



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

September 21, 2006

MEMORANDUM TO: ACRS Members

FROM: Michael A. Junge, Senior Staff Engineer
Technical Support Staff
ACRS/ACNW

SUBJECT: CERTIFICATION OF THE MINUTES OF THE LICENSE RENEWAL
APPLICATION SUBCOMMITTEE MEETING ON PALISADES NUCLEAR
PLANT LICENSE RENEWAL APPLICATION, July 11, 2006, ROCKVILLE,
MARYLAND

The minutes of the subject meeting were certified on September 21, 2006, 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
M. Snodderly
S. Duraiswamy



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

September 21, 2006

MEMORANDUM TO: Michael A. Junge, Senior Staff Engineer
Technical Support Staff, ACRS

FROM: John D. Sieber, Chairman
License Renewal Subcommittee

SUBJECT: CERTIFICATION OF THE MINUTES OF THE ACRS SUBCOMMITTEE
MEETING ON THE PALISADES NUCLEAR PLANT LICENSE RENEWAL
APPLICATION, JULY 11, 2006, ROCKVILLE, MARYLAND

I hereby certify, to the best of my knowledge and belief, that the minutes of the subject meeting on July 11, 2006, are an accurate record of the proceedings for that meeting.

A handwritten signature in cursive script that reads "John D. Sieber".


John D. Sieber
License Renewal Application
Subcommittee, Chairman



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

September 21, 2006

MEMORANDUM TO: John Sieber, Chairman
ACRS Plant License Renewal Subcommittee

FROM: Michael Junge, Senior Staff Engineer 
Technical Support Staff
ACRS/ACNW

SUBJECT: WORKING COPY OF THE MINUTES OF THE ACRS SUBCOMMITTEE
MEETING ON THE PALISADES NUCLEAR PLANT LICENSE
RENEWAL APPLICATION, JULY 11, 2006, ROCKVILLE, MARYLAND

A working copy of the minutes of the subject meeting is attached for your review.

Please review and comment on them at your earliest convenience. If you are satisfied with these minutes please sign, date and return the attached certification letter.

Attachment: Certification Letter
Minutes (DRAFT)

cc w/o Attachment:

J. Larkins
M. Snodderly
S. Duraiswamy

Issued: September 21, 2006

**ADVISORY COMMITTEE ON REACTOR SAFEGUARDS
MINUTES OF ACRS PLANT LICENSE RENEWAL SUBCOMMITTEE MEETING
JULY 11, 2006
ROCKVILLE, MARYLAND**

INTRODUCTION

The ACRS Subcommittee on Plant License Renewal met on July 11, 2006, at 11545 Rockville Pike, Rockville, Maryland, in Room T-2B3. The purpose of this meeting was to hear a briefing by and hold discussions with representatives of the NRC staff and Nuclear Management Corporation (NMC) regarding the License Renewal Application (LRA) and Safety Evaluation Report (SER) for the Palisades Nuclear Plant (PNP). The Subcommittee planned to gather information, analyze relevant issues and facts to formulate proposed positions, as appropriate, for deliberation by the ACRS Full Committee. The entire meeting was open to public attendance. Michael Junge was the cognizant staff engineer and the Designated Federal Official for this meeting. The Subcommittee received a request for time to make oral statements from a member of the public regarding this meeting, but no written comments were received. The meeting was convened at 1:30pm and adjourned at 5:00pm.

ATTENDEES

ACRS

Jack Sieber, Chairman
J. Sam Armijo, Member
Graham Wallis, Member

Mario Bonaca, Member
Otto Maynard, Member
Michael Junge, ACRS Staff

NRC STAFF/PRESENTERS

Juan Ayala, NRR
Patricia Loughheed, NRR
Jake Zimmerman, NRR
Louise Lund, NRR
Matthew Mitchell, NRR
Kaihwa Hsu, NRR
Dan Hoang, NRR
Michael Morgan, NRR
Naeem Iqbal, NRR
John Tsao, NRR
Devender Reddy, NRR
Tommy Le, NRR
Raj Goel, NRR

David Jeng, NRR
Frank Gillespie, NRR
Jim Davis, NRR
Mark Hartzman, NRR
Simon Sheng, NRR
Rodrigo De La Garza, NRR
Kiyoto Tanabe, NRR
Maurice Health, NRR
Daniel Merzke, NRR
Paul Prescott, NRR
Robert Schaaf, NRR
Yamir Diaz, NRR
Ram Subbarant, NRR

ATTENDEES (CONT'D)

OTHER ATTENDEES

Pete Sena, FENOC
Larry Seamans, NMC
John Broschak, NMC
Brian Brogan, NMC
Cliff Custer, NMC
Mark, Cimock, NMC
Eugene, Eckholt, NMC
Mike Gallaher, EXELON
Chalmer Myer, SNC
Cliff Marks, ISL

Robert Vincent, NMC
Paul Harden, NMC
John Kneeland, NMC
Darrel Turner, NMC
Bill Roberts, NMC
Mike Fallin, CEG
Steven Pope, ISL
Kevin Kamps, NIRS
Daniel Horner, McGraw-Hill

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 BY THE SUBCOMMITTEE CHAIRMAN

Mr. Sieber, Chairman of the Plant License Renewal Subcommittee, stated that the purpose of this meeting was to hear presentations by and hold discussions with representatives of the NRC staff and NMC regarding the LRA submitted by NMC and the associate draft SER prepared by the staff.

STAFF INTRODUCTION

Ms. Lund, NRR, introduced several members of the staff including Mr. Gillespie (Director for the Division of License Renewal), Mr. Ayala (License Renewal Project Manager) and Ms. Loughheed (Inspection Team Leader). Ms. Lund stated that the Palisades LRA was of sufficient quality and 95% consistent with the Generic Aging Lessons Learned (GALL) Report, the staff issued 174 formal requests for information (RAI) during its review. This number of formal requests for information is on the low end of the amount of RAIs received for recent plants LRAs.

PALISADES LICENSE RENEWAL APPLICATION

Mr. Tuner, NMC, introduced himself, Mr. Harden (Site Vice President), Mr. Broschak (Site Engineering Director, Mr. Vincent (Manager of the License Renewal Project) and other members of the NMC staff in attendance. The presentation by NMC described the plant, its licensing history, current plant status, major plant modifications, license renewal methodology, commitment management, and technical issues.

Palisades Plant Description and Current Plant Status

Mr. Turner stated that PNP is located on the southeast corner of Lake Michigan near the town

of Covert, Michigan. The plant is a Combustion Engineering (CE) two loop plant with four primary cooling pumps, two steam generators in a pre-stressed concrete containment. The licensed power is 2565.4 MWt or 820 MWe. The plant is owned by Consumers Energy Company and operated by Nuclear Management Company. Mr. Broschak, NMC, stated that the plant was currently operating at 100% in the 19th fuel cycle of operation. The next refueling outage is scheduled for the fall of 2007. All NRC performance indicators are green and there are no current NRC inspection findings greater than green.

PALISADES LICENSING HISTORY

Mr. Vincent, NMC, stated the Construction Permit for Palisades was issued in 1967 and was consistent with the licensing process of the time. Palisades received a provisional license in 1971 with an initial expiration date of 2007. In 1974 Palisades applied for the full-term operating license. In 1991 the full-term operating license was issued with an expiration date of 2007. In 2000, the plant recovered the construction period and the expiration date was changed to March 24, 2011. In 2005, the licensed power level was increased from 2530 Mwt to 2575.4 MWt. Mr. Vincent stated that was a measurement uncertainty recaptured power upgrade. The current license power level is 2565 MWt.

PLANT IMPROVEMENTS AND PLANNED UPGRADES

Mr. Broschak, NMC, provided a brief overview of the significant and major plant modifications since original construction. In 1974-1975 the unit was converted from once-through circulating water to Cooling Towers. The Condenser was also retubed. In 1977 and again in 1987 the Spent Fuel Pool was modified to expand the storage capability. In 1983 the site added a third Auxiliary Feedwater Pump and upgraded that system as well as the Control Room Ventilation System to Safety-Grade. In 1990 the Steam Generators were replaced. Along with the Steam Generator replacement, the Main Condenser and Feedwater Heaters were retubed. In 1993 Palisades implemented a Dry Spent Fuel Storage facility (VSC-24). In 2004 a second Dry Spent Fuel Storage System was installed (NUHOMS). Two modifications from PRA insights were the Diversified Connection Paths to Offsite Power Supplies in 1989 and Under-Reactor Vessel Floor Drains to Containment Sump modifications in 1995.

LICENSE RENEWAL PROJECT

Mr. Vincent, NMC, stated that the license renewal application was dated March 22, 2005. It was developed using the standard format of NEI 95-10 which is endorsed by the NRC. The GALL revision used for the application was the 2001 Revision 0 of the GALL and the Standard Review Plan. The application addressed all of the issued and draft ISGs that were available publicly.

After submitting the application, NMC reassessed the AMR results using draft Revision 1 of the GALL. When the final Revision 1 of the GALL was issued in September the results were provided to the NRC. The final result is that aging over the extended period of operation will be managed by 24 Aging Management Programs, 20 of which are existing programs based on existing activities and 4 of those programs are new.

Commitment Management

Commitments made by the applicant are listed in detail in Appendix A to the SER. The applicant made 54 commitments related to the AMPs to manage aging effects of structures and components prior to the periods of extended operation. The applicant stated that the commitments have been entered into their corrective action tracking program. This is the way all commitments are managed at the site. Additionally, program descriptions, the TLAA descriptions and the commitments will be incorporated into the FSER so they can control the implementation of those commitments.

Technical Issues

Pressurized Thermal Shock

Mr. Broschak stated that Palisades is projected to reach the screening criteria in 2014 using the existing rule in 10 CFR 50.61. The applicant has known this for 10 years and have employed aggressive flux reduction strategies through the use of ultra-low leakage core to minimize the impact of the flux on the reactor vessel embrittlement. The applicant has participated with NRC research programs developing updated methodology for analyzing the PTS issue and evaluating it. The applicant has alternatives available to manage the issue for the period of extended operation. Although there is proposed rulemaking to 10 CFR 50.61 which may preclude the need for the plant specific management, the applicant is not counting on the new rulemaking because there are alternatives they can implement.

Intergranular Separation (Under-clad Cracking)

Mr. Broschak stated that Intergranular separation or underclad cracking is the phenomenon that was identified in the 1970s and was dispositioned at that time as being acceptable for a 40 year period of operation. Palisades has been evaluated using a Westinghouse WCAP methodology that was acceptable to the NRC. That methodology produced results that show is little or no crack growth over the 60 year period of operation and that any potential cracks would have no effect on the structural integrity of the reactor vessel.

GSI-191 "Assessment of Debris Accumulation on PWR Sump Performance"

Mr. Broschak stated that Generic Safety Issue 191 is applicable to all pressurized water reactors and the methodology defined in Generic Letter 2004-02 is being implemented at Palisades in accordance with the requirements of that letter. Palisades will be installing a passive strainer system.

Mr. Broschak stated that the information notice on potential chemical effects of the interaction of trisodium phosphate with cal-sil insulation resulted in Palisades taking prompt action to remove the trisodium phosphate from the containment until the final solution is in place in 2007. Palisades submitted a license amendment request to remove the trisodium phosphate and implement a manual injection of sodium hydroxide.

NRC STAFF PRESENTATION

SER Overview

The presentation by Mr. Ayala provided an overview of the staff's SER. He described the staff's review activities associated with scoping, screening, aging management, and time-limited aging analysis.

Mr. Ayala, NRR, stated that the draft SER was issued on June 1, 2006 with no open items and one confirmatory item. It contains four proposed license conditions. The staff issued 174 RAIs and 412 audit questions. The application is 95% consistent with Revision 1 to the GALL Report. The staff's audits and inspections were conducted between June and November 2005.

Scoping and Screening

As a result of the staff's review, several minor components were brought into scope of the license renewal. These components included the Steam Generator Feed Ring, Boric Acid Pump Filters, Air Supply Line and Air reservoirs, Solenoid Valves, First and Second Stage Air Compressors including the load/unload valves, Feedwater Heaters, and Primary Make-up Storage Tank underground piping. The staff conclude that the applicants scoping and screening results included all structures, systems, and components within the scope of license renewal and subject to AMR.

Ms. Lougheed, Region III, described the inspections performed by the Region to support NRR's review of this LRA. The team of five inspectors conducted two-week long inspections from October 24, to November 16, 2006 in accordance with Inspection Procedure 71002.

The scoping and screening portion of the inspection emphasized physical walkdowns of the plant and concentrated on non safety-related systems whose failure could impact safety-related systems. Only minor inconsistencies were identified. The inspection concluded that the electrical, structural and mechanical systems were appropriately scoped.

The Aging Management portion of the inspection reviewed 14 AMP and two TLAA programs. The AMPs were found to be adequate for the period of extended operation when enhanced or implemented in accordance with the applicants commitments.

Palisades is in the licensee response column of the NRC's Action Matrix. The NRC does not have any cross-cutting issues at Palisades. All performance indicators at this plant are green.

Aging Management Program Review and Audits

Mr. Ayala, NRR, described the staff's evaluation of some of the AMPs and aging management reviews for Palisades. Of the 24 AMPs credited for license renewal, 20 are existing programs and 4 are new programs. 13 of the AMPs are consistent with the GALL Report, 10 are consistent with the GALL report with exceptions/enhancements, and 1 is plant specific.

The Buried Services Corrosion Monitoring Program is consistent with GALL. Inspections will be performed every 10 years with credit taken for opportunistic inspections. If insufficient data

exists, focused inspections will be performed. There is only one below-grade tank which is contained in a vault and is not exposed to soil.

The Bolting Integrity Program is consistent with the GALL Report with enhancements. Review and revision to the ASME ISI Master Plan and plant maintenance procedures to reflect GALL Report guidance and evaluation of high-strength bolting used in component supports for cracking will be performed.

The Boric Acid Corrosion Program had enhancements that were provided as commitments. First commitment is to revise procedures to include criteria for observing susceptible SSC for boric acid leakage and degradation during system walkdown inspections. Secondly, revision to procedures to include explicit acceptance criteria for boric acid inspections, and last is revision to procedures to include inspection of structural steel and non-ASME component supports for evidence of boric acid residue and boric acid wastage/corrosion.

The Flow-Accelerated Corrosion Program is consistent with the GALL Report. The proposed criteria is less conservative for NSR piping, but the NRS piping is bought to the same criteria as safety-related criteria.

The Reactor Vessel Integrity Surveillance Program had four enhancements that were submitted as commitments. The four commitments were:

Ensure that pressure-temperature and LTOP curves are updated to bound the extended operating period. Curves will be updated and submitted to NRC for approval prior to the period of extended operation.

Document and establish the requirement to save and store all pulled and tested Reactor Vessel surveillance capsules for future reconstitution use.

Ensure that at least one surveillance capsule remains in the RV and is tested during the period of extended operation to monitor the effects of neutron irradiation.

Develop a program level procedure to implement and control Technical Specification and FSAR activities associated with the RV Integrity Surveillance Program.

The Aging Management Review covered 100% of 29 plant systems, 10 structures and 9 commodity groups.

Time Limited Aging Analysis (TLAAs)

Mr. Ayala, NRR, described the staff's evaluation of the TLAAs associated with neutron embrittlement, metal fatigue, environmental qualification of electrical equipment, concrete containment tendon prestress analysis, containment liner plate and penetration load cycles and plant specific TLAA.

There are three analyses affected by irradiation embrittlement identified as TLAAs. Pressurized Thermal Shock, Upper Shelf Energy and Pressure Temperature Limits. The applicant used 42.37 EFPY(60 years) to evaluate. The screening criteria will be exceeded in 2014. Palisades plans continued use of an ultra low leakage core design and will submit final PTS resolution

three years prior to exceeding the criteria (anticipated 2014) per 10 CFR 50.61.

Some options are available to extend this time. Further flux reductions and preheating of safety injection water, or thermal annealing of the reactor pressure vessel.

Reactor Vessel Upper Shelf Energy acceptance criteria is anticipated to exceed the acceptance criteria in 2021 for the lower shell plate. Palisades plans to submit an Equivalent Margins Analysis three years prior to 2021 in accordance with 10 CFR 50, appendix G.

Fatigue monitoring programs will ensure that the Cumulative Usage Factor for all ASME Class 1 piping components based on a 60 year life will remain less than 1.0. The NRC staff accepted the evaluation in accordance with 10 CFR 54.21 (c)(1)(i),(ii), and (iii).

The NRC staff concluded that the Environmental Qualification Program of Electrical Equipment is adequate to manage the effects of aging on the intended function of the electrical components. It is consistent with GALL AMP X.E1, "Environmental Qualification of Electrical Equipment."

Underclad Crack Growth is a confirmatory item. The NRC staff is verifying a plant specific WCAP using the same methodology as WCAP 15338-A. The technical basis for WCAP 15338-A has previously been approved by the NRC staff.

The TLAA list was complete and acceptable in accordance with 10 CFR 54.3. There are no plant-specific exemptions in accordance with 10 CFR 54.21.

Mr. Ayala conclude that there is reasonable assurance that the activities authorized by the renewed license will continue to be conducted in accordance with the Current Licensing Basis.

Members Comments

Chairman Sieber asked whether neutron absorbers were used in the spent fuel pool. The applicant stated that there are Boron Carbide Plates as well as Boroflex used in the Spent Fuel Pool. The Boroflex is not credited in the analysis for the Spent Fuel Pool, but the Boron Carbide Plates are credited for neutron absorption.

Member Bonaca and Chairman Sieber asked about the Auxiliary Feed System. The applicant stated that there is a steam driven auxiliary feed pump and two electric driven pumps. At least one is capable of 100% capacity. The pumps meet the separation criteria for fire protection.

Chairman Sieber asked how many offsite power sources were available. The applicant stated 3 were available. The first is available through the original start-up lines which are a set of overhead lines, the second is from an independent section of the switchyard with a transformer and a set of underground lines that feed the vital busses directly and the third is back-feed through the main transformer.

Members Shack, Bonaca and Chairman Sieber asked questions about the material

performance of the replacement steam generators and water chemistry history. The applicant stated that Steam Generators currently have 4.5% of the tubes plugged. 3% were preferentially plugged when they were installed. Over 16 years of operation there have been an additional 1.5% plugged. The original Steam Generators had carbon steel support plates which led to denting problems. The water chemistry associated with the old generators led to sludge piles. The current generators use volatile chemistry control. The applicant stated that they use the EPRI PWR steam generator water chemistry guidelines.

Member Bonaca asked about the physical condition of the plant. The applicant responded that the plant condition is good to excellent.

Member Shack asked if changes in the AMP for control rod drive housings would have prevented the cracking in that area. The applicant responded that the manufacturing technique used in the original housings left a significant amount of stresses. The housing have been replaced with manufacturing techniques using the latest technology to ensure the stresses that historically due to the older manufacturing techniques had stress risers that were actually manufactured in a manner that put it in a compressive stress rather than tensile stress to reduce susceptibility.

Chairman Sieber and Member Wallis questioned the large amount of commitments made by the applicant. The applicant responded that most of the commitments represent enhancements to programs that already existed. Some changes were made to bring the applicant in alignment with GALL. A number of the commitments are short term, such as comparison of GALL version of chemistry standards versus the EPRI standards. Approximately 12 were short term the other commitments that require action is approximately 40. Chairman Sieber pointed out there are 5 years to complete the 40 commitments.

Chairman Sieber asked how many surveillance capsules were available. The applicant responded that there were 3 capsules that see the fluence the vessel sees, and one capsule that sits above the core and does not get the fluence.

Member Shack asked if the new PTS rulemaking is approved, would the applicant change the ultra-low leakage core design. Chairman Sieber pointed out that the low leakage cores require more fuel and are more expensive to operate. The applicant stated they would have to consider cost and also how long the vessel would be able to operate safely.

Member Wallis asked about the alternatives available. The applicant responded that they could use site specific material sampling and analysis and using the master curve methodology to develop a pressure/temperature curve for use during the extended period of operation.

Member Maynard asked what was being used to justify the 20 years of extended operation. The applicant replied that the rule requires a plan be submitted three years prior to expiration of the existing license or the time of reaching the screening criteria. If the criteria is met, the applicant would make a decision on which method they would use to manage the extended period of operation. If all the options are not feasible, then the unit would not be allowed to operate beyond that point.

Member Armijo asked if the underclad cracking was by analysis only or if there were measurements taken. Mr. Kneeland stated that there were measurements taken and they were

12 years apart. The cracks that were identified in the first inspection have not propagated. Mr Sieber pointed out that this is a confirmatory item and the NRC staff currently has this for review. This is an item that will be resolved prior to the full committee meeting.

Member Wallis asked what type of strainer is currently in place and what the size difference was going to be. Mr Borschak stated that the new strainer was on the order of 80 to 100 times larger or approximately 3000 square feet. Chairman Sieber pointed out that this strainer issue would be there whether or not an application for license renewal was in place or not. The strainer is not tied to license renewal.

Member Bonaca asked a question on inaccessible non-EQ medium voltage cables. He noted that an inspection report identified a flooded manhole and asked if there was a new program the applicant was going to implement. Mr. Seamans stated that the applicant has initiated a corrective action to periodically inspect the manholes. The applicant also performs mega-ohm test and polarization index of the cables.

Member Wallis asked about commitments to inspect buried tanks and if the applicant was satisfied with the technology that is currently available. Mr. Vincent stated that they were not looking for any new technology. If the industry develops new techniques, the applicant would probably revise their program to incorporate new technology. Mr. Cimock stated there was only one tank buried which was the fuel oil tank. That tank is surrounded by a sand barrier and has moisture detection.

Member Bonaca questioned the Boric Acid Inspection Program enhancements. Mr. Roberts, NMC, described the changes to the program as minor. The changes were to include explicit acceptance criteria rather than just signs of boric acid. The enhancements will also include looking at structural members and components.

Member Shack asked if the fatigue monitoring program included an environmental enhancement factor. Mr. Hartzman, NRR, responded that it did include that factor.

Agreements

None.

Staff/Applicant/Industry Follow-up Actions

During the meeting, members of the Public provided us with comments and asked questions. These public comments and questions were recorded and are contained in the transcript of the Subcommittee meeting. A memorandum was provided to the Executive Director for Operations identifying the transcript as the source for the questions for his attention and disposition.

Subcommittee's Action

The staff and the applicant plan to provide a briefing regarding this matter to the full Committee during the November 1, 2006, ACRS meeting.

Documents Provided to the Subcommittee

- 1) Safety Evaluation Report Related to the License Renewal of the Palisades Nuclear Power Plant, dated September 2006.
- 2) Palisades Nuclear Power Plant - Application for Renewed Operating Licenses, dated March 22, 2005
- 3) Safety Evaluation Report with Open Items Related to the License Renewal of the Palisades Nuclear Power Plant, dated June 2006
- 4) Audit and Review Report for Plant Aging Management Reviews and Programs (AMPs) (AMRs) - Palisades Nuclear Power Plant, dated October 20, 2005
- 5) Palisades Nuclear Power Plant, Inspection Report 05000255/2005009, dated December 28, 2005

NOTE : Additional details of this meeting can be obtained from a transcript of this meeting available for downloading or viewing on the Internet at <http://www.nrc.gov/reading-rm/adams.html> or <http://www.nrc.gov/reading-rm/doc-collections/> can be purchased from Neal R. Gross and Co., 1323 Rhode Island Ave., N.W., Washington, DC 20005 (202) 234-4433.

mAS

reimbursement of incidental expenses incurred due to participation in an approved rehabilitation effort for the preceding four week period or fraction thereof.

Ira L. Mills,

Departmental Clearance Officer.

[FR Doc. E6-9713 Filed 6-20-06; 8:45 am]

BILLING CODE 4510-23-P

FEDERAL MINE SAFETY AND HEALTH REVIEW COMMISSION

Sunshine Act Meeting; Notice

June 13, 2006.

TIME AND DATE: 10 a.m., Tuesday, June 27, 2006.

PLACE: The Richard V. Backley Hearing Room, 9th Floor, 601 New Jersey Avenue, NW., Washington, DC.

STATUS: Open.

MATTERS TO BE CONSIDERED: Resuming the meeting that began Thursday, June 8, the Commission will consider and act upon the following in open session: *Secretary of Labor v. Jim Walter Resources, Inc.*, Docket No. SE 2003-160. (Issues include whether the judge correctly determined that the operator violated 30 CFR 75.360(b)(3), and that the violation was significant and substantial and attributable to the operator's unwarrantable failure; whether the judge correctly determined that the operator did not violate 30 CFR 75.1101-23(a); whether the judge correctly determined that the operator violated 30 CFR 75.1101-23(c), and that the violation was not significant and substantial; and whether the judge properly followed section 110(i) of the Mine Act in setting the penalty amounts for the violations found.)

Any person attending this meeting who requires special accessibility features and/or auxiliary aids, such as sign language interpreters, must inform the Commission in advance of those needs, subject to 29 CFR 2706.150(a)(3) and 2706.160(d).

FOR FURTHER INFORMATION CONTACT: Jean Ellen, (202) 434-9950; (202) 708-9300 for TDD Relay; 1-800-877-8339 for toll free.

Jean H. Ellen,

Chief Docket Clerk.

[FR Doc. 06-5594 Filed 6-19-06; 11:45 am]

BILLING CODE 6735-01-M

NUCLEAR REGULATORY COMMISSION

Advisory Committee on Reactor Safeguards Meeting of The ACRS Subcommittee on Plant Operations; Notice of Meeting

The ACRS Subcommittee on Plant Operations will hold a meeting on July 26, 2006, at the U.S. NRC Region I, 475 Allendale Road, King of Prussia, Pennsylvania.

The entire meeting will be open to public attendance.

The agenda for the subject meeting shall be as follows:

Wednesday, July 26, 2006—8:30 a.m. until the conclusion of business.

The Subcommittee and Region I will discuss regional inspection, enforcement, and operational activities. The Subcommittee will gather information, analyze relevant issues and facts, and formulate proposed positions and actions, as appropriate, for deliberation by the full Committee.

Members of the public desiring to provide oral statements and/or written comments should notify the Designated Federal Official, Mr. Michael A. Junge (telephone 301-415-6855) five days prior to the meeting, if possible, so that appropriate arrangements can be made. Electronic recordings will be permitted.

Further information regarding this meeting can be obtained by contacting the Designated Federal Official between 6:45 a.m. and 3:30 p.m. (e.t.). Persons planning to attend this meeting are urged to contract the above named individual at least two working days prior to the meeting to be advised of any potential changes to the agenda.

Dated: June 14, 2006.
Michael R. Snodderly,
Branch Chief, ACRS/ACNW.
[FR Doc. E6-9704 Filed 6-20-06; 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 July 11, 2006, Room T-2B3, 11545 Rockville Pike, Rockville, Maryland.

The entire meeting will be open to public attendance.

The agenda for the subject meeting shall be as follows:

Tuesday, July 11, 2006—1:30 p.m.—5 p.m.

The purpose of this meeting is to discuss the License Renewal Application for the Palisades Nuclear Power Plant and the related Safety Evaluation Report (SER) with open items prepared by the NRR staff. The Subcommittee will hear presentations by and hold discussions with representatives of the NRC staff, Nuclear Management Company, LLC, and other interested persons regarding this matter. The Subcommittee will gather information, analyze relevant issues and facts, and formulate proposed positions and actions, as appropriate, for deliberation by the full Committee.

Members of the public desiring to provide oral statements and/or written comments should notify the Designated Federal Official, Mr. Michael A. Junge (telephone 301/415-6855) five days prior to the meeting, if possible, so that appropriate arrangements can be made. Electronic recordings will be permitted.

Further information regarding this meeting can be obtained by contacting the Designated Federal Official between 6:45 a.m. and 3:30 p.m. (ET). Persons planning to attend this meeting are urged to contact the above named individual at least two working days prior to the meeting to be advised of any potential changes to the agenda.

Dated: June 14, 2006.
Michael R. Snodderly,
Branch Chief, ACRS/ACNW.
[FR Doc. E6-9719 Filed 6-20-06; 8:45 am]
BILLING CODE 7590-01-P

NUCLEAR REGULATORY COMMISSION

Advisory Committee on Reactor Safeguards; Subcommittee Meeting on Planning and Procedures; Notice of Meeting

The ACRS Subcommittee on Planning and Procedures will hold a meeting on July 11, 2006, Room T-2B1, 11545 Rockville Pike, Rockville, Maryland.

The entire meeting will be open to public attendance, with the exception of a portion that may be closed pursuant to 5 U.S.C. 552b(c)(2) and (6) to discuss organizational and personnel matters that relate solely to the internal personnel rules and practices of the ACRS, and information the release of which would constitute a clearly unwarranted invasion of personal privacy.

The agenda for the subject meeting shall be as follows:

**Advisory Committee on Reactor Safeguards
Plant License Renewal Subcommittee Meeting
Palisades Nuclear Power Plant
July 11, 2006
Rockville, MD**

-PROPOSED SCHEDULE-

Cognizant Staff Engineer: Michael A. Junge MXJ2@NRC.GOV (301) 415-6855

Topics	Presenters	Time
Opening Remarks	J. Sieber, ACRS	1:30 pm - 1:35 pm
Staff Introduction	L. Lund, NRR	1:35 pm - 1:40 pm
Palisades License Renewal Application A. Application Background B. Description of Palisades C. Operating History D. Scoping Discussion E. Application of GALL F. Commitment Process	R. Vincent, NMC D. Turner, NMC J. Broschak, NMC	1:40 pm - 2:40 pm
SER Overview A. Scoping and Screening Results B. Onsite Inspection Results	J. Ayala, NRR P. Loughheed, Region III	2:40 pm - 3:15 pm
Aging Management Program Review and Audits	J. Ayala, NRR	3:15 pm - 4:00 pm
Time-Limited Aging Analyses	J. Ayala, NRR	4:00 pm - 4:30 pm
Subcommittee Discussion	J. Sieber, ACRS	4:30 pm -5:00 pm

NOTE:

- Presentation time should not exceed 50 percent of the total time allocated for a specific item. The remaining 50 percent of the time is reserved for discussion.
- 50 copies of the presentation materials to be provided.

ADVISORY COMMITTEE ON REACTOR SAFEGUARDS
SUBCOMMITTEE MEETING ON PLANT LICENSE RENEWAL

July 11, 2006
Date

PLEASE PRINT

	<u>NAME</u>	<u>AFFILIATION</u>
1	PETE SENA	FENOC
2	ROBERT VINCENT	NMC
3	LARRY SEAMANS	NMC - PALISADES
4	Paul Harden	NMC
5	John Broschak	NMC - Palisades
6	John Kueelaud	NMC
7	BRIAN BROGAN	NMC
8	DARREL TURNER	NMC
9	Cliff Custer	FENOC
10	Bill Roberts	NMC
11	MARK CIMOCK	NMC - PALISADES
12	MIKE FALLIN	CONSTELLATION ENERGY
13	Eugene Eckholt	NMC - Prairie Island
14	STEVEN POPE	ISL, INC
15	MIKE Galagher	EXCEL
16	Kevin Kamps	NIRS
17	Chalmer Myer	SNC
18	DANIEL HORNER	MiGraw-Hill
19	Ray MATHEN	NRR
20	Cliff MARKS	NRC-CONTRACTOR-ISL

ADVISORY COMMITTEE ON REACTOR SAFEGUARDS
SUBCOMMITTEE MEETING ON PLANT LICENSE RENEWAL

July 11, 2006

TODAY'S DATE: July 11, 2006

NRC STAFF ATTENDEES PLEASE SIGN BELOW

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	<u>NAME</u>	<u>AFFILIATION</u>
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2.	Kaihua HSU	NRR/DLR
3.	Rodrigo De la Garza	NRR/DLR
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12.	DANIEL MERZE	NRR/DLR
13.	Louise Lund	NRR/DLR
14.	John TSAO	NRR/DCI
15.	Paul Prescott	NRR/DE
16.	Mathew J. Mitchell	NRR/DCI
17.	Devender Reddy	NRR/DLR
18.	Robert Schwab	NRR/DLR
19.	Tommy Le	NRR/DLR
20.	Jim DAVIS	NRR/DLR

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SUBCOMMITTEE MEETING ON PLANT LICENSE RENEWAL

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1. Ram Subramanian	R LRA/DLR
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Palisades Nuclear Plant License Renewal Safety Evaluation Report

Staff Presentation to the ACRS

Juan Ayala, Project Manager

Office of Nuclear Reactor Regulation

July 11, 2006



Introduction

- Overview
- Section 2: Scoping and Screening Review
- License Renewal Inspections
- Section 3: Aging Management Review Results
- Section 4: Time-Limited Aging Analyses (TLAAs)

Overview



- LRA submitted by letter, dated March 22, 2005
- CE PWR-DRYAMB containment
- 2565 MWth, 865 MWe
- Operating License DRP-20 expires March 24, 2011
- PNP located 5 miles S of South Haven, MI

Overview



- SER issued June 1, 2006
- No Open Items
- One Confirmatory item
- Four (4) license conditions
- 174 RAIs issued, 412 audit questions
- ≈95% consistent with draft GALL Report, Revision 1
- Minor components brought into scope

Review Highlights



- AMP GALL Audit
 - June 20 - 24, 2005
- Scoping and Screening Methodology Audit
 - June 27 - July 1, 2005
- AMR GALL Audit
 - August 1 - 5, 2005
- Regional Inspections
 - October 24 - 28, 2005
 - November 14 - 18, 2005

Section 2: Scoping and Screening Review



Section 2.1 - Scoping and Screening Methodology

- On-site Audit - June 27 - July 1, 2005
- Staff audit and review concluded that the applicant's methodology satisfies the rule (10 CFR 54.4(a) and 10 CFR 54.21)
 - AFW Pump Room pipe insulation brought into scope

Section 2.2 – Plant-Level Scoping

- No omission of systems or structures within the scope of license renewal

Section 2: Scoping and Screening Review



Section 2.3 – Mechanical Systems

- 29 mechanical systems
- 100% reviewed
- On-site review of mechanical systems
- ~~0~~ items referred to Regional inspection team

Section 2: Scoping and Screening Review



Section 2.3 – Mechanical Systems

- Components brought into scope
 - Steam generator feedwater ring
 - Boric acid pump filters
 - Air supply line and air reservoirs
 - Solenoid valves
 - First and second stage air compressors, including the load/unload valves
 - Feedwater heaters
 - Primary system make-up storage tank underground piping

Section 2: Scoping and Screening Review



Section 2.4 – Containment, Structures, and Supports

- No omission of structures or supports within the scope of license renewal

Section 2.5 – Electrical and Instrumentation & Control

- No omission of electrical and instrumentation & control systems components within the scope of license renewal

Section 2: Scoping and Screening Summary



- The applicant's scoping methodology meets the requirements of 10 CFR Part 54
- Scoping and screening results, as amended, included all SSCs within the scope of license renewal and subject to AMR



License Renewal Inspections

Patricia Loughheed
Region III



Overview

- Two–week onsite inspection from October 24 to November 16, 2005
- Scheduled to support NRR reviews
- Team of five experienced inspectors
- Inspection performed in accordance with NRC Inspection Procedure 71002

Scoping and Screening



- Reviewed 14 systems
- Looked at electrical, structural, and mechanical systems
- Emphasized plant physical walk downs
- Concentrated on non-safety systems whose failure could impact safety systems

Scoping and Screening Conclusions



- **Systems appropriately scoped**
*1 electrical system 2 component not scoped in but screened out anyway
HVAC - out of scope Reg III agreed*
- **Some minor inconsistencies identified**
- **Scoping and screening acceptable for license renewal**

Aging Management



- Reviewed 14 AMP and 2 TLAA programs
- Reviewed
 - existing plant documentation
 - operational experience information
 - corrective actions to current plant issues and
 - proposed enhancements and commitments
- Followed up on NRR review efforts
- Performed plant walk downs

Aging Management Conclusions



- Aging Management Programs adequate for period of extended operation when enhanced or implemented in accordance with commitments



Overall Conclusions

- Palisades scoping, screening and aging management programs sufficient for extended operation
- Region III does not see any inspection impediments to renewing the operating license

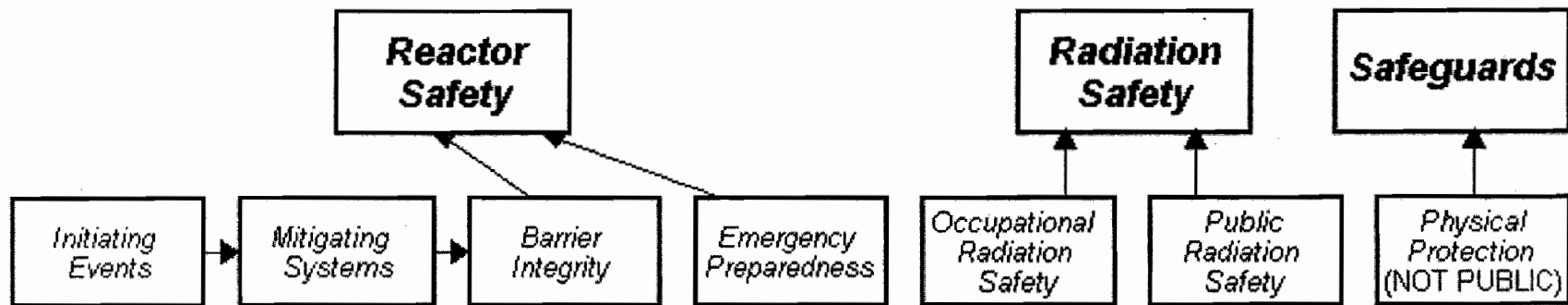
Current Performance



- Licensee is in the Licensee Response Column (Column I) of the NRC's Action Matrix
- NRC does not currently have any cross-cutting issues open at Palisades
- Revised Reactor Oversight Process continues to be followed



Performance Indicators

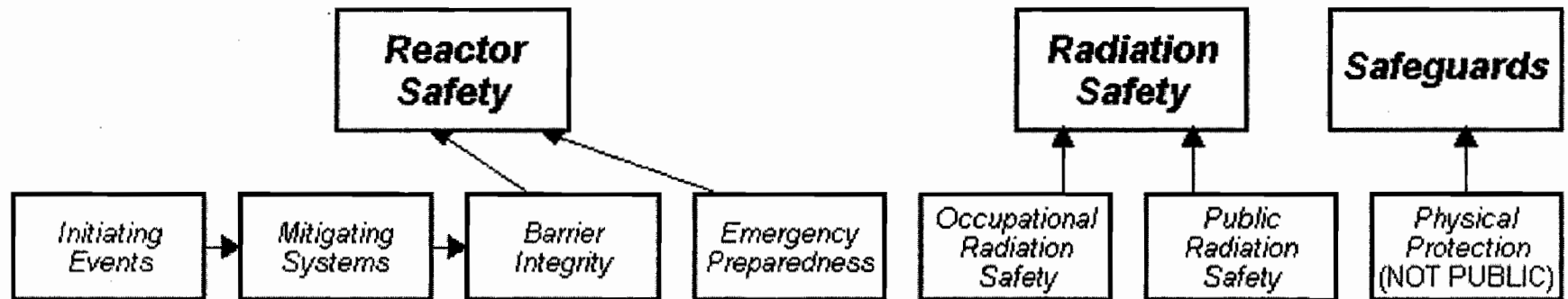


Performance Indicators

Unplanned Scrams (C)	Emergency AD Feed System Unavailability (C)	Emergency Core Cooling System (ECCS) Unavailability (C)	Drill/Exercise Participation (C)	Occupational Radiation Safety (C)	Physical Protection (NOT PUBLIC) (C)
Scrams With Loss of Normal Heat Removal (C)	High Pressure Injection System Unavailability (C)	Residual Heat Removal System Unavailability (C)	END Drill Participation (C)		
Unplanned Power Changes (C)	Emergency System Unavailability (C)		Alarm and Notification System (C)		
	Regional Power Unavailability (C)				
	Unplanned Power Changes (C)				



Inspection Findings



Most Significant Inspection Findings

Quarter	Initiating Events	Mitigating Systems	Barrier Integrity	Emergency Preparedness	Occupational Radiation Safety	Public Radiation Safety
1Q/2006		G				
4Q/2005	G		G			
3Q/2005		G				
2Q/2005	G	G			G	

Miscellaneous findings

Section 3: Aging Management Review Results



- 3.1 Reactor Coolant System
- 3.2 Engineered Safety Features
- 3.3 Auxiliary Systems
- 3.4 Steam and Power Conversion Systems
- 3.5 Containments, Structures, and Component Supports
- 3.6 Electrical and I&C Components

Aging Management Programs (AMPs)



- 24 AMPs
 - 20 existing AMPs, 4 new AMPs
 - Consistent with GALL Report - 13
 - Consistent with GALL Report with exceptions/
enhancements – 10
 - Plant-specific – 1

Buried Services Corrosion Monitoring Program



- New AMP Consistent with GALL
 - 10-year frequency
 - If insufficient data exist, focused inspections will be performed
 - Include inspections of opportunity
 - Only one below-grade tank
 - Diesel fuel oil storage tank is contained in a vault and not exposed to soil

Bolting Integrity Program



- Existing AMP Consistent with enhancements (2)
 - (1) review and revise the ASME ISI master plan and plant maintenance procedures to reflect GALL Report guidance and
 - (2) evaluate high-strength bolting used in component supports for cracking
- System Monitoring Program
 - Non-Safety Related bolting
- Structural Monitoring Program
 - Structural bolting
- ASME Section XI IWB, IWC, IWD, IWF ISI Program
 - ASME Class 1, 2, and 3 bolting

Boric Acid Corrosion Program



- Enhancements were provided as commitments
- Three (3) Commitments
 - Revise procedures to include criteria for observing susceptible SSC for boric acid leakage and degradation during system walkdown inspections.
 - Revise procedures to include explicit acceptance criteria for boric acid inspections.
 - Revise procedures to include inspection of structural steel and non-ASME component supports for evidence of boric acid residue and boric acid wastage/corrosion.

Flow-Accelerated Corrosion Program



- Existing program consistent with GALL
- Proposed criteria less conservative for NSR piping
- NSR piping brought to same criteria as safety-related piping

Reactor Vessel (RV) Integrity Surveillance Program



- Enhancements were submitted as commitments
- Four (4) Commitments
 - Ensure that pressure-temperature and LTOP curves are updated to bound the extended operating period. Curves will be updated and submitted to NRC for approval prior to the period of extended operation
 - Document and establish the requirement to save and store all pulled and tested RV surveillance capsules for future reconstitution use.

Reactor Vessel (RV) Integrity Surveillance Program



- Four (4) Commitments (continued)
 - Ensure that at least one surveillance capsule remains in the RV and is tested during the period of extended operation to monitor the effects of neutron irradiation.
 - Develop a program level procedure to implement and control Technical Specification and FSAR activities associated with the RV Integrity Surveillance Program.

System Monitoring Program



- Plant specific AMP consistent with GALL AMP XI.M29, “Aboveground Carbon Steel Tanks”
- Used to identify degraded conditions on external surfaces of piping, tanks, and other components and equipment
- Opportunistic inspections of external surfaces when insulation is removed
- Commitment
 - If there is insufficient data, applicant will remove insulation in additional locations to increase sample size

Section 3: Aging Management Review Results



- 100% Review
 - 29 plant systems
 - 10 structures
 - 9 commodity groups



Auxiliary Systems

- SFP Neutron Absorbing Sheets
 - For fuel racks with boron carbide panels, no coupon program exists
 - Applicant has committed to performing industry approved neutron absorption testing to monitor for degradation.
- Thermal Sleeves
 - Aging effects requiring management added for cracking due to SCC and PWSCC
 - Managed with ASME Section XI ISI and Water Chemistry Programs

Aging Management of In-Scope Inaccessible Concrete



	Acceptance Criteria	PNP		
		1966	1996	2004
pH	>5.5	6.1 - 7.7	N/A	7.0
Chlorides	<500 ppm	4.0 - 39	23	139
Sulfates	<1500 ppm	9.47 - 33.17	15.2	11.5

- Below-grade environment is non-aggressive
- Periodic testing of ground water will be performed as part of the Structures Monitoring Program

Electrical and I&C Components



- 9 commodity groups reviewed
 - Electrical cables and connections not subject to 10 CFR 50.49 EQ requirements
 - Electrical cables and connections used in instrumentation circuits not subject to 10 CFR 50.49 EQ requirements that are sensitive to reduction in conductor IR
 - Electrical Portion of the Non-EQ Electrical and I&C Penetration Assemblies (Cables and Connections)
 - Fuse Holders
 - Non-Segregated Phase Bus and Connections
 - High-Voltage Transmission Conductors
 - High-Voltage Switchyard Bus and Connections
 - Inaccessible medium-voltage (2kV to 15kV) cables and connections not subject to 10 CFR 50.49 EQ requirements
 - High-Voltage Insulators

Section 4: Time-Limited Aging Analyses (TLAA)



- 4.1 TLAA Process
- 4.2 Reactor Vessel Neutron Embrittlement
- 4.3 Metal Fatigue
- 4.4 Environmental Qualification of Electrical Equipment
- 4.5 Concrete Containment Tendon Prestress Analysis
- 4.6 Containment Liner Plate and Penetrations Load Cycle
- 4.7 Plant Specific TLAA
 - 4.7.1 Crane Load Cycles
 - 4.7.2 Alloy 600 Nozzle Safe Ends Life Assessment Analysis
 - 4.7.5 Reactor Pump Fly Wheel Fatigue or Crack Growth Analysis
 - 4.7.6 Reactor Vessel Underclad Cracking (New TLAA)

Section 4 - Overview



- Section 4.2: Reactor Vessel and Internals Neutron Embrittlement
 - Three analyses affected by irradiation embrittlement identified as TLAAs
 - Pressurized Thermal Shock
 - Upper Shelf Energy
 - Pressure Temperature Limits
- Applicant used 42.37 EFPY (60 years)

Section 4 - Overview



- RV Pressurized Thermal Shock

Limiting Material for PTS	Screening Criteria	Calculated 42.37 EFPY RT_{PTS} value	Conclusion
Intermediate shell and lower shell axial welds (W5214)	270 °F	Applicant: 287 °F (Calculation Confirmed by Staff)	Screening Criterion is exceeded in 2014

Section 4 - Overview



- Palisades Plan for PTS
 - Continue to use an ultra low leakage core design
 - Submit final PTS resolution three years before 2014 (10 CFR 50.61)
- Options
 - Change of operation: further flux reduction and preheating the safety injection water
 - Thermal annealing of the reactor pressure vessel (10 CFR 50.66)

Section 4 - Overview



- RV Upper Shelf Energy (USE)

Limiting Plate and Weld for USE	Acceptance Criterion	Calculated USE Value for 42.37 EFPY	Conclusion
Lower shell plate (D-3804-1)	Projected USE > 50 ft-lbs	48.97 ft-lbs (Calculation Confirmed by Staff)	Acceptance criterion is exceeded in 2021
Intermediate to lower shell circ. Weld (9-112)	Projected USE > 50 ft-lbs	50.83 ft-lbs (Calculation Confirmed by Staff)	Acceptable [TLAA satisfies §54.21(c)(1)(ii)]

Section 4 - Overview



- Palisades Plan for USE
 - Submit Equivalent Margins Analysis (EMA) three years before 2021 (10 CFR 50, Appendix G)

Section 4.3: Metal Fatigue



- Acceptability Criterion: Cumulative Usage Factor, $CUF \leq 1.0$ for all ASME Class 1 piping components based on a 60-year life
- Fatigue Monitoring Program will ensure that the CUF remains ≤ 1 for PEO
- Staff accepted the evaluations in accordance with 10 CFR 54.21(c)(1)(i), (ii) and (iii)

Section 4.4: Environmental Qualification (EQ) of Electrical Equipment



- Applicant's EQ Program consistent with GALL AMP X.E1, "Environmental Qualification of Electrical Equipment"
- Staff concluded the EQ Program is adequate to manage the effects of aging on the intended function of electrical components
- The staff accepted the evaluation in accordance with 10 CFR 54.21(c)(1)(iii)

Reactor Vessel Underclad Cracking



- Confirmatory Item: Underclad Crack Growth
 - Technical basis is WCAP 15338-A which has been approved by the staff
 - Staff is verifying a plant specific WCAP, using the same methodology as WCAP 15338-A, for PNP

TLAA Summary



- TLAA list was complete and acceptable in accordance with 10 CFR 54.3
- 10 CFR 54.21(c)(1)
 - (i) analyses remain valid for PEO
 - (ii) analyses projected to the end of the PEO
 - (iii) effects of aging will be adequately managed for the PEO
- There are no plant-specific exemptions in accordance with 10 CFR 54.21(c)(2)



Conclusions

- The staff has concluded that there is reasonable assurance that the activities authorized by the renewed license will continue to be conducted in accordance with the CLB
- Any changes made to the PNP CLB are in accord with the Act and the Commission's regulations and to comply with 10 CFR 54.29(a)

Palisades Nuclear Plant

Presentation to Advisory Committee on Reactor Safeguards



November 1, 2006



Participants

- Paul Harden – Site Vice President
- Bob Vincent – License Renewal Project Manager
- Mark Cimock – Mechanical and Civil/Structural Lead
- Larry Seamans – Electrical Lead
- Bill Roberts – Programs Lead
- John Kneeland – TLAA Lead
- Brian Brogan – Site PRA / Safety Analysis Lead

Agenda

- Plant Description & Current Status
- Plant Modifications / Improvements
- License Renewal Project
- Technical Issues
 - Intergranular Separation
 - Pressurized Thermal Shock

Plant Description

- Owned by Consumers Energy Company
- Operated by Nuclear Management Company
- 432 Acre Site Located in Covert, Michigan
- Combustion Engineering NSSS / Bechtel AE
 - 2 Loops, 2 Steam Generators, 4 Primary Coolant Pumps
- Licensed Power 2565.4 Mwt.
- License expires March 24, 2011

Plant Description

- Pre-Stressed Concrete Containment
- Forced Draft Cooling Towers
- Ultimate Heat Sink is Lake Michigan via Service Water System
- Design Reviewed in NRC Systematic Evaluation Program
- Plant PRA Shows CDF (Internal Events) of $2.5E-05/\text{yr}$; LERF $3.55E-7/\text{yr}$

Current Plant Status

- **Running Well at 100% Power in 19th Cycle – 170 days on line**
- **Next Refueling Outage Fall 2007**
- **All 3Q NRC Performance Indicators are Green**
- **No NRC Inspection Findings >Green**

Major Plant Modifications/Improvements

- 1974-75 – Converted Once-Through Circulating Water to Cooling Towers, Retubed Condenser
- 1983 – Added Third Auxiliary Feedwater Pump and Upgraded System to Safety-Grade
- 1983 – Upgraded Control Room HVAC to Safety-Grade
- 1989 – Diversified Connection Paths to Offsite Power Supplies (PRA Insight)

Major Plant Modifications/Improvements

- 1990 – Replaced Steam Generators, Retubed Condenser and Feedwater Heaters
- 1993 – Implemented Dry Spent Fuel Storage
- 1995 – Modified Under-Reactor Vessel Floor Drains to Containment Sump (PRA Insight)
- 2003 – Implemented Risk-Informed Inservice Inspection Program
- 2006 – Installed Non-Safety Backup Diesel Generator (SAMA/PRA Insight)

License Renewal Project

- Staffed with Plant-Experienced Leads and LR-Experienced Support
- LRA Prepared to NEI 95-10 Standard Format Using GALL Rev 0 (2001)
- AMR Results Compared to GALL Rev 1 (2005)
- 24 Aging Management Programs (4 new, 20 existing)
- Program Descriptions, TLAA Descriptions, and Commitments will be Incorporated Into FSAR
- Project Team Continuing With Implementation

Technical Issues

- Intergranular Separation
- Pressurized Thermal Shock

Intergranular Separation (Under-Clad Cracking)

- Generic Industry Question in 1970s – Acceptable for 40 Years
- Westinghouse Evaluated for 60 Years in WCAP-15338 (NRC Accepted Methodology and Results)
- Palisades Evaluated Using Same Methodology
- Palisades Results Consistent with WCAP-15338
 - Little/No Growth Over 60 Years
 - No Effect on Structural Integrity
- Results Accepted by NRC

Pressurized Thermal Shock (PTS)

- Reach 10 CFR 50.61 Screening Criterion in 2014
- Aggressive Flux Reduction Implemented by Ultra-low Leakage Core Design
- Participant in NRC Research Program Developing Updated Technical Methodology
- Alternatives are Available to Manage Issue for Period of Extended Operation
- Proposed 10 CFR 50.61 Rule Change may Preclude Need for Plant-Specific Management Strategy



Backup Slides



Inspection of Small-Bore Piping

- **RI-ISI Examines Selected Small-bore ASME and Non-ASME Class Piping**
 - 4 Class 1 HSS Butt Welds Examined Volumetrically Each 10 Year Interval
 - 100% HSS Socket Welds Examined VT-2 Each Cycle
- **Small-bore Class 1 Weld Population - 60 Butt Welds and 359 Socket Welds**
- **For License Renewal, 10% of Class 1 Butt Welds will be Volumetrically Examined as One-Time Inspection prior to Extended Operating Period**

Possible Strategies for Management of PTS

- Exemption Based on Master Curve Technology for Determining Fracture Toughness
- Change to 10 CFR 50.61 (Rulemaking Initiated)
- Safety Analysis (R.G. 1.154) to Evaluate Actions That Would Assure Reactor Vessel Integrity during PTS if Continued Operation Permitted
 - e.g., Heating of Safety Injection Water
- Annealing
- Further Flux Reduction

Palisades Nuclear Plant

