect that the applicant will continue to implement the Reactor Vessel Head Alloy 600 Penetration Inspection Program during the extended period of operation. This would include updating to be consistent with NEI's current integrated program.

The inspectors reviewed the applicable LRBD and the LRAMR document as listed in Attachment 1. In addition, the inspectors discussed the program with responsible applicant personnel and reviewed responses to the NRC Bulletins. Review of the Boric Acid Wastage Program is documented in Section II.B.5 of this report. The enhancement to add a new engineering specification to perform a volumetric inspection of selected Unit 4 VHPs during the extended period of operation is identified in the applicant's action item tracking system as Item No. LR-00-0019.

The inspectors concluded that the Reactor Vessel Head Alloy 600 Penetration Inspection Program was consistent with the description in the LRA and that enhancements to reflect current industry experience is planned. Adequate historic reviews to determine aging effects had been conducted.

19. Reactor Vessel Integrity Program

The Reactor Vessel Integrity Program, an existing program, is credited in the LRA as an aging management program for managing reactor vessel irradiation embrittlement. The program encompasses the following sub-programs: (1) Reactor Vessel Surveillance Capsule Removal and Evaluation, (2) Fluence and Uncertainity Calculations, (3) Monitoring Effective Full Power Years, and (4) Pressure-Temperature Limit Curves.

The Reactor Vessel Integrity Program is controlled by general engineering procedures and the following administrative procedures: (1) 0-ADM-527, 4/19/00, Reactor Material Surveillance Program and (2) 0-ADM-557, 12/8/99, Duties and Responsibilities of Reactor Engineers.

The inspectors reviewed the applicable LRBD and LRAMR document as listed in Attachment 1. In addition to review of the above procedures and discussion of the program with responsible applicant personnel, the inspectors reviewed the following documents to verify that the program was in place and being implemented:

PC/M 01 - 036, Revision 0, Turkey Point Unit 3 Cycle 19 Reload Design

Calculation PTN-3FJF-01-078, Revision 0, Turkey Point Unit 3, Cycle 19 Technical Specification review,

Calculation EFPY for T.S. 3.4.9.1 Pressure Temperature Limits

Calculation PTN-BFJF-99-049, Revision 1, Turkey Point Units 3 and 4 Vessel Fluence Projections at 32 and 48 EFPY

NRC SER dated October 30, 2000, for Operating License Amendments 208 (Unit 3) and 202 (Unit 4) covering T.S. changes related to pressure-temperature (P/T) limit curves and the Cold Overpressure Mitigation System (COMS) requirements

SWRI Project No. 06-8575 Final Report, Reactor Vessel Material Surveillance Program For Turkey Point Unit No. 3: Analysis of Capsule V dated August 1986

During the review, the inspectors noted that, although the various aspects of the Reactor Vessel Integrity Program were in place and had been implemented, there was no overall procedure to tie the individual pieces of the program together. The applicant had recognized this problem and identified the need to create an engineering specification to integrate all aspects of the program. The plans to create the engineering specification had been identified as a program enhancement in the LRBD document and was documented in the applicant's action item tracking system as Item No. LR-00-0066.

The inspectors concluded that the Reactor Vessel Integrity Program was in place, had been implemented, and was consistent with the description detailed in the LRA. Adequate historic reviews to determine aging effects had been conducted, and adequate guidance had been provided to reasonably ensure that aging effects will be appropriately managed.

20. Reactor Vessel Internals Inspection Program

The Reactor Vessel Internals (RVI) Inspection Program, a new program, is credited in the LRA as an aging management program for cracking, reduction in fracture toughness, loss of mechanical closure integrity, and establishment of the significance of dimensional changes due to void swelling for the RVI. The program is meant to supplement the RVI inspections required by the ASME Section XI, Subsections IWB, IWC, and IWD Inservice Inspection Program.

Industry is in the process of characterizing the aging effects associated with RVI. The applicant is participating in these industry efforts and plans to prepare procedures to implement the new inspection program after further industry understanding of the aging effects. The applicant anticipates that a new visual inspection (VT) procedure will be needed for the lower core barrel, baffle/former assemblies, baffle/former bolts, lower core plate and fuel pins, lower support columns/bolts, thermal shield, and lower support forging, and a new ultrasonic (UT) inspection procedure for the baffle/former bolts, barrel/former bolts and the lower support forgings. It is anticipated the new inspections will be performed after the end of the current operating license. The new procedures and implementing documents are captured in the applicant's action item tracking system as: new VT and UT procedure for bolting and other selected RVI parts (Item No. LR-00-044), engineering evaluation to determine number of baffle bolts that can fail without affecting RVI intended function (Item No. LR-00-45), engineering evaluation for CASS parts susceptible to thermal embrittlement (Item No. LR-00-46), and engineering evaluation to determine requirements for dimensional verification of RVI parts (Item No. LR-00-48).

The inspectors reviewed the applicable LRBD document and the LRAMR document as listed in Attachment 1. In addition to discussion of the planned program with responsible applicant personnel, the team reviewed the RVI ASME ISI inspection reports for the last two outages to verify that the RVIs are being inspected in accordance with current requirements. The inspectors concluded that the Reactor Vessel Internals Inspection Program is planned as described in the LRA and that the applicant's action item tracking system captures actions required for future implementation of the program.

21. Steam Generator Integrity Program

The Steam Generator Integrity Program, an existing program, is credited in the LRA as an aging management program for the aging effects of stress corrosion cracking and loss of material due to corrosion and wear of steam generator tubes and stress corrosion cracking of steam generator tube plugs. The program includes: periodic inspection of tubing and plugs, secondary side integrity inspections, tube integrity assessments, assessment of degradation mechanisms, primary to secondary leakage monitoring, primary and secondary chemistry control, sludge lancing, maintenance and repairs, and foreign material exclusion. The main program controls are included in the following plant documents: (1) ENG/CSI-NDE-99-051, Revision 2, Steam Generator Secondary Side Integrity Plan, (2) ENG-CSI 2.3, Steam Generator Secondary Side Integrity Program Administration, (3) ENG-CSI 2.2, Planning and Reporting Results of Steam Generator Tubing Examinations, (4) 0-ADM-060, Steam Generator Integrity Program Administration, and (5) ENG QI-5.7, Steam Generator Integrity Program.

The inspectors reviewed the applicable LRBD document and the LRAMR as listed in Attachment 1. In addition to review of the above program documents and discussion of the program with responsible applicant personnel, the inspectors reviewed: (1) 2000 Secondary Side Visual Examination Report for one Unit 3 and one Unit 4 SG, (2) the July 2001 Steam Generator Degradation Assessment, and (3) the 2000 Steam Generator Condition Monitoring and Operational Assessment Based on Eddy Current Examination Reports.

The inspectors concluded that the Steam Generator Integrity Program was in place, had been implemented, included the components identified in the LRA, was consistent with the description in the LRA, and should manage aging effects as defined in the LRA. Adequate historic reviews to determine aging effects had been conducted, and adequate guidance had been provided to reasonably ensure that aging effects will be appropriately managed.

C. Review of Electrical Systems Aging Management Programs

1. Containment Cable Inspection Program

This is a new AMP that is yet to be developed. The Environmental Qualification (EQ) program is a well established program to ensure that electrical components, such as cables, that may be subject to a harsh environment are properly constructed to perform their intended function even when subject to that harsh environment. This new program will perform periodic visual inspections of non-EQ cables, connections, and electrical containment penetrations which are in the scope of license renewal. The inspections will look for adverse localized equipment environments caused by heat or radiation which can accelerate aging of these electrical components. The inspections are to be performed with a 10 year frequency. The inspectors reviewed the LRBDs and the LRAMR documents for cables, connectors and penetration materials and found them acceptable for the early stage of development of this program. The

applicant has done a search of past Licensee Event Reports, Non Conformance Reports, and Condition Reports at Turkey Point to try to determine the past failure history of electrical components. Inspectors reviewed a sample of the documents and concluded that the applicant's review was thorough and conservative.

D. Review of Structural Component Aging Management Programs

1. Systems and Structures Monitoring Program (Structural Portion)

The systems and structures monitoring program (SSMP) uses walkdowns and visual inspections to determine the material condition of the systems and structures within the scope of license renewal. The SSMP was originally developed for maintenance rule implementation and enhanced to manage aging effects applicable to the systems and structures of Turkey Point. The SSMP has been credited for managing aging effects such as loss of material, crack initiation, fouling buildup, loss of seal and change in material properties. The inspectors reviewed PTN-ENG-LRAM-00-0042, "Systems and Structures Monitoring Program - License Renewal Program Basis Document," Revision 2, 8/17/01 which states that this document provides a description of the Turkey Point Systems and Structures Monitoring Program as it relates to the management of aging effects identified in the License Renewal Aging Management Reviews. Attachments 11.1 and 11.2 of the SSMP list all systems and structures/supports within the scope of license renewal that need periodic inspection.

The inspectors identified a minor problem with Attachment 11.2. On page 2 of 10 of Attachment 11.2 for buried or submerged concrete components, the document states that inspection is required to detect visual-signs of spalling, rust bleeding, discoloration, cracking, etc. For buried or submerged concrete, the inspectors questioned, how direct visual inspection can be performed. The applicant revised the document (Revision 3, 9/11/01) to indicate that for the concrete components below groundwater elevation, the interior vertical walls of the tendon access gallery will be visually inspected over the exposed surfaces to detect signs of deterioration. Although, the tendon access gallery is not within the scope of license renewal, the applicant plans to visually inspect the interior concrete wall of the tendon access gallery to consider any possible deterioration as representative of the inaccessible concrete surfaces. The inspectors considered this approach acceptable.

The inspectors performed a walkdown of the Unit 3 tendon access gallery to assess the condition of the concrete walls. The inspectors found that the concrete elements in the tendon access gallery are in good condition. The floor was dry, and there weren't many surface cracks in the walls. The inspectors did find that there was a large gap existing between the top of the tendon gallery wall and the bottom of the containment basemat which forms the tendon gallery ceiling. There also was a stain like substance on a large area of the tendon gallery wall. The applicant provided the inspectors a copy of the design drawing 5610-C-150, "Containment Structure Foundation Plan & Details," Revision 15, 3/1/99. The drawing indicates that there is by design a 2" gap between the top of the tendon gallery wall and the bottom of the containment basemat filled with compressible material to prevent water from getting into the tendon access gallery. The applicant also stated that the two conditions noted had been observed during prior inspections of the tendon access gallery. They were able to find reference to old non-conformance reports (NCRs) that addressed the issues (wall staining and gap), but the applicant was unable to find the old NCRs. The applicant, therefore, issued a new condition report (CR 01-1718) to address the issues to ensure the conditions will be adequately evaluated. The inspectors considered this action was acceptable.

The inspectors concluded that the applicant has a good aging management program which will detect aging effects and provide reasonable assurance that the intended functions of the structures and systems will be maintained during the period of extended operation.

2. ASME Section XI, Subsection IWE Inservice Inspection Program

The Turkey Point ASME Section XI, Subsection IWE Inservice Inspection Program (ISI/IWE), PTN-ENG-LRAM-00-0026, "ASME Section XI, Subsection IWE Inservice Inspection Program - License Renewal Program Basis Document," Revision 2, 8/6/01 was developed considering the requirements of 10 CFR 50.55a, the ASME Code, and the Turkey Point UFSAR. The ISI/IWE Program was developed, incorporating Subsection IWE examination criteria, for the Turkey Point Units 3 & 4 containment structures. The inspection program requires a 100 percent examination of the accessible containment steel and miscellaneous components that are part of the pressure retaining boundary, including structural reinforcement around openings and penetrations, stiffening rings, and manhole frames. The inspection also includes structural attachment pad-to-liner welds along with the liner surface examination and provides for leak-tight tests for seals and gaskets.

The inspectors reviewed the ISI/IWE program and the visual inspection records performed during the 2000 outage of both units. The visual inspections revealed minor deficiencies and discrepancies relating to coating, bolting, moisture barrier separation, rusted pipe supports, etc. Condition Reports (CRs) were issued for all deficiencies or discrepancies. The inspectors reviewed selected CRs and found that the conditions were evaluated and appropriate corrective actions taken.

The inspectors also reviewed the results of the Integrated Leak Rate Test (ILRT) of the containment structure of both units. The ILRT for Unit 3 was performed during the 1992 outage and the test was completed on 11/14/92. The inspectors reviewed the report entitled "Reactor Containment Building Integrated Leak Rate Test Report, 1992 Turkey Point Unit #3 ILRT," November 14, 1992. Page 9 of the report indicated that the total leak rate (Type A) was well within the allowable (0.113% vs 0.1875%). The applicant also performed Local Leak Rate Tests during the 1992 outage. The test results were contained in Appendix B1 of the report. There were several valves that exceeded the acceptance criteria, but after maintenance, repair, or replacement, the valves were within the acceptance. The Unit 4 ILRT was performed in 1991 and the test was completed on October 20, 1991. Page 9 of the report, "Reactor Containment Building Integrated Leak Rate Test Report, 1991 Turkey Point Unit #4 ILRT," indicated that the actual leak rate (Type A) was 0.0.057% per day and the acceptable leak rate is 0.1875% per day while the design leak rate is 0.25% per day. The inspectors found the results were acceptable.

The inspectors concluded that the applicant's ISI/IWE Program is an adequate aging management program to provide reasonable assurance that the intended function(s) of the containment steel components will be maintained during the extended period of operation.

3. ASME Section XI, Subsection IWL Inservice Inspection Program

The Turkey Point ASME Section XI, Subsection IWL Inservice Inspection Program (ISI/IWL) was developed under the same guidance as that of the ISI/IWE considering the requirements of 10 CFR 50.55a, the ASME Code (1992 Edition and Addenda), and the Turkey Point UFSAR. The ISI/IWL, PTN-ENG-LRAM-00-0025, "ASME Section XI, Subsection IWL Inservice Inspection Program - License Renewal Program Basis Document," Revision 2, 8/9/01 will

visually examine (using visual inspection VT-3C and VT-1C) the containment concrete structures and associated post-tension system. The program also provides requirements for inservice inspections and repair/replacement activities of the post tension system consistent with the requirements of ASME Section XI, Subsection IWL Category L-B. The aging of the concrete components are mainly managed by the System and Structures Monitoring Program. Prior to the development of the ISI/IWL program, the applicant had a containment tendon examination program to inspect the post tension system every 5 years. The tendon surveillance program provides the provisions for determining the tendon lift-off force and visual inspection to detect corrosion, pitting, cracking, distortion, or damage to the tendon anchorage components or its surrounding concrete. The ISI/IWL incorporates all the requirements and guidelines of the tendon surveillance program attributes and is implemented using existing plant procedures. The inspectors reviewed ISI/IWL-PTN-3/4, "Turkey Point Units 3&4 Reactor Containment Building Concrete Containment Inservice Inspection Program," Revision 1, 12/19/00 and found it is a well developed program and is capable of managing the aging of the containment concrete components. Visual examinations were performed in accordance with ENG-IWL-1.0, "Visual Examination VT-1C," Revision 0, 12/19/00 and ENG-IWL-2.0, "Visual Examination VT-3C," Revision 0, 12/19/00.

The inspectors reviewed the 9/5/01 ISI/IWL inspection report for Units 3&4 performed by Precision Surveillance Corporation (PSC) of East Chicago, Indiana. The inspection was a visual inspection using the VT-3C technique. When there was a need for a closer examination, the VT-1C visual inspection procedure was followed. The summary of the report lists 4 condition reports indicating minor concerns ranging from corroded caps, grease leaks, concrete superficial cracks, and exposed rebar and metal at anchorage areas. The report concludes: " PSC inspection and review of corrective maintenance shows the containment concrete and reinforcing steel integrity have not been damaged or affected adversely from original construction to present date. This report section complies to requirement of IWL and is approved by a registered professional engineer." Appendix A&B contain the VT-3C and VT-1C surveillance records of the Unit 3 and Unit 4 containment, respectively. The inspectors reviewed the records and agreed that the integrity of both containments was not compromised.

4. Cathodic Protection System

During the NRC staff review of the Turkey Point license renewal application, the staff issued Requests for Additional Information (RAIs) 3.9.1.2-1 and 3.9.1.4 -2 to inquire about the effectiveness of the cathodic protection system (CPS). The staff requested that the applicant provide a summary of the procedures used to assess the effectiveness of the CPS. The applicant replied that existing plant procedures ensure the CPS is effective, however, the CPS does not perform a license renewal intended function as defined in 10 CFR 54.4(a) and therefore is not credited in the determination of aging effects requiring management for protected structures and components. During subsequent discussion between the staff and the applicant on April 12, 2001, the applicant mentioned that the procedures are available at the site for NRC's inspection.

The inspectors reviewed Operation Procedures 3-OP-010.1, "Cathodic Protection System for Unit 3," 8/2/01, 4-OP-010.1, "Cathodic Protection System for Unit 4," 8/2/01, and 0-OPS-200.1, "Schedule of Plant Checks and Surveillances," 8/2/01. The first two procedures provide the prerequisites, precautions/limitations, and instructional guidance for startup/normal operation and shutdown of the CPS for the intake structure, condenser, turbine plant cooling water heat exchangers, and containment structures. The surveillance of the CPS is specified in 0-OPS-200.1 as a non technical specification required surveillance and is performed every seven days.

The inspectors reviewed the most recent CPS surveillance records of both units (July, 2001). These records were readings from the intake structure, turbine plant cooling water heat exchanger, and the raw water tanks. Most of the readings were within the range of allowable. When readings fell outside the range, condition reports were written to be evaluated. If necessary, the equipment or sensors were to be maintained, repaired, or replaced. The NRR staff also reviewed the procedures and records and considered them to be adequate. The inspectors concluded that the applicant has adequate procedures and sufficient surveillance that the staff's concern is resolved.

5. Protective Coating System

During the NRC staff review of the Turkey Point LRA, the staff issued RAI 3.6.1.5-2 which requested that the applicant provide an aging effect evaluation for the proper functioning of the containment sump screen from the degradation of containment interior coatings. The applicant responded that, "although protective coatings are used extensively at Turkey Point, protective coatings (excluding galvanizing) are not credited in the determination of aging effect for the equipment or structures that are coated. Protective coatings are a design feature of the item coated, but the coatings have no effect on the intended function of the item coated." The applicant further stated in the same response that: "As described in the Turkey Point response to GL 98-04, FPL has implemented controls for the surface preparation, procurement, application, surveillance, and maintenance activities for service level 1 coatings used inside containment. In addition, coating logs are maintained and documented in controlled calculations."

The inspectors reviewed Administrative Procedure 0-ADM-732, "Protective Coatings," 12/28/00 and the surveillance logs and calculations for Unit 4. The log sheets recorded the results of 4 surveillance walkdowns (4/91, 10/97, 3/99, and 10/00). In the four walkdowns, the record shows that the total area of unqualified coating found were less than 1000 sq. ft. Calculation PTN-4FSC-98-10003, "Evaluation of Existing Unqualified Coatings in Unit 4 Containment," Revision 2, 10/25/00 states that the zone of influence is an area within 20 feet of the south and north recirculation sump screens. Page two of the calculation indicates that the total coating area found unqualified within the influence zone of the north sump screen is approximately 10 sq. ft. and that of the south sump screen is zero. Therefore, at least one of the sump screens will be free of any unqualified coating debris during a post-LOCA condition and the north screen is not expected to be significantly affected. The evaluation further states that, in the original post-LOCA evaluation, the assumption was that one sump screen is fully clogged and the other sump screen is 50% clogged. From the walkdown reports, it can be seen that the south sump screen will be free of unqualified coating debris and the north sump screen will be marginally affected by such debris during a post-LOCA condition, therefore the existing status of unqualified coatings inside the Unit 4 containment is acceptable. The inspectors concurred with this decision.

6. ASME Section XI, Subsection IWF Inservice Inspection Program

The applicant uses ASME Section XI, Subsection IWF Inservice Inspection Program (ISI/IWF) to manage the aging effects of Class 1, 2, and 3 component supports. In its basis document, PTN-ENG-LRAM-00-0027, "ASME Section XI, Subsection IWF Inservice Inspection Program - License Renewal Program Basis Document," Revision 1, 8/15/00, it states that the purpose of this document is to "document those activities that are credited as part of the license renewal process." The stated scope of this program is that it applies to "Turkey Point Units 3&4, Class 1, 2, and 3 component supports including those exposed surfaces of structural bolted or welded

connections." Attachment 11.1 lists all component supports reviewed by this document. Reactor Coolant System (RCS) supports are separately evaluated under PTN-ENG-:LRAM-99-0053, "Aging Management Review for the Reactor Coolant System Supports," Revision 2, 7/17/01. The ISI/IWF program attributes evaluated are the same as Appendix A of the NRC's Standard Review Plan-License Renewal. The ISI/IWF inspections are conducted during plant refueling outages. Corrosion of steel and bolts, concrete chipping around support base plates, missing parts, etc. have been documented, evaluated, and repaired as appropriate. The applicant states that " the overall effectiveness of the ISI/IWF program is supported by the results of past inspections during outages and the fact that no significant structural damage of carbon and low alloy steel components has occurred since the implementation of this program."

The applicant states that the Turkey Point RCS supports are bounded by the Westinghouse document WCAP-14422, "Licensing Renewal Evaluation: Aging Management for Reactor Coolant System Supports," Revision 2, February, 1997 and, therefore, uses the Westinghouse document as their aging management program. Section 5 of PTN-ENG-LRAM-99-0053 addresses all 16 applicant action items contained in NRC safety evaluation report (SER) of WCAP-14422 as required by the SER. The inspectors found the document is adequate. The inspectors also reviewed the latest visual examination of the RCS supports of both units. The visual examination for Unit 3 was performed during the October, 1998 outage and for Unit 4, the June, 1998 outage. The examination inspected supports for the steam generator, the pressurizer, and the reactor coolant pump and found there were no recordable items. The inspectors concluded that the applicant's ISI/IWF is adequate.

E. Fire Protection Program

The inspectors reviewed the LRAMR document and the LRBD for the Fire Protection and Transformer Deluge Systems. The Fire Protection Program is a well developed program which has evolved over its years of development. The program includes many test and inspection features to detect and prevent aging effects in fire protection equipment. The only enhancement required was to include an inspection of the expansion joints associated with the diesel fire pump.

Several other AMPs are credited with managing the aging effects of fire protection equipment. The Periodic Surveillance and Preventive Maintenance program was credited with managing loss of material for the Reactor Coolant pump Oil Collection System. The Boric Acid Wastage Surveillance Program was credited with managing the loss of material from external surfaces of carbon steel and cast iron components of the Fire Protection and Transformer Deluge Systems. The Galvanic Corrosion Susceptibility Inspection Program is credited with assessing whether Galvanic Corrosion is a significant aging mechanism in affected portions of the Fire Protection and Transformer Deluge System. For each of these credited programs, the inspectors verified that their basis documents included the Fire Protection program in scope. The inspectors concluded that the applicant's review was comprehensive and acceptable.

Exit Meeting Summary

The results of this inspection were discussed on September 14, 2001 with members of the FPL staff in an exit meeting open for public observation at the City Hall of Florida City FL. The applicant acknowledged their understanding of the findings discussed and presented no dissenting comments. During the exit meeting the inspectors asked the applicant whether any of the material examined during the inspection should be considered proprietary. Some proprietary information was reviewed by the inspectors during the inspection but none is included in this report.

ATTACHMENT 1

SUPPLEMENTAL INFORMATION

PARTIAL LIST OF PERSONS CONTACTED

Applicant

B. Beisler, License Renewal Group
S. Franzone, Licensing Manager
S. Hale, License Renewal Lead
R. Hovey, Vice President
T. Jones, Plant Manager
F. Prieto, License Renewal Group
E. Thompson, Project Manager
T. Menocal, License Renewal Group

LIST OF DOCUMENTS REVIEWED

Engineering Documents

ICW Header Crawl-Through Comprehensive Plan for October 1992 through September, 2004

Letter L-90-29 dated January 30, 1990; Service Water System Problems Affecting Safety Related Equipment-Generic Letter 89-13

Letter L-99-176 dated November 30, 1999; Soluble Boron Credit for Spent Fuel Pool and Fresh Fuel Rack Criticality Analyses

Letter L-2001-115 dated May 16, 2001; Soluble Boron Credit for Spent Fuel Pool and Fresh Fuel Rack Criticality Analyses Fuel Rack Surveillance Testing 2001 Report and Commitment Change for Fuel Rack Surveillance Testing Frequency

Letter L-2000-054 dated March 15, 2000; Soluble Boron Credit for Spent Fuel Pool and Fresh Fuel Rack Criticality Analyses Response to Request for Additional Information

Letter L-2000-109 dated May 15, 2000; Soluble Boron Credit for Spent Fuel Pool and Fresh Fuel Rack Criticality Analyses Documenting the FPL/NRC April 5, 2000 Telephone Conference

Calculation No. PTN-BFSM-00-002, Underground Intake Cooling Water Piping External Corrosion Evaluation, Revision 0

Standard No. STD-ESI-92-002, Turkey Point Units 3 and 4 Intake Cooling Water System Piping Inspection Guidelines, Revision 1

PTN-ENG-LRAM-00-0055, Engineering Evaluation of Environmental Effects of Fatigue, Revision 1

Specification No. 5177-090-C141.1, Specification for Furnishing, Erecting, and Testing Carbon Steel Flat-Bottom Tank and Stainless Steel Vent Tank for Demineralized Water Storage, Rev.5

PTN-ENG-SEMS-01-055, Revision 0, Degradation Assessment For Turkey Point Unit 3 & 4 Steam Generators July 2001

PTN-ENG-SEMS-00-066, Revision 0, Condition Monitoring and Operational Assessment For Turkey Point Unit 3 Steam generators Based on Eddy current Examination End of Cycle 17 March 2000

PTN-ENG-SEMS-00-0093, Revision 0, Condition Monitoring and Operational Assessment For the Turkey Point Unit 4, Steam Generators Based on End of Cycle 18 October 2000

JPN-PTN-SEMS-91-091, Revision 0, Engineering Evaluation of BMI Thimble Tube wear
PC/M No. 01-036, Revision 0, Turkey Point Unit 3 Cycle 9 Reload Design

Calculation PTN-3FJF-01-078, Revision 0, Turkey Point Unit 3, Cycle 19 Technical Specification review

Calculation EFPY for T.S. 3.4.9.1 Pressure Temperature Limits

Calculation PTN-BFJF-99-049, Revision 1, Turkey Point Units 3 and 4 Vessel Fluence Projections at 32 and 48 EFPY

NRC SER dated October 30, 2000, Operating License Amendments 208 (Unit 3) and 202 (Unit 4) covering T.S. changes related to pressure-temperature (P/T) limit curves and the Cold Overpressure Mitigation System (COMS) requirements

SWRI Project No. 06-8575 Final Report, Reactor Vessel Material Surveillance Program For Turkey Point Unit No. 3: Analysis of Capsule V dated August 1986

WCAP-15222, Aging Management Review and Time Limited Aging Analysis for the Turkey Point Units 3 and 4 Reactor Pressure Vessels

WCAP-14572, Westinghouse Structural Reliability and Risk Assessment (SRRA) Model for Piping Risk-Informed Inservice Inspection

ISI Plan for Unit 3 Cycle 19 2001 Outage Plan

Steam Generator Secondary Side Visual Examination - Unit 3 SG “C” 3/7/00

Steam Generator Secondary Side Visual Examination - Unit 4 SG “B” 10/1/00

ISI-PTN-3-Plan, Revision 1, Turkey Point Nuclear Power Plant Unit No. 3 Inservice Inspection Plan

ISI-PTN-4-Plan, Revision 1, Turkey Point Nuclear Power Plant Unit No. 4 Inservice Inspection Plan

CSI-FAC-PTN-3-19P, Revision B, Fall 2001 Outage Cycle 19 Flow-Accelerated Corrosion (FAC) Outage Inspection Plan For Turkey Point Unit 3

CSI-FAC-PTN-4-20P, Revision A, Turkey Point Unit 4 Spring 2002 Outage Cycle 20 Flow-Accelerated Corrosion (FAC) Outage Inspection Plan

Unit 3 2001 Refueling Outage ISI Scope

Unit 4 2002 Refueling Outage ISI scope

Licensing Documents

Turkey Point Units 3&4 Updated Final Safety Analysis Report, Rev. 17

Application For Renewed Operating License - Turkey Point Nuclear Plant Units 3 & 4

License Renewal Aging Management Reviews

PTN-ENG-LRAM-99-0122, Auxiliary Feedwater (AFW) and Condensate Storage and Transfer Systems, Rev.1

PTN-ENG-LRAM-99-0145, B&W Owners Group Non-class 1 Mechanical Tools Document Review, Rev.4

PTN-ENG-LRAM-99-0142, Containment Purge System and Miscellaneous Containment Building Mechanical Components, Rev. 2

PTN-ENG-LRAM-99-0129, Containment Post Accident Evaluation System, Rev. 0

PTN-ENG-LRAM-99-0141, Containment Ventilation Systems, Rev. 2

PTN-ENG-LRAM-99-0120, Instrument Air, Nitrogen & Hydrogen, and Breathing Air systems, Rev. 2

PTN-ENG-LRAM-99-0119, Residual Heat Removal System, Rev. 2

PTN-ENG-LRAM-99-0127, Safety Injection and Accumulator, Rev. 1

PTN-ENG-LRAM-99-0109, Containment Spray System, Rev. 2

PTN-ENG-LRAM-99-0054, Class 1 Piping, Rev. 0

PTN-ENG-LRAM-99-0144, Emergency Diesel Generator and EDG Air Start Systems, Rev. 2

PTN-ENG-LRAM-99-0139, Emergency Diesel Generator Cooling Water System, Rev. 1

PTN-ENG-LRAM-99-0140, Emergency Diesel Generator Fuel and Lube Oil System, Rev. 3

PTN-ENG-LRAM-99-0124, Plant Ventilation Systems, Rev. 3

PTN-ENG-LRAM-99-0128, Spent Fuel Pool Cooling System, Rev. 2

PTN-ENG-LRAM-99-0121, Intake Cooling Water System, Rev. 2

PTN-ENG-LRAM-99-0033, Revisions 2 and 3, License Renewal Aging Management Review For The Pressurizer

PTN-ENG-LRAM-99-0034, Revisions 2 and 3, License Renewal Aging Management Review For The Reactor Pressure Vessel

PTN-ENG-LRAM-99-0075, Revision 3, License Renewal Aging Management Review For The Reactor Vessel Internals

PTN-ENG-LRAM-99-0089, Revisions 3 and 4, License Renewal Aging Management Review For The Steam Generator

PTN-ENG-LRAM-99-0124, Revision 3, License Renewal Aging Management Review - Plant Ventilation Systems

PTN-ENG-LRAM-99-0126, Revision 3, License Renewal Aging Management Review - CVCS and Boron Addition System

PTN-ENG-LRAM-99-0130, Revision 1, License Renewal Aging Management Review - Primary Sample System

PTN-ENG-LRAM-99-0134, Revision 0, License Renewal Aging Management Review - Secondary Sampling System

PTN-ENG-LRAM-99-0135, Revision 2, License Renewal Aging Management Review - Feedwater and Blowdown System

PTN-ENG-LRAM-99-0136, Revision 2, License Renewal Aging Management Review - Reactor Coolant System (Non-Class 1)

PTN-ENG-LRAM-99-0138, Revision 3, License Renewal Aging Management Review - Component Cooling Water System

PTN-ENG-LRAM-99-0151, Revision 2, License Renewal Aging Management Review - Regenerative, Excess Letdown and RCP Thermal Barrier Heat Exchangers

PTN-ENG-LRAM-99-0058, Revision 3, License Renewal Aging Management Review - Medium and Low Voltage Power Penetrations, Cables, and Connections

PTN-ENG-LRAM-99-0057, Revision 3, License Renewal Aging Management Review - Low Voltage Instrumentation and Control Penetrations, Cables, and Connections

PTN-ENG-LRAM-99-0125, Revision 3, License Renewal Aging Management Review - Fire Protection and Transformer Deluge System

PTN-ENG-LRAM-99-0114, “Structures and Structural Components,” Revision 3, 7/26/01

PTN-ENG-LRAM-99-0053, “Reactor Coolant System Supports,” Revision 2, 7/17/01

PTN-ENG-LRAM-99-0055, “Containment Structure and Internal Structural Components,” Revision 4, 5/14/01

License Renewal Basis Documents

PTN-ENG-LRAM–00-0060, AFW Pump Oil Coolers Inspection, Rev. 1

PTN-ENG-LRAM-00-0177, AFW Steam Piping Inspection Program, Rev. 0

PTN-ENG-LRAM-00-0065, Emergency Containment Coolers Inspection, Rev. 0

PTN-ENG-LRAM-00-0064, Field Erected Tanks Internal Inspection, Rev. 1

PTN-ENG-LRAM-00-0036, Chemistry Control Program, Rev. 2

PTN-ENG-LRAM-00-0039, Small bore Class 1 Piping Inspection, Rev. 2

PTN-ENG-LRAM-00-0029, Containment Spray System Piping Inspection Program, Rev. 2

PTN-ENG-LRAM-00-0028, Boric Acid Wastage Surveillance Program, Rev. 3

PTN-ENG-LRAM-00-0031, Intake Cooling Water System Inspection Program, Rev. 2

PTN-ENG-LRAM-00-0040, Boraflex Surveillance Program, Rev. 2

PTN-ENG-LRAM-00-0051, Fatigue Monitoring Program, Rev. 2 and 3

PTN-ENG-LRAM-00-0054, Galvanic Corrosion Susceptibility Inspection Program, Rev. 1

PTN-ENG-LRAM-00-0042, Systems and Structures Monitoring Program, Rev. 2

PTN-ENG-LRAM-00-0043, Periodic Surveillance and Preventive Maintenance Program, Rev. 2

PTN-ENG-LRAM-00-0030, Revision 1, Thimble Tube Inspection Program

PTN-ENG-LRAM-00-0033, Revisions 1, Flow Accelerated Corrosion Program

PTN-ENG-LRAM-00-0034, Revision 1, Reactor Vessel Head Alloy 600 Penetration Inspection Program

PTN-ENG-LRAM-00-0035, Revision 2, Steam Generator Integrity Program

PTN-ENG-LRAM-00-0037, Revision 1, Reactor Vessel Integrity Program

PTN-ENG-LRAM-00-0041, Revision 2, Reactor Vessel Internals Inspection Program

PTN-ENG-LRAM-00-0044, Revision 1, ASME Section XI, Subsections IWB, IWC and IWD Inservice Inspection

PTN-ENG-LRAM-00-0044, Rev. 0, Containment Cable Inspection Program

PTN-ENG-LRAM-00-0038, Rev. 2, Fire Protection Program

PTN-ENG-LRAM-00-0026, “ASME Section XI, Subsection IWE Inservice Inspection Program,” Revision 2, 8/16/01

PTN-ENG-LRAM-00-0025, ”ASME Section XI, Subsection IWL Inservice Inspection Program,” Revision 2, 8/9/01

PTN-ENG-LRAM-00-0027,”ASME Section XI, Subsection IWF Inservice Inspection Program,” Revision 1, 8/15/01

Proposed (Marked Up) Procedures

3/4-OSP-041.2, Reactor Coolant System Visual Leak Inspection and Leak Evaluation

3/4-OSP-056.2, Emergency Containment Filter System Performance Test

0-OSP-201.2, SNPO Daily Logs

0-PMM-013.6, Instrument Air Drain Trap Overhaul

0-PMM-013.7, Instrument Air Dryer Oil and Water Separator Prefilter Cleaning and Inspection

0-PMM-019.3, Spare Intake Cooling Water Pump Overhaul

0-PMM-019.7, ICW Basket Strainer Cleaning and Inspection

0-PMM-019.9, Intake Cooling Water Pump Discharge Check Valve Inspection and Overhaul

0-PMM-030.1, CCW Heat Exchanger Cleaning

0-OP-019, Intake Cooling Water System

0-OSP-019.4, CCW Heat Exchanger Performance Monitoring

3/4-OSP-041.2, Reactor Coolant System Visual Leak Inspection and Leak Evaluation

3/4-OSP-056.2, Emergency Containment Filter System Test

Existing Plant Procedures and Programs

0-ADM-652.7, Diesel Fuel Oil Quality Control Program, 12/6/00

0-NCSP-004, Schedule for Periodic Tests, 5/1/01

0-ADM-651, Nuclear Chemistry Parameters Manual, 6/8/01

0-ADM-100, Preparation, Revision, Review, Approval and Use of Procedures dated 4/12/01

0-ADM-101, Procedure Writer’s Guide dated 3/30/01

0-ADM-102, On the Spot Changes to Procedures dated 5/11/01

0-ADM-215, Plant Surveillances Tracking Program dated 5/11/01

0-ADM-501, Duties and Responsibilities of System Engineers dated 11/10/99

0-ADM-553, Maintaining Records for Design Cycles dated 4/17/00

0-ADM-710, Control of Preventive Maintenance dated 4/25/00

0-PMM-019.2, Intake Cooling Water Pump Removal and Replacement dated 5/10/01

0-PMM-019.7, Intake Cooling Water Basket Strainer Cleaning and Inspection dated 4/18/01

0-PMM-019.8, Intake Cooling Water Pump Discharge Check Valve Removal and Installation dated 5/10/01

0-PMM-019.16, Intake Cooling Water Pump Expansion Joint Removal and Installation dated 2/17/00

3-PMM-022.3, Emergency Diesel Generator 18 Month Preventive Maintenance dated 10/17/00

4-PMM-022.3, Emergency Diesel Generator 18 Month Preventive Maintenance dated 10/17/00

0-NCAP-015.5, Determination of Particulate Contamination in Diesel Fuel Oil dated 10/26/99

0-NCSP-004, Schedule for Periodic Tests dated 5/1/01

0-OSP-022.6, Diesel Fuel Oil Storage Tank Accumulated Water Removal dated 4/12/01

0-OSP-200.1, Schedule of Plant Checks and Surveillances dated 8/2/01

0-OSP-033.3, Spent Fuel Pool Boraflex Testing dated 10/31/00

EDI-SE-005, Component and System Walkdowns dated 8/01/01

18712-410-M001, Intake Cooling Water System Piping Internal Inspection Guidelines 1991 Dual Unit Outage dated 12/04/90

0-ADM-060, 4/22/00, Steam Generator Integrity Program Administration

Eng/CSI-NDE-99-051, Revision 2 - Steam Generator Secondary Side Integrity Plan

ENG/CSI 2.2, Revision 4, Planning and Reporting Results of Steam Generator tubing Examinations

ENG/CSI 2.3, Revision 1, Steam Generator Integrity Program Administration

ENG-QI 5.7, Revision 2, Steam Generator Integrity Program

NDE 1.4, Revision 1, Eddy Current Examination Flux Thimble Tubing

0-GMI-059.4, 8/30/95, Flux Map Thimble Tube Eddy Current Test (ECT)

0-ADM-532, Revision 3/8/01, ASME Section XI Repair/Replacement Program

0-ADM-523, Revision 11/10/99, ASME Section XI Pressure Tests for Quality Group A, B, C Systems/Components

0-ADM-217, 3/8/00, Conduct of Infrequently Performed Tests or Evaluations

0-ADM-557, 4/19/00, Duties and Responsibilities of Reactor Engineers

0-ADM-527, 12/8/99, Reactor Material Surveillance Program

3-OSP-045.1, Revision 5/10/01, ASME Section XI Quality Group A Bolting Examination

3-OSP-045.2, Revision 5/10/01, ASME Section XI Quality Group B Bolted Connection

3-OSP-045.3, Revision 7/13/99, ASME Section XI Quality Group C Bolting Examination

4-OSP-045.1, Revision 5/10/01, ASME Section XI Quality Group A Bolting Examination

4-OSP-045.2, Revision 5/10/01, ASME Section XI Quality Group B Bolted Connection

4-OSP-045.3, Revision 7/13/99, ASME Section XI Quality Group C Bolting Examination.

ENG-CSI-FAC-100, Revision 9, Corporate Long-Term Flow-Accelerated Corrosion Monitoring Program

0-ADM-530, 12/28/00, Flow Accelerated Corrosion (FAC) Inspection Implementation Program

0-ADM-502, “In-Service Testing (IST) Program,” 5/11/01

ISI-PTN-3/4-Program, “Third Interval Inservice Inspection Program,” Revision 3, 2/1/00

0-ADM-732, “Protective Coatings,” 12/28/00

0-ADM-531, “Containment Leakage Rate Testing Program,” 11/17/99

4-OP-010-1, “Cathodic Protection System,” 8/2/01

0-PME-009-1, “Intake Structure Cathodic Protection,” 4/14/99

PTN-4FSC-98-10003, “Evaluation of Existing Unqualified Coatings in Unit 4 Containment,” Rev 2, 10/25/00

ENG-IWL-1.0, “Visual Inspection VT-1C,” Rev 0, 12/19/00

ENG-IWL-2.0, “Visual Inspection VT-3C,” Rev 0, 12/19/00

ISI/IWL-PTN-3/4, “Concrete Containment Inservce Inspection Program,” Rev 1, 12/19/00

Operation Procedure 13100.2, “Integrated Leakage Rate Test,” 6/25/92

Plant Drawings

Bechtel Drawing 5610-C-18-392, Condensate and Diesel Fuel Storage Tank, Rev. 5

TPN-5610-C-18-393, Primary and Refueling Water Storage Tanks, Rev. 3

5613-P-608,609-S, Containment Spray System Inside Containment (isometric) Stress Problem 58A, Rev.3

5610-C-150, Containment Structure Foundation Plan & Details, Rev 15

Plant Records

Units 3 and 4 Component Cooling Water Heat Exchanger plug status through January, 2001

Internal Inspection of the Unit 3A ICW System dated September 10-13, 1995

Unit 3B ICW Inspection dated October 9-12, 1998

Unit 4A ICW Inspection dated September 27-October 4, 2000

Inspection of the Unit 4B ICW System dated April 15-18, 1993

Unit 4B ICW Inspection dated September 18-24, 1997

Annual Report for Design Cycles (0-ADM-553) dated 7/10/2001

Unit 3 Spent Fuel Pool Silica Results Trend; July, 1998 through September, 2001

Unit 4 Spent Fuel Pool Silica Results Trend; January, 1998 through September, 2001

NET-165-01, BADGER Test Campaign at Turkey Point Unit 3 (Boraflex Test Results) dated 1/24/01

Holtec Report HI-951401, Blackness Testing in Selected Cells of the Turkey Point Unit 4 Spent Fuel Storage Racks dated January, 1996

NCR N-91-0508, Minimum Wall conditions on Containment Spray (CS) Piping, 6/28/91

ESI-NDE-92-0190, Nondestructive Examination (NDE) Report, Ultrasonic Thickness Survey of the CS Piping Inside Containment, Unit 3, 10/27/92

ESI-NDE-93-113, NDE Report, Ultrasonic Thickness Survey of CS Piping Inside Containment, Unit 4, 5/12/93

Model Work Order, WO 30013231, Volumetric Examination of Containment Spray header, 7/11/00

NCR 00-1803, Document As-Found Condition of CS Piping, 10/6/00

ISI-PTN-3-2000, March 2000,Turkey Point Nuclear Plant Unit 3 2000 Inservice Inspection Report

ISI-PTN-4-2000, September 2000, Turkey Point Nuclear Plant Unit4 2000 Inservice Inspection Report including Visual Examination Record VT-2

4-OSP-041.25, 8/19/99, RCS Over-Pressure Leak Testing, including Test Record Sheet 04-RCS-4111-L-03, 10/21/00, and associated VT-2 Visual Examination Records

3-OSP-041.25, 8/18/99, RCS Over-Pressure Leak Testing, including Test Record Sheet 03-RCS-4101-L-03, 3/22/00, and associated VT-2 Visual Examination Records

CSI-FAC-PTN-3-18D, Revision 0, Turkey Point Unit 3 Cycle 18 Spring 2000 Refueling Outage Flow-Accelerated Corrosion Final Report

CSI-FAC-PTN-4-19D, Revision 0, Turkey Point Unit 4 Cycle 19 Fall 2000 Refueling Outage Flow-Accelerated Corrosion Final Report

VT-3 Visual Examination Record Data Sheet 4.3-20 for Reactor Vessel Internal for Turkey Point Unit 3 dated 10/11/98

VT-3 Visual examination Record Data Sheet 4.3-24 for Reactor vessel Internals for Turkey point Unit 4 dated 3/24/99

Steam Generator Secondary Side Visual Examination, Unit 3 Steam Generator C dated 3/7/00

Steam Generator Secondary Side Visual Examination, Unit 4 Steam Generator B dated 10/1/00

IWL Concrete Inspection Report for Unit 3 and 4, 9/5/01

1992 TPN Unit 3 ILRT, “Reactor Containment Building Integrated Leak Rate Test Report,” 11/14/92

1991 TPN Unit 4 ILRT, “Reactor Containment Building Integrated Leak Rate Test Report,” 10/20/91

Third Inspection Interval, 2000 Refueling Outage Inservice Inspection Report, Units 3 and 4, 10/00

Partial Visual Inspection Records for RCS Supports, Unit 3, 10/6/98

Partial Visual Inspection Report for RCS Supports, Unit 4, 6/29/98

Partial Local Leak Rate Test - Containment Penetration Leakage Summary, Unit 3, 3/00

Partial Local Leak Rate Test - Containment Penetration Leakage Summary, Unit 4, 10/00

ATTACHMENT 2

TURKEY POINT UNITS 3 & 4
LICENSE RENEWAL AGING MANAGEMENT INSPECTION
SELECTED INSPECTION SAMPLE

MECHANICAL SYSTEMS

System Name	Applicable Aging Management Program
Auxiliary Building Ventilation	Boric Acid Wastage Surveillance Program Chemistry Control Program Galvanic Corrosion Susceptibility Inspection Program Periodic Surveillance and Preventive Maintenance Program Systems and Structures Monitoring Program
Component Cooling Water	Boric Acid Wastage Surveillance Program Chemistry Control Program Galvanic Corrosion Susceptibility Inspection Program Intake Cooling Water System Inspection Program Systems and Structures Monitoring Program
Control Building Ventilation	Chemistry Control Program Galvanic Corrosion Susceptibility Inspection Program Periodic Surveillance and Preventive Maintenance Program Systems and Structures Monitoring Program
Chemical and Volume Control	Boric Acid Wastage Surveillance Program Chemistry Control Program Galvanic Corrosion Susceptibility Inspection Program Periodic Surveillance and Preventive Maintenance Program Systems and Structures Monitoring Program
Feedwater and Blowdown	Boric Acid Wastage Surveillance Program Chemistry Control Program Field Erected Tanks Internal Inspection Flow Accelerated Corrosion Program Galvanic Corrosion Susceptibility Inspection Program Systems and Structures Monitoring Program

Reactor Coolant	ASME Section XI, Subsections IWB,IWC,and IWD Inservice Inspection Program Boric Acid Wastage Surveillance Program Chemistry Control Program Galvanic Corrosion Susceptibility Inspection Program Systems and Structures Monitoring Program Reactor Vessel Head alloy 600 penetration Inspection Program Reactor Vessel Integrity Program Thimble Tube inspection Program Reactor Vessel Internals Inspection Program Steam generator Integrity Program
Sample System - NSSS and Secondary	Boric Acid Wastage Surveillance Program Chemistry Control Program Systems and Structures Monitoring Program Small Bore Class 1 Piping Inspection
Auxiliary Feedwater and Condensate Storage	Auxiliary Feedwater Pump Oil Coolers Inspection Auxiliary Feedwater Steam Piping Inspection Program Chemistry Control Program Field Erected Tanks Internal Inspection Galvanic Corrosion Susceptibility Inspection Program Systems and Structures Monitoring Program
Containment Isolation	Boric Acid Wastage Surveillance Program Systems and Structures Monitoring Program
Containment Post-Accident Monitoring And Control	Boric Acid Wastage Surveillance Program Chemistry Control Program Systems and Structures Monitoring Program
Containment Spray	Chemistry Control Program Containment Spray System Piping Inspection Program Galvanic Corrosion Susceptibility Inspection Program Systems and Structures Monitoring Program Boric Acid Wastage Surveillance Program
Emergency Containment Cooling	Chemistry Control Program Emergency Containment Cooler Inspection Galvanic Corrosion Susceptibility Inspection Program Systems and Structures Monitoring Program Boric Acid Wastage Surveillance Program
Emergency Containment Filtration	Boric Acid Wastage Surveillance Program

	Periodic Surveillance and Preventive Maintenance Program
Residual Heat Removal	Boric Acid Wastage Surveillance Program Chemistry Control Program Galvanic Corrosion Susceptibility Inspection Program Periodic Surveillance and Preventive Maintenance Program Systems and Structures Monitoring Program
Safety Injection	Chemistry Control Program Field Erected Tanks Internal Inspection Galvanic Corrosion Susceptibility Inspection Program Systems and Structures Monitoring Program Boric Acid Wastage Surveillance Program Fatigue Monitoring Program Boraflex Surveillance Program
Emergency Diesel Generators and Support Systems	Chemistry Control Program Periodic Surveillance and Preventive Maintenance Program Systems and Structures Monitoring Program
Emergency Diesel Generator Building Ventilation	None Required
Instrument Air	Boric Acid Wastage Surveillance Program Galvanic Corrosion Susceptibility Inspection Program Periodic Surveillance and Preventive Maintenance Program Systems and Structures Monitoring Program
Intake Cooling Water	Boric Acid Wastage Surveillance Program Intake Cooling Water System Inspection Program Periodic Surveillance and Preventive Maintenance Program Systems and Structures Monitoring Program
Spent Fuel Pool Cooling	Boric Acid Wastage Surveillance Program Chemistry Control Program Galvanic Corrosion Susceptibility Inspection Program Systems and Structures Monitoring Program

TURKEY POINT UNITS 3 & 4
LICENSE RENEWAL AGING MANAGEMENT INSPECTION
SELECTED INSPECTION SAMPLE

STRUCTURES

Structure Name	Applicable Aging Management Program
Auxiliary Building	ASME Section XI, Subsection IWF Inservice Inspection Program Boric Acid Wastage Surveillance Program Systems and Structures Monitoring Program Periodic Surveillance and Preventive Maintenance Program
Containments	Systems and Structures monitoring Program ASME Section XI, Subsection IWE Inservice Inspection Program Boric Acid wastage Surveillance Program ASME Section XI, Subsection IWL Inservice Inspection Program ASME Section XI, Subsection IWF Inservice Inspection Program
Control Building	Systems and Structures Monitoring Program Periodic Surveillance and Preventive Maintenance Program
Cooling Water Canals	None Required
Diesel Driven Fire Pump Enclosure	Systems and Structures Monitoring Program
Discharge Structure	Systems and Structures Monitoring Program
Electrical Penetration Rooms	Systems and Structures Monitoring Program Periodic Surveillance and Preventive Maintenance Program
Emergency Diesel Generator Buildings	ASME Section XI, Subsection IWF Inservice Inspection Program Systems and Structures Monitoring Program Periodic Surveillance and Preventive Maintenance Program
Fire Protection Monitoring Station	Systems and Structures Monitoring Program
Fire Rated Assemblies	Fire Protection Program
Intake Structure	Systems and Structures Monitoring Program

Main Steam and Feedwater Platforms	Systems and Structures Monitoring Program
Plant Vent Stack	Systems and Structures Monitoring Program
Spent Fuel Storage and Handling	Boric Acid Wastage Surveillance Program Chemistry Control Program Systems and Structures Monitoring Program Boraflex Surveillance Program
Turbine Building	Systems and Structures Monitoring Program Periodic Surveillance and Preventive Maintenance Program
Turbine Gantry Cranes	Systems and Structures Monitoring Program
Yard Structures	ASME Section XI, Subsection IWF Inservice Inspection Program Boric Acid Wastage Surveillance Program Systems and Structures Monitoring Program

TURKEY POINT UNITS 3 & 4
LICENSE RENEWAL AGING MANAGEMENT INSPECTION
SELECTED INSPECTION SAMPLE

ELECTRICAL SYSTEMS AND FIRE PROTECTION

System Name	Applicable Aging Management Programs
125 VDC and 120 VAC 4.16 kV 480 V Switchgear and Motor Control Centers ATWS Mitigating System Actuation Circuitry (AMSAC) Communications Containment Electrical Penetrations (conductor and non-metallic portions) Emergency Load Sequencer Emergency Response Facility and Plant Computer Engineering Safeguards Fire and Smoke Detection Lightning Protection Nuclear Instrumentation (Incore and Excore) Process Radiation Monitoring Qualified Safety Parameter Display System (QSPDS) Reactor Protection Electrical Equipment Room Ventilation	Electrical Cable Inspection Program Environmental Qualification
Fire Protection	Boric Acid Wastage Surveillance Program Fire protection Program Galvanic Corrosion Susceptibility Inspection Program Periodic Surveillance and Preventive Maintenance Program

ATTACHMENT 3

LIST OF ACRONYMS USED

ABVS	Auxiliary Building Ventilation System
AFW	Auxiliary Feedwater System
AMP	Aging Management Program
ATWS	Anticipated Transient Without a Scram
CASS	Cast Stainless Steel
CBVS	Control Building Ventilation System
CCW	Component Cooling Water
CPS	Cathodic Protection System
CR	Condition Report
CRDM	Control Rod Drive Mechanism
CRVS	Control Room Ventilation System
CS	Containment Spray system
CSRVS	Computer/Cable Spreading Room Ventilation System
CST	Condensate Storage Tank
CVCS	Chemical Volume and Control System
CWS	Circulating Water System
DBA	Design Basis Accident
DBD	Design Basis Document
DCVS	DC Equipment/Inverter Room Ventilation System
DWST	Demineralized Water Storage Tank
EAF	Environmentally assisted Fatigue
ECC	Emergency Containment Cooling system
ECFS	Emergency Containment Filtration System
EDG	Emergency Diesel Generator
EQ	Environmental Qualification program
FAC	Flow Accelerated Corrosion
FPL	Florida Power and Light Company
FW	Feedwater
HEPA	High Efficiency Particulate Air filters
HVAC	Heating Ventilation and Air Conditioning
IA	Instrument Air
ICW	Intake Cooling Water System
ILRT	Integrated Leak Rate Test
ISI	Inservice Inspection
LR	License Renewal
LRA	License Renewal Application
LRAMR	License Renewal Aging Management Review
LRBD	License Renewal Basis Document
MS	Main Steam
NCR	Non-Conformance Report
NNS	Non Nuclear Safety Related
NRR	NRC Office of Nuclear Reactor Regulation
NSSS	Nuclear Steam Supply System
P/T	Pressure/Temperature
PWSCC	Primary Water Stress Corrosion Cracking

P&IDs	Piping and Instrumentation Diagrams
RAI	Request for Additional Information
RCP	Reactor Coolant Pump
RCS	Reactor Coolant System
RHR	Residual Heat Removal
RV	Reactor Vessel
RVI	Reactor Vessel Internals
RWST	Refueling Water Storage Tank
SBO	Station Blackout event
SER	Safety Evaluation Report
SG	Steam Generator
SI	Safety Injection
SFPC	Spent Fuel Pool Cooling system
SSC	Systems, Structures, and Components
SSMP	Systems and Structures Monitoring Program
TEDB	Total Equipment Data Base
UFSAR	Updated Final Safety Analysis Report
UT	Ultrasonic Inspection
VT	Visual Inspection
VHP	Vessel Head Penetration