



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
ADVISORY COMMITTEE ON REACTOR SAFEGUARDS  
WASHINGTON, D.C. 20555-0001

ML02 077

0120

April 12, 2002

MEMORANDUM TO: ACRS Members

FROM:

*on behalf of*  
Robert Elliott, Senior Staff Engineer  
ACRS

SUBJECT:

CERTIFICATION OF THE SUMMARY/MINUTES OF THE ACRS  
SUBCOMMITTEE MEETING ON THE SAFETY EVALUATION REPORT  
RELATED TO THE LICENSE RENEWAL APPLICATION FOR TURKEY  
POINT UNITS 3 AND 4, MARCH 13, 2002, - FLORIDA CITY, FLORIDA

The minutes of the subject meeting, issued on March 18, 2002, have been certified as the official record of the proceedings of that meeting. A copy of the certified minutes is attached.

Attachment: As stated

cc via e-mail:

J. Larkins  
S. Bahadur  
ACRS Fellows and Technical Staff

cc:

ACRS Secretary  
E. Barnard (3 copies)

MEMORANDUM TO: Noel Dudley, Senior Staff Engineer  
ACRS

FROM: Dr. Mario Bonaca, Chairman  
Plant License Renewal Subcommittee

SUBJECT: CERTIFICATION OF THE MINUTES OF THE ACRS SUBCOMMITTEE  
MEETING ON THE SAFETY EVALUATION REPORT RELATED TO THE  
LICENSE RENEWAL APPLICATION FOR TURKEY POINT UNITS 3 AND 4,  
MARCH 13, 2002, – FLORIDA CITY, FLORIDA

I hereby certify that, to the best of my knowledge and belief, the minutes of the subject meeting issued on March 18, 2002, are an accurate record of the proceedings for the meeting.

\_\_\_\_\_  
Dr. Mario Bonaca, Chairman  
Plant License Renewal Subcommittee

\_\_\_\_\_  
Date

ML 02 077

0120

March 18, 2002  
revised April 10, 2002

MEMORANDUM TO: Dr. Mario Bonaca, Chairman  
Plant License Renewal Subcommittee

FROM: Noel Dudley, Senior Staff Engineer  
ACRS

SUBJECT: WORKING COPY OF THE MINUTES OF THE ACRS SUBCOMMITTEE  
MEETING ON THE SAFETY EVALUATION REPORT RELATED TO THE  
LICENSE RENEWAL APPLICATION FOR TURKEY POINT UNITS 3 AND 4,  
MARCH 13, 2002, – FLORIDA CITY, FLORIDA

A working copy of the minutes for the subject meeting is attached for your review. I would appreciate your review and comment as soon as possible. Copies are being sent to the Plant License Renewal Subcommittee members for information and/or review.

Attachment: As stated

cc: P. Ford  
T. Kress  
W. Shack  
J. Sieber  
J. Barton

cc via e-mail:  
J. Larkins  
S. Bahadur  
S. Duraiswamy

# CERTIFIED

Issued: 3/18/2002  
Certified: 4/12/2002

ADVISORY COMMITTEE ON REACTOR SAFEGUARDS  
MINUTES OF ACRS SUBCOMMITTEE MEETING ON  
PLANT LICENSE RENEWAL  
TURKEY POINT UNITS 3 AND 4  
MARCH 13, 2002  
FLORIDA CITY, FLORIDA

The ACRS Subcommittee on Plant License Renewal held a meeting on March 13, 2002, at the City Hall, 404 West Palm Drive, Florida City, Florida. The purpose of the meeting was to review the resolution of the open items identified in the Safety Evaluation Report (SER) related to the license renewal of Turkey Point Nuclear Plant, Units 3 and 4. Mr. Noel Dudley was the cognizant ACRS staff engineer for this meeting. The meeting was convened at 1:30 p.m. and adjourned at 4:30 p.m.

## ATTENDEES:

### ACRS

M. Bonaca, Chairman  
P. Ford, Member  
T. Kress, Member  
W. Shack, Member  
J. Sieber, Member

J. Barton, Consultant  
S. Duraiswamy, ACRS Staff  
N. Dudley, ACRS Staff

### NRC STAFF

C. Grimes, NRR  
R. Auluck, NRR  
J. Medoff, NRR

C. Julian, Region II  
C. Christensen, Region II

### FLORIDA POWER AND LIGHT COMPANY

E. Abbott, FPL  
S. Hale, FPL  
S. Collard, FPL

B. Beisler, FPL  
J. Hoffman, FPL  
J. Chrulski, FPL

A member of the public provided written comments. No requests were received for time to make oral statements. One member of the public attended the meeting and made oral statements. A list of meeting attendees is available in the ACRS Office files.

## ACRS SUBCOMMITTEE CHAIRMAN'S INTRODUCTION

Dr. Mario Bonaca, Chairman of the Plant License Renewal Subcommittee, convened the meeting and stated that the purpose of the meeting was to review the staff's SER related to the license renewal application for Turkey Point Nuclear Plant, Units 3 and 4. He noted that the Subcommittee had reviewed the application and the associated SER with open items on September 25, 2001. Dr. Bonaca read the written comments from a member of the public and requested that the staff reply to the comments. A copy of the written comments are attached. He called upon Mr. Christopher Grimes, Office of Nuclear Reactor Regulations (NRR) to begin.

## **STAFF PRESENTATION**

Mr. Christopher Grimes, NRR, thanked the ACRS for its involvement in reviewing the Turkey Point Nuclear Plant license renewal application and associated SER. He then introduced the NRC staff members who would be making the presentation.

### **Safety Evaluation Report**

Dr. Raj Auluck, NRR, summarized the written comments from a public citizen, provided an overview of the design of Turkey Point Nuclear Plant, Units 3 and 4, and outlined the staff's review schedule. He identified the requirements that the staff used to review the application.

The ACRS members and the staff discussed whether the review of the Turkey Point application was more efficient due to the lessons learned during the review of previous license renewal applications. The staff explained that fewer requests for additional information (RAIs) were issued compared to previous applications. However, more time was expended in resolving issues prior the issuance of RAIs, and therefore there was no significant gain in overall efficiency.

Dr. Auluck and Mr. James Medoff, NRR, explained the staff's bases for accepting the applicant's resolution of the four open items identified in the SER with open items. The bases included the following:

1. The applicant reevaluated class II non-safety-related piping that could fail due to aging mechanisms, such as erosion/corrosion, and adversely affect safety-related components. For the piping that was determined to meet this criteria, the applicant identified specific aging management programs.
2. The applicant had inspected the internals of three of the five water tanks, which are in the scope of license renewal. The applicant concluded that the existing coatings would prevent any aging degradation and committed to inspect the internals of all five tanks prior to the end of the extended period to verify this conclusion.
3. The applicant committed to inspect the penetrations in both reactor vessel heads and to comply with the industry's recommendations for any associated aging management programs, once they are developed.
4. The applicant committed to two renewal application items identified in the Westinghouse report WCAP-15338 concerning reactor pressure vessel underclad cracking. One item was to verify that the number of design cycles and transients assumed in WCAP-15338 bounds the number of cycles for 60 years of operations. The second item was to ensure that the evaluation of the time limited aging analysis (TLAA) is summarily described in the Final Safety Analysis Report supplement.

The ACRS members and the staff discussed what criteria were used to judge the credibility of postulated nonsafety-related pipe failures that would adversely impact safety-related components and structures. They also discussed the use of operating experience from non-nuclear industries in concluding that the coatings on the internal surface of the water tanks are effective in preventing pitting and corrosion.

The ACRS members and the staff discussed how the identification of significant reactor vessel head penetration leakage at Davis-Besse Nuclear Power Plant affects the staff's SER conclusions. They discussed whether ultrasonic testing of the reactor vessel would identify cracks at the base metal and cladding interface.

### **Public Comments**

Mr. Stan Smilan, a public citizen, noted that the airline industry was also concerned about corrosion of airplanes. He provided examples where corrosion had led to component failures. He stated that there had been no credible intervention or adversarial technical review of the Turkey Point license renewal application. He recommended that the local, state, or federal government fund technical experts to protect the public's interest.

Mr. Smilan described his past experiences as a civilian at early nuclear weapon tests and his present concerns about federal health care programs for civilians exposed to the radiation during these tests. He raised questions concerning terrorist threats associated with nuclear power plants, shipment of spent fuel through the Panama Canal, use of planes, and the likelihood of attacks being directed against the local Jewish population.

Dr. Bonaca expressed his appreciation for Mr. Smilan's views and noted that Mr. Smilan was welcome to present his concerns at the April 11-13, 2002 ACRS meeting in Rockville, Maryland.

Dr. Auluck and Mr. Medoff explained that the four issues identified in writing by a member of the public had been previously reviewed and resolved by the NRC staff. They presented the resolution of each of the four issues.

1. In the early 1980s, voids were identified in the containment structure below the containment equipment hatch. FPL performed an analysis that concluded the structural strength of the containment was not affected by the voids and repaired the voids. The staff reviewed the reports and issued a safety evaluation that accepted the conclusions of the report. Pressure tests performed over the last 20 years have confirmed that the pressure integrity of the containment has been maintained.
2. The design criteria of Turkey Point Units 3 and 4 bound the maximum hurricane wind speeds and storm wave heights that have been observed in the area. The Units survived hurricane Andrew without adverse consequences to the public health and safety. Procedures are in place to shut down the reactors and to take additional precautions if a severe storm is expected.
3. Security at nuclear power plants is being reviewed by the Federal Government. The FPL has increased security at Turkey Point Nuclear Plant. The NRC may require additional security once a national policy is established. Due to the sensitive nature of security information, details of the revised security plans and proposed changes cannot be discussed in a public forum.
4. Required spent fuel pool capacity is defined by technical specification. Plants are allowed to operate only if spent fuel pool capacity meets these requirements. This is an operating plant issue and is not within the scope of license renewal. FPL has the options of increasing the storage capacity of the spent fuel pool by reracking the fuel or building an independent spent fuel storage installation.

The ACRS members and the staff discussed the following:

- generic implications of the voids identified in the containment structure,
- possible changes in the large early release frequency because of the identified voids,
- availability of diesel fuel oil from suppliers during station blackout events, and
- the possibility that radioactive water from a severe accident in the containment can get into the ground water through a leak in the water proofing membranes or water stops.

### **Inspections and Audits**

Mr. Caudle Julian, Region II, described the inspections and audits performed at Turkey Point Nuclear Plant to verify information in the application. The ACRS members and the staff discussed the available inspection guidance and the development of plant-specific inspection plans.

Dr. Auluck concluded that all open items had been resolved and that the applicant had met the requirements for license renewal, as required by 10 CFR 54.29, "Standards for issuance of a renewed license."

### **SUBCOMMITTEE COMMENTS, CONCERNS, AND RECOMMENDATIONS**

Dr. Shack noted that the application contained less technical information for accepting leak-before-break as an aging management program for cast austenitic stainless steel piping, than for the acceptability of other aging management programs.

Dr. Bonaca noted that the application contained a description of the plant at one point in time. He stated that the staff review of the application was thorough and was dependent on the inspection and audit results. He recommended that the staff consider summarizing in the SER the changes made to the licensing bases as a result of license renewal.

Mr. Barton stated that based on his observation of workers and conditions of the structures and equipment during the site visit, the safety culture appeared to be good and the material condition of the plant was excellent considering the harsh environment.

### **STAFF AND FPL COMMITMENTS**

The staff agreed to determine whether there was any generic actions taken based on the identification of voids in the containment concrete.

The staff agreed to determine what effect, if any, the presence of voids in the containment wall would have on the large early release frequency.

### **SUBCOMMITTEE DECISIONS**

The Subcommittee requested that FPL provide an overview of the Turkey Point Nuclear Plant, Units 3 and 4 license renewal application at the April 11, 2002 ACRS meeting.

The Subcommittee requested that the staff summarize the information it presented to the Subcommittee at the April 11, 2002 ACRS meeting. In addition, the Subcommittee requested that the staff provide the status of the following:

- staff review of WCAP reports,
- generic license renewal issue concerning station black out, and
- generic license renewal issue concerning class II over I piping.

**FOLLOW-UP ACTIONS**

None.

**PRESENTATION SLIDES AND HANDOUTS PROVIDED DURING THE MEETING**

The presentation slides and handouts used during the meeting are available in the ACRS Office files or as attachments to the transcript.

**BACKGROUND MATERIAL PROVIDED TO THE SUBCOMMITTEE:**

U.S. Nuclear Regulatory Safety Evaluation Report Related to the License Renewal of Turkey Point Nuclear Plant, Units 3 and 4, issued February 2002.

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NOTE: Additional details of this meeting can be obtained from a transcript of this meeting available in the NRC Public Document Room, One White Flint North, 11555 Rockville Pike, Rockville, MD, (301) 415-7000, downloading or viewing on the Internet at "<http://www.nrc.gov/ACRSACNW>," or can be purchased from Neal R. Gross and Co., 1323 Rhode Island Avenue, NW, Washington, D.C. 20005, (202) 234-4433 (Voice), 387-7330 (Fax), e-mail: [nrgross@nealgross.com](mailto:nrgross@nealgross.com).

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Attachment 1

Mark P. Oncavage  
12200 SW 110th Avenue  
Miami, FL 33176

February 16, 2002

Mr. Noel Dudley  
U. S. Nuclear Regulatory Commission  
Advisory Committee on Reactor Safeguards  
Washington, D.C. 20555-0001

Dear Mr. Dudley:

I live 14 miles from Turkey Point and I have safety concerns about the continued operation of Turkey Point through the license renewal period. I will not be able to attend the public meeting on March 13, 2002 as I will be out of the country. I request that you inform the members of the ACRS of my safety concerns.

1. In the early eighties the licensee replaced steam generator lower assemblies in units 3 and 4. The assemblies were too big to fit through the existing doors so the doorways were widened. Voids, up to 4 feet in length, were discovered in the doorway. All indications I have seen, show that no further examinations for voids in the walls of the containment buildings were ever performed. I am concerned that thousands of voids in each building may exist. These voids may accelerate age related degradation by increasing internal surface area which may be subject to oxidation, hydration, crumbling, microbiotic action, and faulting. This degradation could also weaken the tendons, reinforcement rods, and the steel liner. As the plant ages, the structural strength of the buildings may be increasingly questionable in regard to an intentional terrorist air crash. Region II officials have been aware of this issue since June 2001 and have taken no action.

2. An unconfirmed story states that Hurricane Andrew, 1992, isolated Turkey Point for days. Diesel fuel for station power was only a few hours away from being exhausted when help finally arrived. Hurricane Andrew was a category 4 storm, not a category 5 maximum hurricane. I'm concerned that the single road servicing Turkey Point is easily blocked, a maximum storm could disable diesel generators, diesel storage tanks could be damaged, batteries could be insufficient or damaged, the electrical grid could be off line, or the site could run out of fuel. A category 5 hurricane would bring a higher storm surge, higher waves, and higher winds than those experienced in Andrew. Station blackout would be more likely.

3. The Turkey Point site, on the shore of Biscayne Bay, has been raised to 18 feet above sea level. A category 5 hurricane is likely to produce an 18 to 20 foot storm surge with storm waves superimposed on top of the surge. I'm concerned that hurricanes or terrorist air crashes could collapse the auxiliary building over the spent fuel pools. The concrete roof collapsing into the spent fuel pool would radically change the spent fuel geometry possibly initiating uncontrollable criticality. An intentional terrorist air crash could possibly destroy the auxiliary building and simultaneously damage the control room if the aircraft made it's approach from the east.

4. An issue the NRC staff and the licensee refuse to acknowledge is the safety of spent fuel after 2009. In that year both units 3 and 4 lose their ability to offload a full core. Public safety has been put into a vacuum for the relicensing process. All negative factors such as aging management, hurricanes, station

blackout, and terrorist acts will be present but no safety studies of spent fuel storage options have been performed.

As an informed citizen, I find the relicensing process seriously deficient. I urge the Advisory Committee on Reactor Safeguards to refuse to meet on this matter until all safety issues have been satisfactorily resolved and an acceptable margin of safety has been provided.

Sincerely,

Mark P. Oncavage

ADVISORY COMMITTEE ON REACTOR SAFEGUARDS  
PLANT LICENSE RENEWAL SUBCOMMITTEE SITE VISIT  
MARCH 13, 2002  
TURKEY POINT UNITS 3 AND 4  
FLORIDA CITY, FLORIDA

**PROPOSED SCHEDULE**

**ACTIVITY**

- 8:00 Leave Hotel and Travel to Site
- 8:20 Arrive at Turkey Point Nuclear Plant - Training Building (NTB) Conference Room 123N
- 8:30 Introductions and Opening remarks:  
Dr. Mario Bonaca, Subcommittee Chairman Site Representative
- 9:00 Plant Tour:
1. On route from the NTB to the NEB observe security systems:  
access monitors, vehicle barriers, fences, motion detectors, lighting, or vital area controls
  2. Enter NEB: obtain Visitor Badges and Escorts
  3. After exiting all security monitors and before exiting NEB, pick up hardhats, safety glasses and earplugs
  4. Proceed into Protected Area and down west roadway.
  5. Field erected tanks (CSTs, RWSTs, or DWST):

**Location**

**Observe**

DWST	Field erected Demineralized Water Storage Tank
Turbine Deck	Transformers and associated Fire Protection features Switchyard and Transmission lines (Davis and Florida City corridors).
Turbine building north end	Fire protection features (wet pipe) south end of 18 ft

6. Systems, Structures, or Components that are required to recover from a station blackout (main control room, switchgear room, transformers, or switch yard):

**Location****Observe**

U3 4KV SWGR

4KV SWGR ( Credited for SBO)

Proceed to U3 EDG Note vital area security controls

7. An area for which a II over I piping analysis was required (Auxiliary Feedwater Pump room, pipe chase, or Emergency Diesel Generator (EDG room):

**Location****Observe**

U3 EDG

2/1 pipe situation on the west wall and fire protection features (pre-action)

Proceed to U4  
EDG Bldg

SBO features (3D and 4D 4KV cross-tie switch gear)

Proceed to Fire Pumps.

8. Fire protection systems (fire pumps, wet pipe and dry pipe systems, detectors, sprinkler heads, or dampers):

**Location****Observe**

Fire Pumps area

Pumps and Fire Protection features

Proceed to NEB

Drop off PPE before exiting turnstiles

Proceed to  
Simulator(NTB)

SBO board features and SBO simulator scenario.

12:00 noon Working Lunch - NTB Rm 123N (Already set up - Price \$10)

12:45 p.m. Leave Site and Travel to Florida City for 1:30 p.m. Public Meeting

O'Claire, Chief, Radiological Branch, Ohio Emergency Management Agency, regarding the environmental impact of the proposed action. The state official had no comments.

#### **Finding of No Significant Impact**

On the basis of the environmental assessment, the NRC concludes that the proposed action will not have a significant effect on the quality of the human environment. Accordingly, the NRC has determined not to prepare an environmental impact statement for the proposed action.

For further details with respect to the proposed action, see the licensee's letter dated December 21, 2000. Documents may be examined, and/or copied for a fee, at the NRC's Public Document Room (PDR), located at One White Flint North, 11555 Rockville Pike (first floor), Rockville, Maryland. Publicly available records will be accessible electronically from the ADAMS Public Library component on the NRC Web site, <http://www.nrc.gov> (the Public Electronic Reading Room). Persons who do not have access to ADAMS or who encounter problems in accessing the documents located in ADAMS, should contact the NRC PDR Reference staff by telephone at 1-800-397-4209, or 301-415-4737, or by e-mail at [pdr@nrc.gov](mailto:pdr@nrc.gov).

Dated at Rockville, Maryland, this 25th day of January 2002.

For the Nuclear Regulatory Commission.

**Anthony J. Mendiola,**

*Chief, Section 2, Project Directorate III,  
Division of Licensing Project Management,  
Office of Nuclear Reactor Regulation.*

[FR Doc. 02-2375 Filed 1-30-02; 8:45 am]

BILLING CODE 7590-01-P

## **NUCLEAR REGULATORY COMMISSION**

### **Advisory Committee on Reactor Safeguards; Meeting of the Subcommittee on Plant License Renewal; Notice of Meeting**

The ACRS Subcommittee on Plant License Renewal will hold a meeting on March 13, 2002, City Hall, 404 West Palm Drive, Florida City, Florida.

The entire meeting will be open to public attendance.

The agenda for the subject meeting shall be as follows: *Wednesday, March 13, 2002—1:30 p.m. until the conclusion of business.*

The Subcommittee will review the NRC staff's final Safety Evaluation Report related to the license renewal of Turkey Point Nuclear Power Plant Units 3 and 4. The purpose of this meeting is to gather information, analyze relevant

issues and facts, and to formulate proposed positions and actions, as appropriate, for deliberation by the full Committee.

Oral statements may be presented by members of the public with the concurrence of the Subcommittee Chairman; written statements will be accepted and made available to the Committee. Electronic recordings will be permitted only during those portions of the meeting that are open to the public, and questions may be asked only by members of the Subcommittee, its consultants, and staff. Persons desiring to make oral statements should notify the Designated Federal Official named below five days prior to the meeting, if possible, so that appropriate arrangements can be made.

During the initial portion of the meeting, the Subcommittee, along with any of its consultants who may be present, may exchange preliminary views regarding matters to be considered during the balance of the meeting.

The Subcommittee will then hear presentations by and hold discussions with representatives of the NRC staff and other interested persons regarding this review.

Further information regarding topics to be discussed, whether the meeting has been canceled or rescheduled, and the Chairman's ruling on requests for the opportunity to present oral statements and the time allotted therefor, can be obtained by contacting the Designated Federal Official, Mr. Noel F. Dudley (telephone 301/415-6888) between 7:30 a.m. and 4:15 p.m. (EST). Persons planning to attend this meeting are urged to contact the above named individual one or two working days prior to the meeting to be advised of any potential changes to the agenda, etc., that may have occurred.

Dated: January 24, 2002.

**Sam Duraiswamy,**

*Acting Associate Director for Technical Support, ACRS/ACNW.*

[FR Doc. 02-2374 Filed 1-30-02; 8:45 am]

BILLING CODE 7590-01-P

## **NUCLEAR REGULATORY COMMISSION**

### **Updated and Consolidated Decommissioning Policy and Guidance of the Nuclear Regulatory Commission's Office of Nuclear Material Safety and Safeguards; Notice of Availability**

**AGENCY:** Nuclear Regulatory Commission.

**ACTION:** Notice of availability and request for public comment.

**SUMMARY:** The Nuclear Regulatory Commission's (NRC) Office of Nuclear Material Safety and Safeguards (NMSS) is announcing the availability of a draft document "Consolidated NMSS Decommissioning Guidance: Decommissioning Process" (NUREG-1757, Vol. 1), for public comment. This document provides guidance for the planning and implementation of the termination of licenses issued through NMSS's licensing programs. The guidance is intended for NRC staff, licensees, and the public and is being developed in response to the NMSS performance goals, in the NRC's Strategic Plan, of: Making NRC activities and decisions more effective, efficient, and realistic; and reducing unnecessary regulatory burden on stakeholders. NRC is seeking public comment in order to receive feedback from the widest range of interested parties and to ensure that all information relevant to developing the document is available to the NRC staff. This draft document is being issued for comment only and is not intended for interim use. The NRC will review public comments received on the draft document. Suggested changes will be incorporated, where appropriate, in response to those comments, and a final document will be issued for use.

**DATES:** Comments on this draft document should be submitted by May 1, 2002. Comments received after that date will be considered to the extent practicable.

**ADDRESSES:** NUREG-1757 is available for inspection and copying for a fee at the Commission's Public Document Room, U.S. NRC's Headquarters Building, 11555 Rockville Pike (First Floor), Rockville, Maryland, and electronically from the ADAMS Electronic Reading Room on the NRC Web site at, <http://www.nrc.gov/reading-rm/adams.html>. NUREG-1757 is also available on the NRC web site at: <http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff> or <http://www.nrc.gov/materials/decommissioning/regs-guides-comm.html>.

A free single copy of NUREG-1757 will be available to interested parties until the supply is exhausted. Such copies may be requested by writing to the U.S. Nuclear Regulatory Commission, Distribution Services, Washington, DC 20555-0001 or submitting e-mail to [distribution@nrc.gov](mailto:distribution@nrc.gov).



# **LICENSE RENEWAL**

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## **TURKEY POINT PLANT**

### **ACRS SUBCOMMITTEE**

### **SITE TOUR**

**March 13, 2002**



# NRC Scoping/Screening Audit

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- Onsite from November 13 through 16, 2000
- Team of three auditors plus the NRC license renewal project manager and Region II inspection team leader
- Scope of the audit included:
  - Scoping and screening methodology
  - Implementing procedures
  - System/Structure scoping document
  - Sampling of mechanical screening documents
  - Structural screening documents
  - Electrical/I&C screening document



# NRC Scoping/Screening Audit

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- Two RAIs issued as a result of the audit
  - One RAI was on use of revised source term to reflect latest language in 10 CFR 54.4
    - » Revised source term not applicable to Turkey Point
  - Second RAI questioned scoping of non-safety related pipe segments with regard to non-safety/safety related interactions
    - » This item resolved via response to Open Item 2.1.2-1





# Scoping/Screening Regional Inspection

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- Onsite from May 21 through May 25, 2001
- Team of four inspectors plus team leader and license renewal project manager
- Comprehensive review of procedures and scoping and screening documents
  - 22 out of 27 in-scope mechanical systems
  - 19 out of 20 in-scope structures
  - 15 out of 16 in-scope electrical and I&C systems
  - A sampling of out of scope systems and structures
  - Plant Drawings
  - Plant walkdowns

# **Scoping/Screening Regional Inspection**

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- Questions raised were promptly resolved during the inspection if possible
- Any remaining questions were subsequently resolved during the aging management review inspection
- Inspection Report issued July 23, 2001

# **Aging Management Review Regional Inspection**

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- Onsite from August 20 through August 24, 2001 and September 10 through September 14, 2001
- Team of four inspectors plus team leader and license renewal project manager
- On October 9 through 10, 2001, one inspector performed a walkdown of the Unit 3 Containment Building during a refueling outage



# **Aging Management Review Regional Inspection**

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- In-depth review of system and structure aging management reviews
  - 21 out of 27 in-scope mechanical systems reviewed
  - 19 out of 20 in-scope structures reviewed
  - 15 out of 16 in-scope electrical and I&C systems reviewed
- Detailed review of all aging management programs
  - Implementing procedures
  - Previous inspection documentation and results
  - System engineer and subject matter expert interviews
  - Commitment identification and tracking
- Plant walkdowns and material condition assessments



# **Aging Management Review Regional Inspection**

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- Inspection Report issued October 29, 2001
- All questions resolved during the inspection



# NRC Regional Inspections

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- February 1, 2002 letter from NRC Region II:
  - No further inspection is needed
  - FPL demonstrated the capability to manage the effects of aging during the period of extended operation
  - Reasonable assurance that FPL's aging management programs provide an adequate foundation for renewing the licenses for Turkey Point Units 3 and 4

# Open Item Resolution

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- Open Item 2.1.2-1, Scoping of Seismic II over I Piping Systems
  - Items FPL included in LRA to address non-safety related/safety related interactions:
    - Non-safety related pipe segments and supports at safety-related/non-safety related functional boundaries
    - Piping/component supports for non-safety related mechanical systems with the potential of Seismic II over I interaction
    - Non-safety related conduit, cable trays, supports, and other structural components with the potential of Seismic II over I interaction
    - Design features required to accommodate the effects of flooding
    - Design features required to accommodate the effects of spray, jet impingement, and pipe whip



# Open Item Resolution

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- Open Item 2.1.2-1, Scoping of Seismic II over I Piping Systems (cont.)
  - NRC issue was that the effects of pipe whip, jet impingement, physical contact, and leakage due to non-safety related pipe failures (beyond current assigned break locations) need to be considered based on industry operating experience
    - May require additional non-safety related pipe segments to be included in scope of license renewal



# Open Item Resolution

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- Open Item 2.1.2-1, Scoping of Seismic II over I Piping Systems (cont.)
  - FPL performed an evaluation assuming credible (based on operating experience) non-safety related piping failures beyond the CLB
  - If there was interaction with safety related components as a result of the assumed failures, the non-safety related pipe segments were included in the scope of license renewal

# Open Item Resolution

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- Open Item 2.1.2-1, Scoping of Seismic II over I Piping Systems (cont.)
  - A limited number of pipe segments in five structures were added to the scope of license renewal
  - Aging effects requiring management were identified
  - Pipe segments requiring aging management were included in Chemistry Control Program, Systems and Structures Monitoring Program, and Flow Accelerated Corrosion Program, as applicable



# Open Item Resolution

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- Open Item 3.9.12-1, Commitment to NEI and EPRI Materials Reliability Program (MRP) for Managing PWSCC of Alloy 600 Reactor Vessel Head Penetrations
  - NEI and EPRI MRP are an integral part of the Turkey Point Reactor Vessel Head Alloy 600 Penetration Inspection Program
  - Included latest information, relative rankings for Turkey Point, and specific commitments to NEI and EPRI MRP



# Open Item Resolution

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- Open Item 4.3-1, Completion of NRC Review of Westinghouse Generic Topical (WCAP-15338) on Reactor Vessel Underclad Cracking
  - NRC SER issued October 15, 2001 with 2 applicant action items
    - Statement that design cycles and transients assumed in the WCAP are bounding
    - TLAA shall be summarily described in the FSAR Supplement
  - FPL addressed the first item in an earlier RAI response, and the second item was already included in the FSAR supplement

# Open Item Resolution

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- Open Item 3.8.4-1, Field Erected Tanks Internal Inspection
  - NRC identified three items to be addressed
    - Specific acceptance criteria for the inspection
    - Provisions for additional examinations if the inspection reveals extensive loss of material
    - Justification for one-time inspection
  - Acceptance criteria and additional examinations
    - For acceptance criteria, any loss of material greater than the tank's corrosion allowance will require corrective action
    - Corrective actions will consider the use of additional volumetric or surface inspections, and followup inspections, if needed



# Open Item Resolution

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- Open Item 3.8.4-1, Field Erected Tanks Internal Inspection (cont.)
  - One-time inspection is justified
    - No significant aging is expected
    - Plant operating experience revealed no incidences of internal degradation for CSTs, RWSTs, or DWST, other than inspections, repairs, and recoating activities for the CSTs attributed to operational practices and inadequate original coatings
    - The DWST was recently inspected as part of an internal tank modification, and the inspection did not identify any degraded coatings or tank corrosion
    - The RWSTs, CSTs, and DWST are externally inspected periodically as part of the Systems and Structures Monitoring Program

**FPL**

The diagram illustrates the 4160V bus system for Units 3 and 4. Key components include:

- Unit 4 Transformers and Generator:** UNIT 4 MAIN TRANSFORMER, UNIT 4 4C TRANSFORMER, UNIT 4 AUXILIARY TRANSFORMER, UNIT 4 MAIN GEN., and UNIT 4 START-UP TRANSFORMER.
- Unit 3 Transformers and Generator:** UNIT 3 MAIN TRANSFORMER, UNIT 3 3C TRANSFORMER, UNIT 3 AUXILIARY TRANSFORMER, UNIT 3 MAIN GEN., and UNIT 3 START-UP TRANSFORMER.
- 4160V Buses:** 4B 4160V BUS, 4A 4160V BUS, 3A 4160V BUS, 3B 4160V BUS, 4D 4160V BUS, 3D 4160V BUS, 4C 4160V BUS, and 3C 4160V BUS.
- Emergency Diesel Generators (EDG):** EDG 4B, EDG 4A, EDG 3A, and EDG 3B.
- Station Blackout Cross Tie:** A line connecting the 4D 4160V BUS and the 3D 4160V BUS.
- External Connections:** TO 3C 4160V BUS and TO 4C 4160V BUS.

# Turkey Point SBO Design

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- For dual unit sites with four Emergency Diesel Generators (EDGs), an EDG may serve as an Alternate AC (AAC) power source if it meets applicable requirements
- Each EDG at Turkey Point was determined to be a fully capable AAC power source
  - SBO loads on affected unit, plus
  - Loss of offsite power loads on non-affected unit without load shedding





# Turkey Point SBO Design

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- AAC power source can be aligned within ten minutes from the Control Room
  - No coping analysis required
  - Utilize 3D and 4D 4kv bus ties
- SBO functions within the scope of license renewal
  - Power supply from AAC source
  - Decay heat removal
  - Reactor coolant inventory
  - Battery charging
  - Compressed air for operation of air operated valves
  - Ventilation for equipment cooling
  - Containment isolation



# Turkey Point SBO Design

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- CLB does not rely on restoration of offsite power to recover from an SBO
- The EDGs demonstrated continuous reliable performance for 7 days following Hurricane Andrew
  - FPL chose to provide power via the EDGs even after offsite power was available because of concerns over reliability of the offsite power source

**ACRS SUBCOMMITTEE MEETING  
IN REVIEW OF THE FINAL SAFETY ANALYSIS REPORT  
FOR LICENSE RENEWAL OF THE  
TURKEY POINT NUCLEAR PLANT, UNITS 3 AND 4**

**MARCH 13, 2002**

**RAJ AULUCK  
PROJECT MANAGER  
NRR**

## COMMENTS FROM A PUBLIC CITIZEN

- Effects of voids on aging degradation rates and the structural integrity of concrete containment structures
- Effect of design basis hurricane wind speeds and storm waves on safe operation of Turkey Point Nuclear Plant
- Effect of terrorist air attacks on the safety and operability of the Turkey Point nuclear units
- Turkey Point spent fuel capacity

## OVERVIEW

### Background Information

- Application Submitted by Letter Dated September 8, 2000
- First Westinghouse Pressurized Water Reactor
- 3-Loop Westinghouse PWR, 2 Unit Site, Each Designed for 2300 MWT
- Plant Located in Dade County, Florida City, Florida, Approximately 25 Miles South of Miami
- Unit 3: License Expires July 19, 2012. Requests Renewal Through July 19, 2032.
- Unit 4: License Expires April 10, 2013. Requests Renewal Through April 10, 2033.

## OVERVIEW (CONT.)

### Turkey Point License Renewal Application Review Schedule

MILESTONE	TARGET DATE	ACTUAL DATE
Receive License Renewal Application	09/11/00	09/11/00
Notice Application Tendered	09/26/00	09/26/00
Complete Acceptance Review of Application	10/10/00	10/04/00
Publish Acceptance Review & Docket Application/Notice of Opportunity for Hearing	10/17/00	10/12/00
Notice of Intent/Notice of Environmental Scoping Meeting	10/20/00	10/24/00
Deadline for Filing Hearing Requests and Petitions for Intervention	11/17/00	11/13/00
Environmental Scoping Meeting	12/06/00	12/06/00
EIS Scoping Period Ends	12/22/00	12/22/00
Staff Complete Environmental RAIs	01/31/01	01/31/01
Staff Complete Safety RAIs	02/05/01	02/02/01
Applicant Responds to Environmental RAIs	03/30/01	03/30/01
Applicant Responds to Safety RAIs	04/23/01	04/19/01
Complete Scoping Inspection	06/22/01	05/25/01
Staff Issue Draft EIS for Comment	07/17/01	06/12/01
Staff Issue SER & Identify Open Items	08/17/01	08/17/01
Public Meeting to Discuss DEIS	07/17/01	07/17/01
ACRS Subcommittee Meeting	09/25/01	09/25/01
ACRS Full Committee Meeting	10/4-5/01	10/05/01
Complete Aging Management Review Inspection	09/14/01	09/14/01
End of DEIS Comment Period	09/06/01	09/06/01
Applicant Completes Responses to SER Open Items	11/16/01	11/07/01
Staff Issue Final EIS	01/29/02	01/11/02
Complete Optional Final Inspection	01/15/02	01/15/02
Staff Issue SSER	02/28/02	02/27/02
ACRS Subcommittee Meeting	03/13/02	
Regional Administrator's Letter	03/08/02	02/01/02
ACRS Full Committee Meeting	04/12/02	
ACRS Letter	04/19/02	
Issue SER as NUREG	04/30/02	
Commission Paper W/Staff Recommendations	05/17/02	
Commission Decision	07/17/02	

## OVERVIEW (CONT.)

- The applicant has met the requirements for license renewal, as required by 10 CFR 54.29
  - Actions have been identified and have been or will be taken such that there is reasonable assurance that activities will continue to be conducted during the Turkey Point renewal terms in accordance with the current licensing bases for the units.
  - The applicable requirements of 10 CFR Part 51 have been satisfied.
  - Matters raised under 10 CFR 2.758 have been addressed.

## OVERVIEW (CONT.)

### Westinghouse Electric License Renewal Reports

- Four Westinghouse Generic Reports (WCAPs) submitted for NRC Staff Review:
  - WCAP-14574, "License Renewal Evaluation: Aging Management Evaluation for Pressurizers." Final NRC safety evaluation issued on Oct. 26, 2000.
  - WCAP-14575, "License Renewal Evaluation: Aging Management Evaluation of Class 1 Piping and Associated Pressure Boundary Components." Final NRC safety evaluation issued on Nov. 8, 2000.
  - WCAP-14577, "License Renewal Evaluation: Aging Management Evaluation Reactor Internals." Final NRC safety evaluation issued on Feb. 10, 2001.
  - WCAP-14422, "License Renewal Evaluation: Aging Management for Reactor Coolant System Supports." Final NRC safety evaluation issued on Nov. 17, 2000.
- Application addressed applicability of WCAPs to Turkey Point.



## LIST OF OPEN ITEMS

- Scoping for Seismic II over I (II/I) piping systems
- Acceptance criteria for Field Erected Tanks Internal Inspection Aging Management Program
- Scope of Reactor Vessel Head Alloy 600 Penetration Inspection Program
- Reactor Pressure Vessel Underclad Cracking

## OPEN ITEMS

### Scoping of Seismic II/I Piping Systems

- Structures, systems, and components (SSC) identified as Seismic II/I should be included in the scope of license renewal and subject to AMRs, as consistent with the scoping requirements of 10 CFR 54.4(a)(2).
- Staff's position has always been that Seismic II/I piping systems whose failure could prevent safety-related systems and structures from accomplishing their intended functions should be within the scope of license renewal.
- In response to the staff's position on Seismic II/I, the applicant included additional components as being within the scope of license renewal and identified appropriate aging AMPs to manage the aging effects that correspond to these components.

## OPEN ITEMS

### Acceptance Criteria for Field Erected Tanks Internal Inspection

- The applicant uses the Field Erected Tanks Internal Inspection Program to manage aging effects associated with field erected tanks in the auxiliary feedwater and condensate storage system, feedwater and blowdown system, and safety injection system.
- This program is a new aging management program - acceptance criteria and other program attributes were not developed at the time of the draft SER.
- In response, the applicant provided the information related to the acceptance criteria, provisions for additional examinations, and justification for one-time inspections to resolve the issue

## OPEN ITEMS

### Reactor Vessel Head Alloy 600 Penetration Inspection Program (RVHPIP)

- LRA submitted prior to issuance of NRC Bulletin 2001-01, "Circumferential Cracking of Reactor Pressure Vessel Head Penetration Nozzles."
- Open Item to address whether the RVHPIP was current with Bulletin 2001-01 and the latest industry programs for monitoring for PWSCC in U.S. VHP nozzles.
- Applicant's response to Open Item:
  - referred to FPL response to Bulletin 2001-01 as current status of the program
  - Bulletin response indicates continued participation in the industry-wide program
  - Bulletin response provides the revised susceptibility rankings
  - Bulletin response proposes timely VT-2 examinations of bare metal surfaces
- Information in the applicant's responses to the Open Item and to Bulletin 2001-01 provide a sufficient basis that PWSCC will be managed effectively in the Turkey Point VHP nozzles during the extended periods of operation. Staff considers Open Item 3.9.12-1 to be resolved.

## OVERVIEW - OPEN ITEMS

### Reactor Pressure Vessel (RPV) Underclad Cracking

- WCAP-15338 provides Westinghouse Electric's generic evaluation for growth of potential RPV underclad cracks by thermal fatigue. FPL's evaluation of this type of aging effect is addressed appropriately as a time-limited aging analysis (TLAA) covered under the scope Section 4.3 of the application.
- NRC safety evaluation on WCAP-15338 indicated applicant's for renewal of Westinghouse 3-loop plants would need to address two Renewal Application Items:
  - applicant would need to indicate whether the number of design cycles and transients assumed in WCAP-15338 bounds the number of cycles for 60 years of operation of the applicant's RPVs under review. (RAI 4.3.2-1)
  - applicants referencing the report would need to ensure that the evaluation of the TLAA is summarily described in the FSAR supplement. (Open Item 4.3-1)
- Conformance with the first item resolved in response to RAI 4.3.2-1 (4/19/01)
- Conformance with the second item resolved in FPL response to Open Item 4.3-1 dated November 1, 2001.

## COMMENTS FROM A PUBLIC CITIZEN

### Discussion of Concerns

- Effects of voids on aging degradation rates and the structural integrity of concrete containment structures
- Effect of design basis hurricane wind speeds and storm waves on safe operation of Turkey Point Nuclear Plant
- Effect of terrorist air attacks on the safety and operability of the Turkey Point nuclear units
- Turkey Point spent fuel capacity

## INSPECTION ACTIVITIES

- Scoping and Screening Methodology Inspection
- Aging Management Program Inspection
- Open Item Resolution Inspection (optional)

## CONCLUSIONS

- The staff has completed its review of the Turkey Point License Renewal Application.
- All Open Items have been resolved
- The applicant has met the requirements for license renewal, as required by 10 CFR 54.29.