UNITED STATES
NUCLEAR REGULATORY COMMISSION
ADVISORY COMMITTEE ON REACTOR SAFEGUARDS
WASHINGTON, DC 20555 - 0001

July 7, 2005

MEMORANDUM TO: ACRS Members

FROM: Cayetano Santos Jr., Senior Staff Engineer /RA/
ACRS/ACNW

SUBJECT: CERTIFICATION OF THE MINUTES OF THE PLANT LICENSE RENEWAL SUBCOMMITTEE MEETING ON THE POINT BEACH NUCLEAR PLANT UNITS 1 AND 2 LICENSE RENEWAL APPLICATION, MAY 31, 2005 - ROCKVILLE, MARYLAND

The minutes of the subject meeting were certified on July 6, 2005, as the official record of the proceedings of that meeting. A copy of the certified minutes is attached.

Attachment: As stated

cc w/o Attachment:
J. Larkins
A. Thadani
M. Scott
M. Snodderly
S. Duraiswamy
J. Lamb

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WASHINGTON, DC 20555 - 0001

MEMORANDUM TO: Cayetano Santos Jr., Senior Staff Engineer
Technical Support Staff, ACRS

FROM: Mario Bonaca, Chairman
ACRS Plant License Renewal Subcommittee

SUBJECT: CERTIFICATION OF THE MINUTES OF THE ACRS SUBCOMMITTEE MEETING ON THE POINT BEACH NUCLEAR PLANT UNITS 1 AND 2 LICENSE RENEWAL APPLICATION, MAY 31, 2005 - ROCKVILLE, MARYLAND

I hereby certify, to the best of my knowledge and belief, that the minutes of the subject meeting on May 31, 2005, are an accurate record of the proceedings for that meeting.

/RA/ 7/6/05
Mario Bonaca, Date
Plant License Renewal Subcommittee Chairman

CERTIFIED on 7/6/05 by Mario Bonaca
Issued 6/17/05

ADVISORY COMMITTEE ON REACTOR SAFEGUARDS
MINUTES OF THE ACRS PLANT LICENSE RENEWAL SUBCOMMITTEE MEETING
ON THE POINT BEACH NUCLEAR PLANT, UNITS 1 AND 2
May 31, 2005
ROCKVILLE, MARYLAND

On May 31, 2005, the Plant License Renewal Subcommittee held a meeting in Room T-2B3, 11545 Rockville Pike, Rockville, Maryland. The purpose of the meeting was to review and discuss the Point Beach Nuclear Plant, Units 1 and 2 license renewal application and the associated Safety Evaluation Report (SER) with Open Items.

The meeting was open to the public. No written comments or requests to make oral statements were received from members of the public related to this meeting. Mr. Santos was the Designated Federal Official for this meeting. The meeting convened at 12:30 p.m. and adjourned at 5:16 p.m. on May 31, 2005.

ATTENDEES:

ACRS MEMBERS/STAFF

Mario Bonaca, Chairman	Graham Wallis, Member
Stephen Rosen, Member	Graham Leitch, Consultant
John Sieber, Member	Cayetano Santos Jr., ACRS Staff
William Shack, Member	John G. Lamb, ACRS Staff

NRC STAFF/PRESENTERS

F. Gillespie, NRR	P. Louden, RIII
V. Rodriguez, NRR	K. Cozens, NRR
G. Suber, NRR	M. Morgan, NRR
P. Longheed, RIII	N. Ray, NRR
K. Chang, NRR	M. Mitchell, NRR
S. Lee, NRR	T. Steingass, NRR
M. Hartzman, NRR	J. Ma, NRR
R. McIntyre, NRR	G. Cranston, NRR
R. Subbaratnam, NRR	B. Pascarelli, NRR
D. Reddy, NRR	S. Gosselin, NRR
M. Lintz, NRR	R. Aulude, NRR
N. Dudley, NRR	T. Le, NRR
C. Lauron, NRR	Y. Li, NRR
P. Kan, RES	A. Hull, NRR
B. Elliott, NRR	C. Li, NRR
L. Lund, NRR	H. Asher, NRR
J. Medoff, NRR	K. Alm-Lytz, NRR
L. Miller, NRR	S. Ray, NRR
B. Poole, OGC	A. Hodgdan, OGC
H. Chernoff, NRR	J. Hernandez, NRR
T. Koshy, NRR	P. Gill, NRR
Y. Diaz, NRR	N. Patel, NRR
J. Zimmerman, NRR	S. Imboden, NRR
B. Rodgers, NRR	R. McNally, NRR
D. Meazke, NRR	J. Raval, NRR
G. Galletti, NRR	J. Ayala, NRR

OTHER ATTENDEES

J. Knorr, NMC
J. Thorgersen, NMC
M. Ortmayer, NMC
B. Fromm, NMC
J. Schweitzer, NMC
D. Cooper, NMC
R. Graves, Legin Group, Inc.
S. Dort, First Energy
K. Brune, TVA
D. Ava, TVA
R. Jennings, TVA
D. Horner, McGraw-Hill
D. Johnson, NMC
T. Mielke, NMC
S. Schellin, NMC
W. Herrman, NMC
D. Turner, NMC
B. Vincent, NMC
M. Fallin, Constellation Energy
J. Thomas, First Energy
W. Crouch, TVA
R. Jansen, TVA
R. Grumbir, AEP

The presentation slides, handouts used during the meeting, and a complete list of attendees are attached to the office copy of the meeting minutes. The presentations to the Subcommittee are summarized below.

Opening Remarks

Dr. Bonaca, Chairman of the Subcommittee on Plant License Renewal, convened the meeting and made a few introductory remarks. The purpose of this meeting was to review the Nuclear Management Company, LLC (NMC) license renewal application (LRA) for the Point Beach Nuclear Plant (PBNP), Units 1 and 2 and the associated Safety Evaluation Report (SER) with Open Items. The first part of the meeting reviewed the recent red findings at the PBNP. Chairman Bonaca explained that the Subcommittee understands that these findings will be addressed as current operation issues but is concerned that problems in human performance and the Corrective Action Program (CAP) may affect license renewal. Chairman Bonaca called upon Mr. Gillespie of the Office of Nuclear Reactor Regulation (NRR) to begin the discussion.

Mr. Gillespie agreed that the CAP is key to license renewal and stated that the staff constantly struggles with the separation of current performance and license renewal issues. Mr. Gillespie explained that NRR reviews the structure of the programs associated with license renewal, and the Region inspects the implementation of these programs. The staff has received a petition for rulemaking to incorporate current operation in the license renewal rule. Finally, Mr. Gillespie noted that the PBNP is the first plant that is expected to exceed the pressurized thermal shock (PTS) screening criterion during the period of extended operation.

Point Beach Red Findings

Mr. Louden, Region III, described the actions taken by the Region in response to the red inspection findings at the PBNP.

During an upgrade of its probabilistic risk assessment (PRA) in November 2001, the applicant identified a finding associated with the Auxiliary Feedwater (AFW) system. As a result, the NRC performed two Special Inspections. The Special Inspection in 2003 identified a second finding in the AFW system. The first red finding was issued in April 2003 and a second red finding was issued in December 2003. The PBNP was placed in Column IV (Multiple/Repetitive Degraded Cornerstone) of the NRC Action Matrix of the Reactor Oversight Process (ROP).

Mr. Louden stated that a Supplemental Inspection was performed in 2003 per NRC Inspection Procedure 95003. This inspection was diagnostic in nature and focused on known problem areas. It identified additional findings and violations in five areas: (1) human performance, (2) engineering design control, (3) the engineering/operations interface, (4) emergency preparedness, and (5) the CAP. Mr. Louden stated that these five areas of concern formed the basis for the NRC Confirmatory Action Letter (CAL) issued to the PBNP on April 21, 2004. Attached to the CAL was a commitment letter from NMC. The commitment letter was based on

the PBNP Site Excellence Plan. Special inspections were conducted by the Region to evaluate the applicant's progress in implementing these commitments.

Mr. Louden described the current performance of the PBNP. As stated in the CAL, substantive cross-cutting issues were identified in the areas of human performance and the CAP. Mr. Louden explained that the CAP is sound, but improvement is still needed in its implementation. The applicant has focused on improving human performance and the staff has noted recent improvement in this area. Mr. Louden concluded by stating that progress has been made in all five areas identified in the CAL, and the Region is focusing on the sustainability of these corrective actions.

Point Beach License Renewal Application

Mr. Johnson, NMC Director for License Renewal Projects, greeted the Subcommittee and introduced accompanying members of the NMC staff including Mr. Knorr (Point Beach License Renewal Project Manager) and Mr. Schweitzer (Point Beach Director of Engineering). Mr. Knorr, NMC, described the operating experience, plant improvements, aging management programs (AMPs), and the commitment tracking process at the PBNP.

Background
In a letter dated February 25, 2004, NMC submitted an application for renewal of the PBNP operating licenses for up to an additional 20 years. The current operating licenses for Units 1 and 2 expire on October 5, 2010, and March 8, 2013, respectively.

The LRA used the standard format and made extensive use of past precedence. The staff reviewed the LRA using the new on-site audits to evaluate consistency with the Generic Aging Lessons Learned (GALL) Report.

Plant Description
The PBNP is owned by the Wisconsin Electric Power Company and operated by NMC. The plant is located in Two Creeks, Wisconsin.

The PBNP consists of two 2-loop Westinghouse pressurized water reactor units housed in post tensioned steel-reinforced concrete containments. Each unit has a rated thermal power of 1540 MWt and an electrical output of 538 MWe. The PBNP has four emergency diesel generators (EDGs) and one 25 MWe combustion turbine. Lake Michigan is the ultimate heat sink. The plant operates on 18 month fuel cycles.

Recent Operating Experience and Plant Improvements
In 1975, Unit 1 experienced a steam generator tube rupture caused by intergranular stress corrosion cracking (IGSCC). In 1999, Unit 1 experienced a feedwater heater shell failure caused by steam impingement and flow-accelerated corrosion (FAC).

The NRC Performance Assessment for the PBNP shows green performance indicators and red inspection findings. Unit 1 experienced its last automatic reactor trip on July 15, 2003, and has a rolling 18-month capability factor of 87.25%. Unit 2 experienced its last automatic reactor trip on July 10, 2003, and has a rolling 18-month capability factor of 89.19%.

The major improvements at the PBNP include the following: (1) replacement of steam generators for both units, (2) replacement of split pins in both units, (3) installation of two additional EDGs, (4) replacement of baffle bolts in Unit 2, (5) upgrade of portions of the Service Water System, (6) replacement of the plant process computer, and (7) redesign of the intake structure. The reactor vessel heads for both units will be replaced in 2005. The auxiliary feedwater pumps are scheduled for replacement between 2006 and 2007.

Aging Management Programs
There are 26 AMPs used to manage degradation at the PBNP. All 26 of these AMPs are common to both units. Of the 26 AMPs, 21 are existing programs, and five are new programs.

Mr. Knorr described some of the exceptions taken to the GALL Report. In the Reactor Vessel Surveillance Program an additional surveillance capsule was added for extended life. The Reactor Vessel Internals Program will be submitted for NRC review and approval at least 24 months prior to entering the period of extended operation. In the Cable Condition Monitoring Program all inaccessible medium voltage cables have already been tested.

Mr. Knorr stated that the current number of Effective Full Power Years (EFPY) for Units 1 and 2 are 25.7 and 26.2, respectively. At 60 years Unit 1 is projected to have 51 EFPY and Unit 2 is projected to have 53 EFPY. These projections assume a capacity factor of 95% and a power uprate to 1678 MWt.

The reactor vessel embrittlement time-limited aging analyses (TLAAs) were calculated using 53 EFPY. For both units the upper shelf energy (USE) of the limiting material will be below the minimum acceptance criterion of 50 ft-lb. Therefore, equivalent margins analyses were performed to satisfy the requirements in 10 CFR 50 Appendix G. The reference temperature, RT_{PTS}, for the limiting beltline material in Unit 2 is projected to 316 EF at 53 EFPY. This will reach the PTS screening criterion of 300 EF at approximately 38.1 EFPY in 2017. To address this issue, the applicant has committed to implementing flux reduction programs.

Commitment Tracking
Mr. Knorr explained the commitment management process at the PBNP. All of the license renewal commitments have been entered into the plant's commitment management system. Team-Track is the system used to track the implementation of all of these commitments. Incorporated into the Team-Track system is an integrated work control process called CHAMPS (Computerized History and Maintenance Planning System). Mr. Knorr concluded by stating the CAP is integral to tracking these commitments.

Safety Evaluation Report Overview

Ms. Rodriguez, NRR, introduced several members of the staff including Mr. Suber (Project Manager), Ms. Lougheed (Inspection Team Leader), and Mr. Cozens (Audit Team Leader). Ms. Rodriguez led the staff's presentation of the SER with Open Items, the scoping and screening review, the AMP reviews and audits, and the TLAAs.

The SER with Open Items was issued on May 2, 2005, and contained five open items, fifteen confirmatory items, and three proposed license conditions. Ms. Rodriguez listed the dates of the audits and inspections performed by the staff.

Scoping and Screening
Ms. Rodriguez stated that the staff's review of the scoping and screening methodology resulted in three confirmatory items in the SER: (1) the use of exposure duration in scoping, (2) the definition of first equivalent anchor, and (3) the effect of FAC on the scoping of piping. In a letter dated April 29, 2005, the applicant revised its scoping methodology to remove the term, exposure duration, and to use a "spaces" approach. This new methodology resulted in the addition of 14 component types to the scope of license renewal. No new aging mechanisms were identified.

Ms. Rodriguez stated that the staff's review of Section 2.2 (Plant-Level Scoping and Screening), Section 2.3 (Scoping and Screening of Mechanical Systems), and Section 2.5 (Scoping and Screening of Electrical and Instrumentation and Controls) found no omissions and had no open or confirmatory items. There is one confirmatory item in Section 2.4 (Scoping and Screening of Containments, Structures, and Supports) to identify specific concrete tank foundations.

Aging Management Program Review and Audits

Mr. Cozens, NRR, stated that of the 26 AMPs at the PBNP, 21 are existing programs and five are new programs. Twenty-two of these AMPs are consistent with the GALL Report with exceptions and/or enhancements, and four are plant-specific. There are two open items and two confirmatory items associated with AMPs.

Mr. Cozens discussed the two types of enhancements to the AMPs. The first type of enhancement describes actions needed to demonstrate consistency with the GALL Report. These enhancements were reviewed by the audit team. The second type of enhancement describes actions needed to implement commitments. These were administrative enhancements and were not reviewed by the audit team.

Mr. Cozens described some of the AMPs reviewed during the audit such as the ASME Code Programs, the Buried Service Monitoring Program, the Cable Condition Monitoring Program, the FAC Program, the One-Time Inspection Program, and the Bolting Integrity Program.

There are three AMPs at the PBNP based on ASME Code inspections. These are existing programs with exceptions and enhancements. One open item deals with the use of relief requests as the bases for exceptions to the GALL Report. There is also a confirmatory item concerning with the use of a flaw tolerance evaluation to manage thermal embrittlement of cast austenitic stainless steel.

The Buried Service Monitoring Program is an existing program consistent with the GALL Report. Since some fire protection piping may not have been coated or wrapped, a susceptible section of this piping will be excavated and inspected prior to entering the period of extended operation. This will be a one-time (planned or opportunistic) inspection. The applicant has also committed to performing an inspection of buried components every ten years.

The Cable Condition Monitoring Program is a new program consistent with the GALL Report with exceptions. Testing of radiation monitoring and nuclear instrumentation circuits is not required because they are environmentally qualified or are in non-adverse environments. Nuclear instrumentation circuits that are not subject to technical specification surveillance will be periodically tested. Finally, a sample of the most susceptible inaccessible medium-voltage cables will be tested every ten years.

The FAC Program is an existing program consistent with the GALL Report. There is one confirmatory item in this program. The staff requested the applicant provide justification and confirmation that the minimum required wall thickness will be maintained during the period of extended operation.

The One-Time Inspection Program is a new program consistent with the GALL Report. This program takes an exception to the GALL Report in that small bore piping is not within its scope because these components are volumetrically inspected according to risk-informed inservice inspection criteria. The aging management of stress corrosion cracking in stainless steel heat exchangers and the loss of material in steam generators credits the Water Chemistry Control Program without any verification from the One-Time Inspection Program. The staff has identified these two aging management reviews (AMRs) as open items.

The Bolting Integrity Program is an existing program consistent with the GALL Report. There is an open item in this AMP because the applicant did not identify specific exceptions to the recommendations in the appropriate NUREG and EPRI documents.

Ms. Rodriguez described some of the staff's findings from their evaluation of the AMRs.

The staff's evaluation of Section 3.1 (Reactor Vessel, Internals, and the Reactor Coolant System) resulted in one open item. The Water Chemistry Control Program was credited for

managing loss of material in steam generators but there was no program to validate its effectiveness. The applicant committed to submitting a Reactor Vessel Internals Program for NRC approval 24 months prior to entering he period of extended operation.

The staff's evaluation of Section 3.2 (Auxiliary Systems) had one open item regarding cracking in the Component Cooling Water System. The Water Chemistry Control Program was the only AMP credited with no validation of its effectiveness.

The staff's evaluation of Section 3.5 (Containments, Structures, and Component Supports) resulted in one open item regarding the loss of material in the containment liner plate. The staff requested the applicant provide repair guidelines and acceptance criteria for identifying corrective actions when loss of material is observed.

Ms. Rodriguez stated that there were no open or confirmatory items in Section 3.2 (Engineered Safety Features), Section 3.4 (Steam and Power Conversion Systems), or Section 3.6 (Electrical Components).

Onsite Inspection Results

Ms. Lougheed, Region III, described the license renewal inspections performed by the staff. These inspections follow Inspection Procedure 71002. For the PBNP, the scoping, screening, and aging management review inspections were combined. The inspection team consisted of a team leader and four members in various technical disciplines.

The objective of the scoping and screening inspection is to confirm that the applicant has included all the structures, systems, and components (SSCs) within the scope of license renewal as required by the rule. This portion of the inspection emphasized physical walkdowns of the plant and concentrated on non-safety related systems whose failure could impact safety related systems. Inspectors found that the majority of systems were appropriately scoped, but the applicant's program for mechanical systems was not completely defined at the time of the inspection. Therefore, additional information should be submitted to NRR.

The objective of the AMP inspection is to confirm that existing AMPs are managing current age-related degradation. Ms. Longheed stated that 16 AMPs and two TLAA programs were reviewed. The inspection concluded that the majority of the programs are adequate for the period of extended operation, but the One-Time Inspection Program was not yet sufficiently developed to allow a review.

Ms. Lougheed concluded by stating that overall, the scoping, screening, and AMPs are adequate for extended operation. However, additional inspections may be required regarding the scoping and screening of mechanical systems whose failure could affect safety-related systems, and the sample sizes and locations of the One-Time Inspection Program.

Time Limited Aging Analyses

Mr. Suber presented an overview of the staff's evaluation of the TLAAs.

Embrittlement of the reactor vessel affects TLAAs associated with USE, PTS, and pressure-temperature limits. These analyses were performed using 53 EFPY.

Calculations by the staff and applicant demonstrate that the RT_{PTS} value for the limiting material in Unit 1 meets the PTS screening criterion of 300 EF. These calculations also show that the RT_{PTS} value for the limiting material in Unit 2 is 315 - 316 EF. Unit 2 will reach the PTS screening criterion in 2017. Mr. Suber stated that the applicant has made several commitments to reduce the flux in the vessels. Both units will use a low-low leakage fuel loading management pattern, and Unit 2 will use hafnium absorber assemblies. Mr. Suber noted other options allowed by 10 CFR 50.61(b) such as the submission of an analysis supporting continued operation past the screening criterion or thermal annealing of the vessel.

The USE values of the limiting beltline materials in both units will be less than the acceptance criterion of 50 ft-lb. The applicant performed a plant-specific equivalent margins analysis to satisfy the 10 CFR 50 Appendix G requirements through the end of the period of extended operation. The staff performed independent analysis and confirmed the applicant's conclusion.

The containment buildings are constructed of post-tensioned, reinforced concrete. The preload forces are projected to exceed the minimum required values for 60 years of operation. Therefore, the staff concluded that this TLAA remains valid through the period of extended operation.

The staff concluded that the Boraflex Monitoring Program will adequately manage the effects of aging through the period of extended operation. The four confirmatory items associated with this program deal with: (1) the surveillance frequency of areal density tests, (2) the surveillance frequency of blackness testing, (3) a baseline inspection of areal density, and (4) the specification of acceptance criteria.

Mr. Suber concluded the presentation by stating that the applicant's Environmental Qualification Program is consistent with the GALL Report and will continue to manage equipment in accordance with 10 CFR 50.49.

Member Comments

Red Findings

Members Wallis and Rosen asked about the immediate actions taken by the applicant to address the red findings. The applicant stated that the specific technical fixes have been completed. The operating procedures were changed, the orifices were replaced, and the power supplies to the auxiliary feedwater recirculation valves were changed to make them safety-related. Consultant Leitch added that the real issue is that the applicant missed several opportunities to find these problems earlier. The staff added that a red finding remains open until the root cause of the event has been satisfactorily addressed.

Consultant Leitch asked about the staff's findings in the 95003 inspection. The staff stated that there were ten green findings and one unresolved item in the area of Emergency Preparedness. The unresolved item became a severity level three violation, and a $60,000 civil penalty was imposed.

Consultant Leitch questioned whether the goal of less than 2,500 corrective actions was appropriate given that workers should be encouraged to identify and report problems. The staff stated that this goal is a measure of the applicant's process for resolving items and tracks the backlog of currently open items. The applicant added that last year approximately 8,000 items were generated. Chairman Bonaca agreed with Consultant Leitch's comments and added that there may be legacy issues that have been around for a long time but are not resolved.

Consultant Leitch and Chairman Bonaca asked about the 143 action items identified by the applicant to address the CAL. After these actions are completed, the staff will perform an inspection of the effectiveness of these implemented commitments. The staff examines the applicant's effectiveness review and performs its own independent effectiveness review. The majority of the commitments are being completed on time but a few will be completed after the original target date.

Member Sieber asked what performance indicators are used to measure human error rates at the PBNP. The applicant stated that it monitors human performance error rates for different organizations and resets the clock after an error has occurred. Engineering resets approximately every 14 days, maintenance resets approximately every 3 - 4 days, and the plant resets approximately every 100 days. The criteria for a reset varies for each department. For each reset there is a human performance investigation and an item is entered into the CAP.

Consultant Leitch asked if the corrective action items are identified by the line organizations or external organizations. The applicant stated that the self-identification ratio of corrective actions is 60% for the engineering department at the PBNP. This compares to an industry standard of approximately 30 - 40%.

Chairman Bonaca questioned the effectiveness of oversight organizations at the PBNP. The applicant stated that the nuclear oversight program has been revamped to emphasize working with the line organizations to identify and resolve issues. The staff noted that there has been improvement in the nuclear oversight and quality assurance organizations.

Chairman Bonaca and Member Rosen questioned the staff's statement that the CAP was sound given that the annual assessment letter identified problems in this area. The staff explained that all the necessary elements and components of a sound CAP are in place, but there are problems with the implementation and timely resolution of corrective actions.

Chairman Bonaca asked about the quality of root cause evaluations at the PBNP. The staff stated that it independently reviews root cause evaluations and no issues have been identified in that area. The staff added that another problem identification and resolution inspection is planned for September 2005 that will focus on the timeliness of actions taken and the overall quality of root cause evaluations. The applicant added that a corrective action review board reviews all root cause evaluations as well as the effectiveness of the corrective actions.

Consultant Leitch and Member Rosen asked about the use of PRA in prioritizing corrective actions. The applicant stated that PRA is not explicitly used, but safety significance is considered. All of the corrective actions that are initiated each day are prioritized (A through D) based on the safety significance of the issue. Those that fall within the A category receive a root cause evaluation and those that fall in the B category receive an apparent cause evaluation.

Member Rosen asked for more information regarding the staff's concern with the engineering/operations interface. The staff stated that these departments had a different understanding of issues associated with the grid and fire protection. To address this problem, the applicant implemented an operational decision-making issue process that includes the perspectives of various organizations in making operational decisions. The staff has noted improvement in this area.

Consultant Leitch asked if there is any relationship between closing out the CAL and the red findings. The staff stated that they will be treated separately. The red findings are still open because of the systematic issues identified in the CAL. After the action plan items are completed, the staff will perform an inspection of the completeness and effectiveness of the CAL closeout actions.

General

Several members asked about the EDGs. The applicant stated that all four EDGs are safety-related and each diesel has the capacity to supply one train of safety-related equipment on both units. The normal lineup is to have one EDG dedicated to each bus on each unit. The two emergency diesels added in 1994 were to lower the core damage frequency.

In response to a question from Member Rosen, the applicant stated that the automatic reactor trips for both units in July 2003 were due to equipment failures.

Member Shack asked how much piping has been replaced due to FAC. The applicant responded that all of the secondary side extraction lines and some of the service water lines were replaced with stainless steel.

Several Members asked about the replacement steam generators. The Unit 1 replacement steam generators had Alloy 600 tubes while the Unit 2 steam generators had Alloy 690 tubes.

They all had quatrefoil support plates. The applicant added that very few of the tubes are plugged.

Member Sieber asked about the DC upgrades to the plant. The applicant stated that batteries were added to provide additional backup capability and the swing battery was added so that battery testing could be performed online.

Several Members asked about the reactor vessel head replacements. The heads are being replaced as a preventive measure and not because of cracking. In the last outage an indication was found on a nozzle in Unit 1 and was repaired. The head for Unit 2 has not yet been replaced because the new head is heavier than the old head and a license amendment for the handling of heavy loads is needed. There are no aging issues associated with the crane. The applicant does not plan to replace the head until after this issue is resolved.

Consultant Leitch asked why the LRA was submitted so close to the expiration dates of the current licenses. The applicant responded that the delay was due to a decision from the asset owner. Member Rosen stated that since the current licenses will expire soon, the applicant should have a contingency plan for a Reactor Vessel Internals Program in case the EPRI/MRP program has not been completed.

Chairman Bonaca and Member Sieber asked about cable testing. The applicant stated that as a baseline, all of the medium voltage cables have undergone a partial discharge test. In addition a sample of cables in the most adverse environment will be tested. If degradation is identified, the sample size will be expanded. Chairman Bonaca noted that the PBNP has had problems with flooding of manholes containing these cables. The applicant stated that a water mitigation system is being developed and the manholes are periodically pumped and inspected.

Chairman Bonaca and Member Shack asked about the effects of power uprate on license renewal. The power uprate will be implemented by replacing the main feed pumps and increasing T_{hot} to 605.5 EF. The applicant added that all of the structures and components that would be in scope at the higher power are already in scope.

Member Rosen asked when the license renewal commitments will be completed. The applicant stated that they plan to implement most of them by 2006.

Chairman Bonaca and Member Rosen asked about the use of the Risk-Informed Inservice (RI-ISI) Program for small bore piping. Chairman Bonaca noted that the objective of the one-time inspection of small bore piping is to confirm that there are no aging effects by examining susceptible locations, irrespective of risk. The applicant confirmed that the RI-ISI program does inspect susceptible locations. The staff added that approximately 30 to 40 locations are examined.

Chairman Bonaca and Member Shack noted that Section 3.0.1.4.4 of the LRA is confusing. This section may be confusing thermal embrittlement of cast austenitic stainless steel with IGSCC of stainless steels.

Several members asked about the condition of the containment liner. The staff and applicant explained that there are actually two separate events associated with the liner. The first event was very localized and occurred as a result of drilling into the containment wall. At the worse location, 46% of the containment liner was lost. The second event was caused by a flood. Borated water leaked through the control pores in the floor and caused corrosion of the liner plate. The staff added that the corroded containment liner has been repaired.

In response to a question by Consultant Leitch, the staff stated that the SER with Open Items does not contain all of the issues identified in the license renewal inspection report dated May 2, 2005. However, all of these items will be resolved and incorporated into the final SER.

Member Wallis noted that a large number of commitments are listed in Appendix A of the SER and asked what is done to ensure that they are implemented appropriately. The staff stated that the Region will perform an inspection to verify that the commitments have been implemented. There is also a license condition that these commitments be completed on schedule. The license renewal rule does not permit the staff to deny a renewed license because of a failure to implement these commitments. If the applicant does not implement the commitments, it would be subject to traditional enforcement, and enforcement policy would be used to determine its significance. Member Wallis and Chairman Bonaca noted that given the ROP status of the PBNP and the fact that the Subcommittee is not able to verify the implementation of these commitments, there is a concern about the ability of the applicant to fulfill these commitments.

Chairman Bonaca and Member Wallis asked about the coordination between the inspections and audits. The staff stated that the Project Manager serves as the interface between the regional inspections and audits. Although there is some overlap or redundancy, the inspections focus more on implementation and operating history than the audits. In the case of the Boraflex Monitoring Program, the inspections complemented the audit in that the inspectors were able to pick up where the auditors left off.

Scoping and Screening

Chairman Bonaca asked about the revised scoping methodology submitted in a letter dated April 29, 2005. The staff stated that the revised methodology eliminated the term, exposure duration, and implemented a spaces approach methodology. This information was not incorporated into the draft SER because it was submitted after the cutoff date of March 31, 2005. However, the final SER will describe the new methodology and the additional components brought into scope.

The inspection report dated May 2, 2005, stated that the scoping boundaries for some of the systems were not yet complete. Consultant Leitch noted that it is relatively late in the review process to establish the scoping boundaries. The staff attributed this to the recent change in the applicant's scoping methodology. The applicant stated that the scoping methodology description has been completed and the final boundary locations have been submitted to the staff.

Aging Management

Member Wallis expressed concern about the quality of the AMPs. The staff stated that the audit team determines if the AMPs satisfy the requirements in the license renewal rule and the Region determines if the AMPS are adequately implemented. Some of the existing AMPs may be enhanced such that additional actions are imposed for the period of extended operation that are not required for current operation.

Several Members asked about the open item regarding the applicant's use of relief requests as the basis for exceptions to the GALL Report. The staff requested the applicant develop sufficient technical arguments for taking specific exemptions to the GALL Report. The staff added that some of the relief requests were granted based on hardship. Chairman Bonaca noted that the applicant has an unusually high number of relief requests from the ASME Code.

Member Wallis asked about the excavation and inspection of fire protection piping. The staff responded that one inspection of buried pipes showed that the protective coating was intact and did not need to be repaired. However, in any excavation there is the danger of scratching off the protective coating.

Member Sieber noted that other LRAs have had more than 26 AMPs. The staff stated that it is up to the applicant how to organize the AMPs to demonstrate consistency with the GALL Report.

Consultant Leitch asked about the different criteria for safety-related and non-safety-related piping in the FAC program. The staff responded that the minimum wall thickness criteria is the same for safety-related and non-safety-related piping, but the inspection expansion criteria are different.

Member Rosen asked about the hardness tests performed in the One-Time Inspection Program to detect selective leaching in heat exchangers. The staff stated that this is a simple screening test to identify whether or not the aging mechanism is present. The hardness test is not intended to determine the capability of a component to perform its intended function. Member Rosen stated that it may be more appropriate to perform a metallurgical analysis on a section of the component.

Member Shack asked about the exceptions to the Bolting Integrity Program. The staff explained that the LRA did not identify specific exceptions from the recommendations made in the NUREG and EPRI documents.

Time-Limited Aging Analyses

Several Members asked about the TLAA associated with PTS. The staff explained why Unit 2 is predicted to exceed the PTS screening criterion while Unit 1 is not. The initial fracture toughness (RT_{NDT}) of the limiting material in Unit 2 is a generic value while the initial RT_{NDT} of the limiting material in Unit 1 is a measured value. Thus, the margin term applied to the Unit 2 material is larger, and the RT_{PTS} value calculated at the end of extended operation is higher. Originally, the applicant submitted a master-curve based approach for addressing this TLAA. However, the staff had not yet reviewed the topical report describing this approach so it was withdrawn. The staff added that this report is currently under review. The applicant's options for addressing this issue are to (1) implement a flux reduction program to avoid exceeding the screening criterion, (2) submit an analysis to the staff justifying continued operation past the screening criterion, (3) thermally anneal the vessel, (4) use the master-curve based approach for calculating RT_{PTS}, or (5) wait for a potential change to the PTS rule which would possibly relax the screening criterion. The applicant committed to the use of a low-leakage core and hafnium absorbers but admitted that the use of hafnium absorbers would have little effect in meeting the PTS screening criterion.

Member Wallis asked about the TLAA associated with USE. Both units fall below the USE requirement of 50 ft-lbs so an equivalent margins analysis was performed. The staff stated that this equivalent margins analysis is based on a more refined elastic plastic fracture mechanics analysis using the J-integral fracture toughness property.

Member Wallis asked about the fracture mechanics analysis of the reactor coolant pump flywheel. The staff stated that the number of cycles projected through the end of the period of extended operation is bounded by the number of cycles assumed in the 60 year fatigue analysis.

Subcommittee Discussion

Several Members expressed concern with the serious longstanding performance issues identified in the CAL and the ROP.

Member Sieber stated that the LRA and SER were done properly, but he lacks confidence that the applicant can implement the commitments for license renewal.

Member Shack stated that this LRA was of lower quality than other applications. The staff's requests for information seemed to ask for basic information rather than clarification. Given the experience from the other license renewal applications, there should be less confusion about scoping issues.

Member Wallis commented that this LRA raised more questions than previous applications, but the staff did a good job of responding to questions from the Subcommittee.

Member Kress stated that the ACRS should keep in mind the constraints imposed on the staff by the license renewal rule. The staff's presentation and answers gave him assurance that a good review was performed. He added that the Environmental Impact Statement should be included in the ACRS review of LRAs.

Consultant Leitch commented that if the staff had better coordinated the timing of the inspections, audits, and the issuance of the SER, many of the open items would have been resolved. The timing of the supplemental information, inspections, audits and SER led to confusion.

Member Rosen stated that the LRA application was of good quality except for the rescoping late in the review process. He suggested that instead of a hardness test for selective leaching, a destructive metallurgical examination be performed.

Chairman Bonaca commented that the Subcommittee was provided numerous, confusing, and conflicting documents. The staff appeared to be in a rush to meet a schedule. It would have been more helpful if the inspections, audits, and draft SER were better coordinated and the documents were provided in a more mature stage. Chairman Bonaca concluded by describing his concerns with the impact of current performance on license renewal commitments.

Subcommittee Decisions and Follow-up Actions

The Subcommittee Chairman will summarize the discussions to the full Committee during the June 2005 ACRS meeting and recommend whether an interim letter be issued.

Background Materials Provided to the Committee

1. Nuclear Management Company, LLC, "Application for Renewed Operating Licenses Point Beach Nuclear Plant Units 1 & 2," February 2004
2. Pacific Northwest National Laboratory, "Audit and Review Report for Plant Aging Management Reviews and Programs, Point Beach Nuclear Plant Units 1 and 2," April 11, 2005
3. U.S. Nuclear Regulatory Commission, "Safety Evaluation Report Related to the License Renewal of the Point Beach Nuclear Plant, Units 1 and 2," May 2005
4. U.S. Nuclear Regulatory Commission, "Point Beach Nuclear Plant, Units 1 and 2 NRC License Renewal Scoping, Screening, and Aging Management Inspection Report 05000266/2005005 (DRS); 05000301/2005005 (DRS)," May 2, 2005
5. Letter from J. Dyer, Regional Administrator, to M. Warner, Site Vice President, Kewaunee and Point Beach Nuclear Plants, Nuclear Management Company, LLC, "Point Beach Special Inspection - NRC Inspection Report 50-266/01-17(DRS); 50-301/01-17(DRS), Preliminary Red Finding," April 3, 2002
6. Letter from J. Dyer, Regional Administrator, to M. Warner, Site Vice President, Kewaunee and Point Beach Nuclear Plants, Nuclear Management Company, LLC, "Point Beach Nuclear Plant Final Significance Determination for a Red Finding and Notice of Violation NRC Special Inspection Report No. 50-266/01-17(DRS; 50-301/01-17(DRS)," July 12, 2002
7. Letter from J. Dyer, Regional Administrator, to A. Cayia, Site Vice President, Point Beach Nuclear Power Plant, Nuclear Management Company, LLC, "Point Beach Nuclear Plant Special Inspections: Resolution of Auxiliary Feedwater Old Design Issue and Preliminary Red Finding - Auxiliary Feedwater Orifice Plugging Issue; NRC Inspection Report 50-266/02-15(DRP); 50-301/02-15(DRP)," April 2, 2003
8. Letter from J. Caldwell, Regional Administrator, to A. Cayia, Site Vice President, Point Beach Nuclear Plant, Nuclear Management Company, LLC, "Point Beach Nuclear Plant, Units 1 and 2 Final Significance Determination for a Red Finding and Notice of Violation (NRC Inspection Report No. 50-266/02-15(DRP); 50-301/02-15(DRP))," December 11, 2003

9. Letter from G. Van Middlesworth, Site Vice President, Point Beach Nuclear Plant, Nuclear Management Company, LLC, to U.S. Nuclear Regulatory Commission Document Control Desk, “Commitments in Response to 95003 Supplemental Inspection,” March 22, 2004
10. Letter from J. Caldwell, Regional Administrator, to G. Van Middlesworth, Site Vice President, Point Beach Nuclear Plant, Nuclear Management Company, LLC, “Confirmatory Action Letter,” April 21, 2004
11. Letter from J. Caldwell, Regional Administrator, to D. Koehl, Site Vice President, Point Beach Nuclear Plant, Nuclear Management Company, LLC, “Annual Assessment Letter - Point Beach Nuclear Plant (Report 05000266/200501; 05000301/200501),” March 2, 2005
12. Letter from D. Koehl, Site Vice-President, Point Beach Nuclear Plant, Nuclear Management Company, LLC, to U.S. Nuclear Regulatory Commission Document Control Desk, “License Renewal Application Revised Information,” September 10, 2004
13. Memorandum from L. Reyes, EDO, to Chairman Diaz, Commissioner McGaffican, and Commissioner Merrifield, “Pressurized Thermal Shock Analyses for Renewal of Certain Nuclear Power Plant Operating Licenses,” May 27, 2004

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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 view on the Internet at http://www.nrc.gov/reading-rm/doc-collections/acrs/ can be purchased from Neal R. Gross and Co., 1323 Rhode Island Avenue, NW, Washington, D.C. 20005, (202) 234-4433 (voice), (202) 387-7330 (fax), nrgross@nealgross.com (e-mail).

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