



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

April 10, 2006

MEMORANDUM TO: ACRS Members

FROM: John G. Lamb, Senior Staff Engineer,
Technical Support Staff
ACRS/ACNW

SUBJECT: CERTIFIED COPY OF THE MINUTES OF THE ACRS SUBCOMMITTEE
MEETING ON THE NINE MILE POINT NUCLEAR STATION, UNITS 1
AND 2 LICENSE RENEWAL APPLICATIONS, APRIL 5, 2006 -
ROCKVILLE, MARYLAND

A certified copy of the minutes for the subject meeting is attached for your information.

Attachments: Certification Letter
Minutes (CERTIFIED)

cc w/o Attachment:

J. Larkins
A. Thadani
M. Snodderly
S. Duraiswamy



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

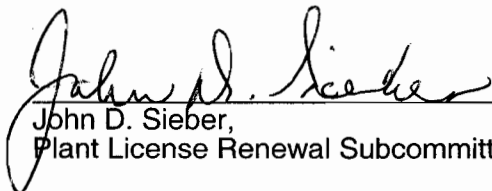
April 7, 2006

MEMORANDUM TO: John G. Lamb, Senior Staff Engineer,
Technical Support Staff
ACRS/ACNW

FROM: John D. Sieber, Chairman
ACRS Plant License Renewal Subcommittee

SUBJECT: CERTIFICATION OF THE MINUTES OF THE ACRS SUBCOMMITTEE
MEETING ON THE NINE MILE POINT NUCLEAR STATION, UNITS 1
AND 2 LICENSE RENEWAL APPLICATIONS, APRIL 5, 2006 -
ROCKVILLE, MARYLAND

I hereby certify, to the best of my knowledge and belief, that the minutes of the subject meeting on April 5, 2006, are an accurate record of the proceedings for that meeting.

 4-7-06
John D. Sieber, Date
Plant License Renewal Subcommittee Chairman



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

April 7, 2006

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

FROM: John G. Lamb, Senior Staff Engineer,
Technical Support Staff
ACRS/ACNW

SUBJECT: WORKING COPY OF THE MINUTES OF THE ACRS SUBCOMMITTEE
MEETING ON THE NINE MILE POINT NUCLEAR STATION, UNITS 1
AND 2 LICENSE RENEWAL APPLICATIONS, APRIL 5, 2006 -
ROCKVILLE, MARYLAND

A working copy of the minutes for 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.

Attachments: Certification Letter
Minutes (DRAFT)

cc w/o Attachment:

J. Larkins
A. Thadani
M. Snodderly
S. Duraiswamy

CERTIFIED 04/07/06
Issued Draft 04/07/06

**ADVISORY COMMITTEE ON REACTOR SAFEGUARDS
MINUTES OF THE ACRS PLANT LICENSE RENEWAL SUBCOMMITTEE MEETING
ON THE NINE MILE POINT, UNITS 1 AND 2
APRIL 5, 2006
ROCKVILLE, MARYLAND**

On April 5, 2006, 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 Nine Mile Point (NMP), Units 1 and 2 license renewal applications and the associated Safety Evaluation Report (SER).

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. John G. Lamb was the Designated Federal Official for this meeting. The meeting was convened at 8:30 a.m. and adjourned at 11:44 a.m. on April 5, 2006. Dr. Wallis and Dr. Shack left the meeting at 10:30 am to attend the Projects & Planning Subcommittee meeting. Dr. Wallis and Dr. Shack returned at 11:25 a.m. to the meeting. Dr. Kress left the meeting at the break.

ATTENDEES:

ACRS MEMBERS/STAFF

John Sieber, Chairman
Mario Bonaca, Member
William Shack, Member
Tom Kress, Member
John G. Lamb, ACRS Staff

Graham Wallis, Member
Otto Maynard, Member
Sam Armijo, Member
John Barton, Consultant

NRC STAFF/PRESENTERS

P.T. Kuo, NRR
N. Le, NRR
K. Chang, NRR
D. Ashley, NRR
M. Mitchell, NRR
A. Lee, NRR
M. Hartzman, NRR
R. Subbaratnam, NRR
E. Forrest, NRR
R. Aulude, NRR
P. Patniak, NRR
L. Tran, NRR
C. Li, NRR
G. Chermvenki, NRR
K. Hsu, NRR
J. Zimmerman, NRR
J. Rajan, NRR
D. Hodna, NRR
H. Hamzehee, NRR
J. Fair, NRR
P. Wen, NRR
R. Matthew, NRR

M. Modes, RI
J. Storch, OIG
J. Davis, NRR
K. Tanube, NRR
M. Heath, NRR
G. Cranston, NRR
L. Fields, NRR
H. Asher, NRR
J. Rowley, NRR
N. Iqbal, NRR
Y. Li, NRR
G. Meyer, RI
J. Medoff, NRR
A. Stubbs, NRR
S. Mitra, NRR
B. Rodgers, NRR
J. Eads, NRR
N. Haggerty, NMSS
D. Merzke, NRR
D. Nguyen, NRR
D. Jeng, NRR

OTHER ATTENDEES

T. O'Connor, CEG	M. Flaherty, CEG
D. Dellario, CEG	P. Mazzaferro, CEG
L. Larragoite, CEG	R. Randall, CEG
R. Dean, CEG	M. Fallin, CEG
K. Haws, CEG	D. Goodney, CEG
G. Inch, CEG	C. Senska, CEG
J. Poehler, CEG	R. Gilray, CEG
M. Gallagher, Exelon	M. Alexsey, NMC
R. Siepel, NMC	J. Rootes, NMC
J. Pairitz, NMC	R. Dennis, NMC
P. Burks, NMC	J. O'Rourke, AmerGen
J. Hufnagel, Exelon	D. Warfel, Exelon
F. Polasia, Exelon	S. Dort, FENOC
R. Rucker, FENOC	C. Marks, ISL
C. Myer, Southern Nuclear	

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

Mr. John D. Sieber, 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 Constellation Energy Group (CEG), the operating licensee, license renewal applications (LRAs) for NMP Units 1 and 2 and the associated SER. Mr. Sieber called upon Dr. P.T. Kuo of the Office of Nuclear Reactor Regulation (NRR) to begin the discussion.

Staff Introduction

Mr. Jake Zimmerman of NRR made some introductory remarks, introduced the principal staff members present, then he turned the presentation over to the licensee.

Nine Mile Point License Renewal Applications

Background

By letter dated May 26, 2004 (ADAMS Accession Nos. ML041490213, ML041490223, ML041490224, ML041490225, ML041490227, and ML041490229), CEG submitted the LRA for NMP in accordance with Title 10, Part 54, of the *Code of Federal Regulations* (10 CFR Part 54). CEG is requesting renewal of the operating licenses for NMP Units 1 and 2, (Facility Operating License Numbers DPR-63 and NPF-69, respectively) for a period of 20 years beyond the current expiration dates of August 22, 2009, for Unit 1; and October 31, 2026, for Unit 2. By letter to CEG, dated December 7, 2004 (ADAMS Accession No. ML043450440), the staff stated its concern regarding the applicant's inadequate support of license renewal activities for the initial submission. In its response, by letter dated January 3, 2005 (ADAMS Accession No. ML050120217), the applicant stated that it had taken additional actions to resolve the contributing factors for past performance and agreed to provide supplemental support for the license renewal process. On March 7, 2005, the staff informed the applicant, by letter (ADAMS Accession No. ML050660147), that the review of the LRA had been suspended and that the standard 22-month review schedule would not be met due to the suspended period. On July 14, 2005, CEG submitted its amended LRA (ALRA) (ADAMS Accession No. ML052000186).

Plant Description

NMP nuclear station is located on the southeastern shore of Lake Ontario in the Town of Scriba, Oswego County, New York. The site is in a rural area approximately five miles northeast of Oswego, 36 miles north northwest of Syracuse, and 65 miles east of Rochester, New York. Syracuse is the largest city within 50 miles of NMP. NMP consists of two nuclear plants on approximately 900 acres. Both NMP reactors are General Electric (GE) designed Boiling Water Reactors (BWRs). The licensed thermal capacity is 1850 megawatts thermal (MWt) for NMP Unit 1 and is 3467 MWt for NMP Unit 2. The steam and power conversion system, including its turbine generator, is designed to permit generation of a net electrical output of approximately 615 MWe for NMP Unit 1 and 1144 MWe for NMP Unit 2. NMP Unit 1 is a BWR2 Mark I containment and NMP Unit 2 is a BWR5 Mark II containment.

Recent Operating Experience and Plant Improvements

Plant performance for the fourth quarter of 2005, as well as for the first three quarters of 2005, was within the Licensee Response column of the NRC's Action Matrix, based on all inspection findings being classified as having very low safety significance (Green) and all Performance Indicators indicating performance at a level requiring no additional NRC oversight (Green).

Licensee Presentation

Mr. Tim O'Connor, Vice President of NMP, greeted the Subcommittee and introduced accompanying members of the CEG staff: Mr. Mark Flaherty, Mr. David Dellario, and Mr. Pete Mazzaferro. The licensee presented an overview of the presentation agenda. The licensee gave a description of NMP.

The licensee presented the license renewal recovery project. CEG recognized that the NRC identified quality concerns with the initial LRA submitted on May 26, 2004. CEG requested a grace period to improve LRA quality and submit an ALRA on July 14, 2005 to facilitate NRC review. CEG performed a root cause analysis and determined the following problem areas: isolationism, management engagement, and lack of resources. CEG assigned the LRA to fleet licensing and established a new Fleet Director position. CEG established extensive checks and balances to monitor key performance indicators, to hold weekly management status meetings, and to hold periodic meetings with the Chief Nuclear Officer and President. NMP staff were assigned to the LRA project, provided weekly status updates to the site vice president, and daily updates to the engineering manager. The LRA team performed benchmarking, used a senior licensing consultant, performed internal and external assessments, and used challenge boards to review project products. The LRA team focused on NRC questions and Aging Management Programs (AMPs). CEG submitted the ALRA on July 14, 2005, addressed NRC-identified quality concerns, accelerated transfer of LRA knowledge to NMP, and successfully completed the audit and inspection.

NMP Unit 1 replaced Reactor Recirculation System piping with resistant material. Tie rod and clamp repairs were performed on the NMP Unit 1 Core Shroud. NMP Unit 1 replaced Emergency Condenser tubing with resistant material. NMP Unit 1 RBCLC threaded pipe was replaced by heavier wall welded construction. NMP Unit 1 performed roll repairs on the Control Rod Drive stub tube. NMP Unit 1 replaced the 115 kV Reserve Station Service Transformers and Switchyard Disconnect switches. NMP Unit 2 Core Shroud was acceptable by inspections and evaluation.

Identified and repaired tube leaks in NMP Unit 1 Emergency Condenser in 1997. NMP Unit 1 Emergency Condenser are all welded construction. The bases for not performing eddy current testing are (1) the conditions and stressors that were precursors to stress corrosion cracking (SCC) have been eliminated: lowered temperature of tube and shell side water, maintaining water chemistry on the tube and shell side, susceptibility of tubes to SCC reduced by modifications, use of 316L stainless steel tubes and tubesheets, and installation of a Keep Fill System to keep tubes flooded to eliminate thermal cycles; (2) monitoring and detection to ensure adverse conditions will not recur: temperature, water chemistry, and radiation from

vents; (3) tube leak test to assure heat transfer intended function is not compromised; and (4) periodic performance testing of the heat exchangers.

The staff approved use of roll repairs via an SER, dated March 25, 1987 for NMP Unit 1CRD stub tubes. ASME approval of Code Case -730 is pending for the roll repair methodology. If during the period of extended operation (PEO), a rolled stub tube re-leaks, one of the following zero leakage repairs will be implemented: (1) welded repair consistent with BWRVIP-58A as endorsed by the staff in Regulatory Guide 1.147, (2) variation of the welded repair geometry specified in BWRVIP-58A, using Code Case -606-1, subject to staff approval, and (3) a future developed mechanical/welded repair method subject to staff approval.

CEG implemented Noble Metal Chemical Addition and hydrogen water chemistry at NMP Units 1 and 2 in 2001. NMP Unit 2 is to be re-racked in 2007 eliminating the use of Boraflex. CEG plans to implement the use of corrosion inhibitors in selected NMP Unit 1 and 2 Closed Cycle Cooling Water systems prior to entry into the PEO.

CEG has 43 AMPs credited in the ALRA. The 43 AMPs are aligned to GALL Revision 1 and includes 8 new programs.

NMP commitments are managed and tracked via the Nuclear Commitment Tracking system (NCTS). NMP senior management monitors commitments weekly. There are 54 license renewal commitments. 41 NMP Unit 1 commitments are to be implemented by 2 years prior to entry into PEO. 39 NMP Unit 2 commitments are to be implemented following NMP Unit 1.

Staff Presentation

Safety Evaluation Report Overview

Mr. Tommy Le, Project Manager for NRR, introduced several members of the staff including Mr. Robert Hsu, Dr. Ken Chang, and Mr. Michael Modes.

Mr. Le led the staff's presentation of the SER, the scoping and screening review, the AMP reviews and audits, and the time-limited aging analyses (TLAAs).

The SER was issued on March 3, 2006 (ADAMS Accession No. ML060580758), containing two open items, no confirmatory items, and three proposed license conditions. Mr. Le listed the dates of the audits and inspections performed by the staff.

Scoping and Screening

Mr. Le described the Scoping and Screening. The audit identified issues in the scoping and screening methodology that were resolved through Request for Additional Information (RAI) and amended application due to non-safety related equipment affecting safety-related equipment. The licensee performed an evaluation of the plant insulation.

Plant level scoping resulted in 14 new systems being added, and 3 previously included systems were removed. The licensee provided new and revised license renewal drawings. The ALRA clearly identified structures, systems, and components (SSCs) within the scope of license renewal and subject to AMR. The ALRA now uses standard component types and component intended function consistent with SRP-LR and NEI-95-10 to identify SSCs in scope of LR and subject to AMR. All issues were resolved in the ALRA and the staff concludes the licensee's methodology satisfies the rule pursuant to 10 CFR 54.4(a)(1), (a)(2).

The staff concluded the licensee's scoping methodology meets the requirements of 10 CFR Part 54.

Aging Management Program Review and Audits

Mr. Le of NRR stated that there are 54 commitments: 14 for Unit 1, 13 for Unit 2, and 27 common to both Units. The Audit resulted in 5 new AMPs and 23 new commitments. There are a total of 43 AMPs at NMP: 7 are plant specific, 9 are consistent with GALL, 9 are consistent with the GALL Report with exceptions, 13 are consistent with the GALL Report with enhancements, and 5 are consistent with GALL with exceptions and enhancements.

A new bolting integrity AMP was added as a result of the Audit team's AMR review for closure bolting. The licensee has made commitments for this new AMP.

The BWR Vessel Internals AMP is consistent with GALL with enhancements. The Reactor Vessel Surveillance Program (RVSP) manages loss of fracture toughness due to neutron irradiation embrittlement in the RV beltline materials. The RVSP is based on the integrated surveillance program criteria in BWRVIP-78 and BWRVIP-86. The RVSP will be enhanced to include conformance with the updated integrated surveillance program criteria in BWRVIP-116.

Originally, NMP Unit 1 CRD stub tubes were repaired by roll/expansion techniques with an allowance for some amount of RCPB leakage. The licensee plans to implement Code Case - 730 if it is approved by the staff. The licensee will implement a zero leakage permanent repair.

The licensee revised the Boraflex Monitoring Program to include performance of periodic neutron attenuation testing and measurements of boron areal density for NMP Unit 1 through the audit process. The licensee will replace all Boraflex panels in Unit 2 with Boral panels prior to PEO.

The design of the NMP Unit 1 Emergency (Isolation) Condensers (ECs) features end bells welded to the EC shell that are not designed to be removed; therefore, eddy current testing of the tubing as recommended by GALL is not possible. During audit and review, the licensee provided its basis for not performing eddy current testing and committed to implement a leakage test to detect small leaks.

Originally, the licensee claimed no inaccessible medium-voltage cables were within scope of the license renewal. The Audit Team identified at least one underground cable within scope for Unit 2. The licensee later identified a total of 18 cables requiring an AMP. Based on the audit team's inspection, the licensee developed a new AMP on non-EQ inaccessible medium-voltage cables to be implemented prior to PEO.

The staff discussed open item 3.0.3.2.17-1.

Open Item 3.0.3.2.17-1

Subsequent to the onsite audit and review of NMP ALRA, the staff also reviewed the applicant's Inservice Inspection Owner Activity Report, dated July 23, 2003. In this report, the applicant has stated that, for NMP1, corrosion was identified over the entire 360 degree circumference of the drywell interior surface of the liner plate at the 225 foot elevation. The applicant further stated in the report that (1) a subsequent detailed (D-VT) visual examination (VT-1) was performed and that (2) no unacceptable degradation in the visible areas of the drywell liner was found and that (3) no immediate corrective action was taken. The staff has asked the applicant to provide further discussion to address the staff concern regarding the loss of material due to corrosion for the NMP1 drywell.

Onsite Inspection Results

Mr. Modes , Region I, described the license renewal inspections performed by the staff. The objective of the scoping and screening inspection is to confirm that the applicant has included all SSCs within the scope of license renewal as required by the rule. The inspection walked down 16 systems. The staff inspection found that the licensee license renewal activities were being implemented as described in the licensee's LRA. The NMP Nuclear Station methodology

for determining compliance with 10 CFR 54.4 (a)(2), as described in the application, appears to be rigorous enough to identify all the systems, structures, and components that should be within scope.

The objective of the AMP inspection is to confirm that existing AMPs are managing current age-related degradation. The staff reviewed 22 programs and discovered 15 open items within 5 programs. The Inspection Team concluded all open items were satisfactorily resolved and closed out as presented in the Inspection Report. In the case of the AMPs, the staff was able to conclude that the programs will reasonably manage the effects of aging.

Mr. Modes stated that the licensee has Green Performance Indicators and Inspection Findings.

Time Limited Aging Analyses

Mr. Chang of NRR described the staff's review of Time-Limited Aging Analysis (TLAAs). As part of the license renewal inspections, the staff reviewed six TLAAs programs: RV Neutron Embrittlement, Containment Liner Plate and Penetration Fatigue Analysis, Concrete Containment Tendon Prestress, Environmental Qualification (EQ), and other Plant Specific TLAAs. All analyses are acceptable for RV Neutron Embrittlement. The licensee committed to implement FatiguePro monitoring software for Metal Fatigue. The EQ program together with other plant programs will adequately manage aging effect during PEO for EQ of Electrical Equipment. The licensee performed an adequate evaluation of the Containment Liner Plate, Metal Containment and Penetration Fatigue Analysis to demonstrate that fatigue usage not exceeded during PEO.

The staff discussed Open Item 4.7B.1-1.

Open Item 4.7B.1-1

The neutron fluence methodology for TLAA Section 4.7.1, "RPV Biological Shield (NMP2 Only)," is based on neutron fluence calculations that have been reported in SANDIA Report No. SAND 92-2420, "Accelerated 54 °C Irradiated Test of Shippingport Neutron Shield Tank and HFIR Vessel Materials [January 1993]." However, the methodology for calculating the neutron fluence values reported in SANDIA Report No. SAND 92-2420 has not been approved by the staff. Therefore, the staff requested that CEG submit an updated 54 EPFY neutron fluence calculation for the biological shield wall (BSW) during the NRC's allocated review period for the amended license renewal application. The staff also requested that the 54 EPFY neutron fluence calculation be based on a methodology that conforms to the NRC's recommendations in Regulatory Guide 1.190, "Calculational and Dosimetry Methods for Determining Pressure Vessel Neutron Fluence [March 2001]," and be submitted for the staff's review and approval.

The TLAA evaluation for NMP Unit 2 Bioshield was not based on NRC-approved methodology. The licensee submitted a letter dated March 23, 2006 that provides the summary results of a new analysis and withdrew the Bioshield TLAA 4.7B.1.

The staff stated the TLAA list is adequate, analyses remain valid for PEO, analyses projected to the end of PEO, and aging effects will be adequately managed for PEO.

Conclusion

Mr. Le concluded by stating that there is reasonable assurance that activities will continue to be conducted in the renewal term in accordance with the current licensing basis.

Member Comments

Dr. Shack

Dr. Shack stated that PRA risk is high at NMP for a Station Blackout (SBO) event and he asked about the Emergency Diesel Generator (EDG) configuration at the plant. The licensee stated there are 3 EDGs for each unit. Dr. Shack asked what is the material of the recirculation piping. The licensee responded it is 316L for NMP Unit 2 and 316 nuclear grade for NMP Unit 1. Dr. Shack asked if the tie rods were equivalent to a weld. The licensee responded the vertical weld clamps provide full structural replacement. Dr. Shack asked if all the welds were accessible at the bottom of the NMP Unit 1 Core Shroud. The licensee responded that 100% is accessible from the top surface and the bottom surface is limited. The licensee deployed a crawler with UT and was able to achieve 80% coverage.

Dr. Shack stated the licensee has done a pretty good job with the reactor internals and materials and have been aggressive in water chemistry.

Dr. Shack did not see a need for an interim letter.

Dr. Wallis

Dr. Wallis stated there was 30% cracking of some welds on NMP Unit 1 core shroud. He asked for an explanation and what is the message. The licensee explained the phenomena of he cracking and said they understood the mechanism. Dr. Wallis asked how the licensee knows there is no indications on the outside of the NMP Unit 1 drywell. The licensee used a remote visual device and found no indications of leakage. Dr. Wallis stated the licensee inspects coatings at each outage. This visual inspection looks for peeling, cracking, delamination, etc. It is supposed to ensure that the coatings do not come off during a LOCA. By the time that the coatings peel, they are about ready to fall off. Dr. Wallis does not understand this attitude. Dr. Wallis asked about steam dryer cracking and if all the technical issues have been resolved. The licensee inspects and repairs cracks in the steam dryers. The licensee and the staff have come to resolution on all steam dryer technical issues. Dr. Wallis stated the licensee is fulfilling the requirements of license renewal.

Dr. Wallis did not see a need for an interim letter.

Dr. Bonaca

Dr. Bonaca asked if each EDG is designed to support one safety bus. The licensee responded that they believed that was true. Dr. Bonaca asked if the licensee had any water leaks from the refueling seals. The licensee has not had any leaks from the refueling seals. Dr. Bonaca asked about the licensee plans for dry cask storage. The licensee will begin planning for dry cask storage in 2008. Dr. Bonaca asked why the core shroud is not a TLAA. The reason is because it is part of the BWRVIP. Dr. Bonaca recognized the staff discovery of problems and he believes the open items are appropriate. He stated the SER is complete.

Dr. Bonaca did not see a need for an interim letter.

Mr. Maynard

Mr. Maynard asked when construction was started on NMP Unit 2. The licensee said in the 1970's. Mr. Maynard asked the licensee what actions they took with the corrosion areas inside the drywell liner. The licensee cleaned the areas and performed UT. Mr. Maynard asked if the licensee has full core off load capability. The licensee has full core off load capability. Mr. Maynard stated the licensee took actions to correct the quality problems in the beginning of the review. He said the staff review was thorough and they did a good job. He said the licensee took appropriate actions regarding the EC issues.

Mr. Maynard did not see a need for an interim letter.

Dr. Armijo

Dr. Armijo said the licensee and staff did a thorough job. He said the leak test of the EC may be better than the eddy current testing.

Dr. Armijo did not see a need for an interim letter.

Mr. Barton

Mr. Barton asked if a power uprate was performed. The licensee said there was a power uprate on NMP Unit 2 in 1995 for 4.3%. Mr. Barton wondered how CEG had a sub par original LRA when they had consultants and performed the Calvert Cliffs License Renewal. The licensee said they rested on Calvert Cliffs success. Mr. Barton asked how does all the plant personnel know the goals. The licensee said they use letters, face-to-face meetings, small group meetings, and follow-up meetings. Mr. Barton asked if the licensee replaced all the tubes in the EC and the licensee said yes. Mr. Barton asked if the drywell liner was coated inside at the 225' elevation. The licensee said the liner was not coated at that elevation. Mr. Barton asked why the Unit 1 city water was in-scope for license renewal. The licensee responded that the non-safety-related city water piping is in the vicinity of safety-related piping and could have an impact. Mr. Barton asked about a service water tunnel leak that was repaired. The licensee said the service water piping inside the tunnel are in an AMP and is inspected every two years.

Mr. Barton did not see a need for an interim letter.

Mr. Sieber

Mr. Sieber expressed his concern about NMP isolationism as a root cause for their poor quality original LRA. Mr. Sieber asked for assurance from the licensee that isolationism has not entered into daily plant operations and maintenance. The licensee assured the Committee that they have learned a lesson and will not repeat it. Mr. Sieber asked if the licensee has a plant newspaper and have "All-Hands" meetings. The licensee has All-Hands meetings once a month and have a plant newspaper. Mr. Sieber asked about the large number of RAIs. There were 324 RAIs but most were before the ALRA. Mr. Sieber expressed concern regarding the EC design that does not allow Eddy Current testing and the licensee cannot predict when the tubes will reach minimum wall according to the B31.1, "Power Piping code." The licensee stated that they eliminated the stressor which was thermal cycling by installing a "Keep Fill" system.. Mr. Sieber stated the CRD stub tube repair will be difficult to perform and the licensee agreed. Mr. Sieber expressed concern that the licensee does not know the corrosion rate of the inside drywell liner. The licensee assumed the liner is corroding at the torus corrosion rate of 1.25 mils per year and predict the liner has 45 years until it reaches minimum wall. Mr. Sieber agreed that this should be an open item. Mr. Sieber asked if the licensee had qualified coating inside containment and the licensee said that they do. Mr. Sieber said the ALRA is satisfactory and thorough. He said the staff SER used good judgement and is well written.

Mr. Sieber did not see a need for an interim letter.

Subcommittee Decisions and Follow-up Actions

The Subcommittee Chairman will summarize the discussions to the full Committee during the April 2006 ACRS meeting.

Background Materials Provided to the Committee

1. Safety Evaluation Report with Open Items Related to the License Renewal of the Nine Mile Point Nuclear Station, Units 1 and 2, dated March 3, 2006 (ADAMS Accession No. ML060580758)
2. Nine Mile Point Nuclear Station, Units 1 and 2 - Application for Renewed Operating Licenses, dated May 26, 2004 (ADAMS Accession Nos. ML041490213, ML041490223, ML041490224, ML041490225, ML041490227, and ML041490229)
3. Nine Mile Point Nuclear Station, Units 1 and 2 - Amended Application for Renewed Operating Licenses, dated July 14, 2005 (ADAMS Accession No. ML052000186)
4. Audit and Review Report for Plant Aging Management Programs (AMPs) and Aging Management Reviews (AMRs) - Nine Mile Point Nuclear Station, dated January 5, 2006 (ADAMS Accession No. ML060110119)
5. Nine Mile Point Nuclear Station, Inspection Report 05000220/20050011; AND 05000410/20050011, dated March 2, 2006 (ADAMS Accession No. ML060610616).

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).

Dated: March 16, 2006.
Andrew L. Bates,
Advisory Committee Management Officer.
[FR Doc. E6-4193 Filed 3-22-06; 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 April 5, 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:

Wednesday, April 5, 2006—8:30 a.m.—12 Noon

The purpose of this meeting is to discuss the License Renewal Application for Nine Mile Point 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, Constellation Energy Group, 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. John G. Lamb (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 7:30 a.m. and 4:15 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: March 16, 2006.
Michael R. Snodderly,
Acting Branch Chief, ACRS/ACNW.
[FR Doc. E6-4194 Filed 3-22-06; 8:45 am]
BILLING CODE 7590-01-P

NUCLEAR REGULATORY COMMISSION

Notice of Availability of Model Application Concerning Technical Specifications for Boiling Water Reactor Plants to Risk-Inform Requirements Regarding Selected Required Action End States Using the Consolidated Line Item Improvement Process

AGENCY: Nuclear Regulatory Commission.
ACTION: Notice of availability.

SUMMARY: Notice is hereby given that the staff of the Nuclear Regulatory Commission (NRC) has prepared a model application related to the revision of Boiling Water Reactor (BWR) plant required action end state requirements in technical specifications (TS). The purpose of this model is to permit the NRC to efficiently process amendments that propose to revise BWR TS required action end state requirements. Licensees of nuclear power reactors to which the model applies may request amendments utilizing the model application.

DATES: The NRC staff issued a **Federal Register Notice** (70 FR 74037, December 14, 2005) that provided a model safety evaluation (SE) and a model no significant hazards consideration (NSHC) determination relating to changing BWR TS required action end state requirements. The NRC staff hereby announces that the model SE and NSHC determination may be referenced in plant-specific applications to adopt the changes. The staff has posted a model application on the NRC Web site to assist licensees in using the consolidated line item improvement process (CLIP) to revise the BWR TS required action end state requirements. The NRC staff can most efficiently consider applications based upon the model application if the application is submitted within a year of this **Federal Register Notice**.

FOR FURTHER INFORMATION CONTACT: T. R. Tjader, Mail Stop: O12H2, Division of Inspection and Regional Support, Office of Nuclear Reactor Regulation, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, telephone 301-415-1187.

SUPPLEMENTARY INFORMATION:

Background

Regulatory Issue Summary 2000-06, "Consolidated Line Item Improvement Process for Adopting Standard Technical Specification Changes for Power Reactors," was issued on March 20, 2000. The Consolidated Line Item

Improvement Process (CLIP) is intended to improve the efficiency of NRC licensing processes. This is accomplished by processing changes to the standard TS (STS) in a manner that supports subsequent license amendment applications. The CLIP includes an opportunity for the public to comment on proposed changes to the STS following a preliminary safety assessment by the NRC staff and finding that the change will likely be offered for adoption by licensees. The CLIP includes NRC staff evaluation of any comments received for a proposed change to the STS, and either a reconsideration of the change or an announcement of the availability of the change for adoption by licensees. Those licensees opting to apply for the subject change to their TS are responsible for reviewing the staff's evaluation, referencing the applicable technical justifications, and providing any necessary plant-specific information. Each amendment application made in response to the notice of availability will be processed and noticed in accordance with applicable rules and NRC procedures.

This notice involves the revision of BWR TS required action end state requirements. This change was proposed for incorporation into the STS by participants in the Owners Groups Technical Specification Task Force (TSTF) and is designated TSTF-423, Revision 0. TSTF-423, as well as the NRC staff's safety evaluation and model application, may be examined, and/or copied for a fee, at the NRC's Public Document Room, located at One White Flint North, 11555 Rockville Pike (first floor), Rockville, Maryland. Publicly available records are accessible electronically from the ADAMS Public Library component on the NRC Web site, (the Electronic Reading Room). TSTF-423, the NRC staff's safety evaluation, and the model application, can be viewed on the NRC Web site at: (<http://www.nrc.gov/reactors/operating/licensing/techspecs.html>).

Applicability

This proposal to modify technical specification requirements by the adoption of TSTF-423 is applicable to all licensees of BWR plants who have adopted or will adopt, in conjunction with the change, technical specification requirements for a Bases control program consistent with the TS Bases Control Program described in Section 5.5 of the BWR STS. Licensees that have not adopted requirements for a Bases control program by converting to the improved STS or by other means, are requested to include the requirements

**Advisory Committee on Reactor Safeguards
Plant License Renewal Subcommittee Meeting
Nine Mile Point Nuclear Station, Units 1 and 2
April 5, 2006
Rockville, MD**

-PROPOSED SCHEDULE-

Cognizant Staff Engineer: John G. Lamb JGL1@NRC.GOV (301) 415-6855

Topics	Presenters	Time
Opening Remarks	J. Sieber, ACRS	8:30 am - 8:35 ^y pm
Staff Introduction <i>J. Zimmerman</i>	P.T. Koo , NRR	8:35 ^y am - 8:40 ²⁶ am
Nine Mile License Renewal Application A. Application Background B. Description of Nine Mile C. Operating History D. Scoping Discussion E. Application of GALL F. Commitment Process	Constellation	8:40 ³⁶ am - 9:40 ⁵⁷ am
Break		9:40 ⁵⁷ am - 9:55 ^{10:15} am
SER Overview A. Scoping and Screening Results B. Onsite Inspection Results	NRR Region I	9:55 ^{10:15} am - 10:15 ²⁶ am
Aging Management Program Review and Audits	NRR	10:15 ²⁶ am - 11:00 ¹¹ am
Time-Limited Aging Analyses	NRR	11:00 ¹¹ am - 11:30 ²⁶ am
Subcommittee Discussion	J. Sieber, ACRS	11:30 ²⁶ am - 12:00 ^{11:44} 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

April 5, 2006
Date

PLEASE PRINT

	<u>NAME</u>	<u>AFFILIATION</u>
1	MIKE GALLAGHER	EXCEL
2	MIKE ALEKSEY	NMC - Monticello
3	RONALD SIEPEL	NMC - Monticello
4	JAMES L ROOTES	NMC - MONTICELLO
5	Raymond J Dean	Constellation - NMP
6	George INCH	Constellation - NMP
7	DALE GOODNEY	CONSTELLATION - NMP
8	KEN HAWS	CONSTELLATION
9	CARL SENSKA	CONSTELLATION - NMP
10	JEFF POEHLER	Constellation - Corp. Eng.
11	ROBERT RANDALL	CONSTELLATION - GINNA
12	Joe Pairitz	NMC - Monticello
13	Ray Dennis	NMC - Monticello
14	Pat Bures	NMC - Monticello
15	Peter Mazzaferro	Constellation Energy - NMP
16	Mark Flaherty	Constellation Energy
17	Tim O'Connor	Constellation Energy - NMP
18	David Dellario	Constellation Energy
19	Michael Fallin	Constellation Energy
20	Renee Gilroy	Constellation Energy

ADVISORY COMMITTEE ON REACTOR SAFEGUARDS
SUBCOMMITTEE MEETING ON PLANT LICENSE RENEWAL

April 5, 2006
Date

PLEASE PRINT

	<u>NAME</u>	<u>AFFILIATION</u>
1	JOHN O'ROURKE	Amergen - Oyster Creek
2	John Hufnagel	Exelon - Oyster Creek
3	Don Warfel	EXELON - Oyster Creek
4	Fred Polaski	EXELON
5	STEVE DORT	FIRST ENERGY - BEAVER VALLEY
6	Roger Rucker	First Energy - Beaver Valley
7	Chalme-Myer	Southern Nuclear - Vogtle
8	ROY MATHEW	NRC
9	CLIFF MARKS	ISL
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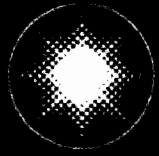
ADVISORY COMMITTEE ON REACTOR SAFEGUARDS
SUBCOMMITTEE MEETING ON PLANT LICENSE RENEWAL

April 5, 2006
Date

NRC STAFF SIGN IN FOR ACRS MEETING

PLEASE PRINT

<u>NAME</u>	<u>NRC ORGANIZATION</u>
DANIEL MERZKE	NRR /DLR /RLRB
Kiyoto Tanabe	NRC /NRR /DLR /RLR C /F.A.
Ken Chang	NRC /NRR
Linh Tran	NRC /NRR
Donnie Ashley	NRC /NRR /ADPO /DLR /RLRA
John Fir	NRC /NRR /DE /EEMB
JAMES MEDOFF	NRR /NRR /DCI /CFEB
ANGELO STUBBS	NRR /NRR /SPPB
DUC NGUYEN	NRR /NRR /DLR
PETER WEN	NRC /NRR /DLR
Dave Jeng	NRR /DE /EGCB
PAT PATNAIK	NRR /DCI /CFEB.
Jim Davis	NRR /LR
Glenn Meyer	Region I, DRS
Michael Madas	" "
Kaihua Robert HSU	NRR /DLR
YC (Renew) Li	NRR /DE /EEMB
Jonathan Rowley	NRR /DLR
Ed Fornazier	NRR /DRA
Bill Rogers	NRR /DE



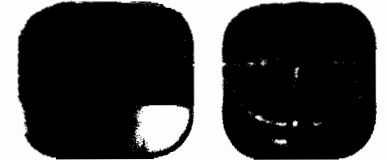
Constellation Energy

Nine Mile Point License Renewal Units 1 and 2

Presentation to ACRS LR Subcommittee

April 5, 2006
Tim O'Connor
Mark Flaherty
David Dellario
Pete Mazzaferro

The way energy **works.**





In Attendance

- Tim O'Connor - Vice President, Nine Mile Point Nuclear Station (NMPNS)
- Mark Flaherty - Acting Vice President, Constellation Energy (CE) Nuclear Technical Services
- David Dellario - Director, CE Fleet Licensing Projects
- Robert Randall - Director, Ginna Licensing
- Raymond Dean - Director, NMPNS Quality and Performance Assessment
- Peter Mazzaferro - NMPNS LR Project Manager
- Michael Fallin - NMPNS LR Project Lead
- Ken Haws - NMPNS LR Project Lead
- Dale Goodney - NMPNS Design Engineering
- George Inch - NMPNS Design Engineering
- Jeff Poehler - CE Nuclear Technical Services
- Carl Senska - NMPNS Chemistry



Agenda

- Description of NMPNS T. O'Connor
- Current NMPNS Performance T. O'Connor
- License Renewal Recovery Project M. Flaherty, T. O'Connor, D. Dellario
- Operating History P. Mazzaferro
- Plant Improvement Initiatives P. Mazzaferro
- Aging Management Programs P. Mazzaferro
- License Renewal Commitments P. Mazzaferro
- Summary T. O'Connor

Description of NMPNS

- Nine Mile Point Nuclear Station (NMPNS) owners:
 - CE - 100% of NMP1 & 82% of NMP2
 - Long Island Power Authority - 18% of NMP2
- CE effective ownership date:
 - November 11, 2001
- Operator: NMPNS
- Location: Lycoming, NY
- Ultimate heat sink: Lake Ontario
- NSSS and turbine supplier: GE

Description of NMPNS Units

- NMP1 Specific Information
 - BWR2 - Mark I Containment
 - Rated Thermal Capacity:
1850 MWt
 - Rated Electrical Output:
615 MWe
 - Commercial Operation:
12/1/69
 - License Expiration Date:
8/22/09
- NMP2 Specific Information
 - BWR5 - Mark II Containment
 - Rated Thermal Capacity:
3467 MWt
 - Rated Electrical Output:
1144 MWe
 - Commercial Operation:
3/11/88
 - License Expiration Date:
10/31/26 (Exemption from
10 CFR 54.17 granted by NRC)



Current NMPNS Performance

- The current NMP1 and NMP2 ROP performance indicators are green
- There are no open inspection findings with a status greater than green
- NMP1 and NMP2 are in Column 1 of the ROP Licensee Response Column Matrix

License Renewal Recovery Project

Constellation Response

- LRA submitted on May 26, 2004
- In March 2005, CE and NRC mutually concluded there were quality concerns with initial LRA
- CE and NRC mutually agreed that further LRA review be deferred to allow grace period for CE to improve LRA quality and submit Amended LRA (ALRA) to facilitate NRC review
- Performed Root Cause Analysis (Corrective Action Program)
 - Isolationism
 - Management engagement
 - Lack of resources



License Renewal Recovery Project

Corporate Oversight

- Assigned to Fleet Licensing
 - New Fleet Director position established
- Extensive Checks and Balances
 - Key Performance Indicators (KPIs)
 - Challenge Boards
 - Weekly Management Status meetings
 - Periodic meetings with Chief Nuclear Officer and President
- Added Resources

License Renewal Recovery Project

Site Lessons Learned and Application

- All projects/initiatives belong to and are controlled through Site VP
- Pre-established results, interim milestones and metrics
- NMP Staff assigned as a team to Projects
- Validating progress/results through Challenge Boards
- Independent oversight (Corporate/Q&PA/SMEs)
- Site communication for education and engagement

License Renewal Recovery Project

Project Actions Taken

- LR Recovery Project Plan:
 - LR team supplemented with NMP staff and industry experts
 - LR team consolidated at NMP
 - Benchmarking
 - Senior Licensing Consultant added to project
 - Internal and External assessments
 - Extensive use of Challenge Boards to review project products

License Renewal Recovery Project

Focus of Effort

- 3 LR Recovery Project focus areas:
 - NSR Scoping
 - NRC Review Questions
 - Aging Management Programs

License Renewal Recovery Project

Results of Project

- NMPNS submitted ALRA on July 14, 2005
- Addressed NRC-identified quality concerns
- Accelerated transfer of LR knowledge to NMP
- Successful Audit and Inspection



Operating History

Material Issues Addressed & Design Margin Restored

- NMP1 Reactor Recirculation System piping
 - Piping replacement with resistant material
- NMP1 /NMP2 Core Shroud
 - Tie rod and clamp repairs (Unit 1)
 - Acceptable by inspections and evaluation (Unit 2)
- NMP1 Emergency (Isolation) Condenser
 - Tubing replaced with resistant material
- NMP1 RBCLC piping degradation
 - Threaded pipe replaced by heavier wall welded construction
- NMP1 Control Rod Drive (CRD) Stub Tube
 - Roll repairs



NMP1 Core Shroud Cracking

- Tie Rod repairs installed structurally replacing horizontal welds H1 through H7 in 1995
- Identified shroud beltline vertical weld cracking in V9 and V10 welds in 1997
- Inspections in 1999 identified an average crack growth rate of $\sim 2 \times 10^{-5}$ inches/hr
- Peak fluence of un-repaired vertical welds remains $< 5 \times 10^{20}$ n/cm² - threshold for application of irradiated assisted crack growth effects
- Vertical weld clamps installed structurally replacing V9 and V10 vertical welds in 1999
- Noble Metals applied 2000/HWC started in 2000
- Full vertical weld and ring segment weld inspections performed in 1999
 - Re-inspection interval 10 years
 - Full re-baseline inspection to be completed 2007 and 2009

NMP2 Core Shroud Cracking

- Identified IGSCC cracking in the H4 and H5 welds in 1998
 - 70% circumference (max depth <0.75", average <0.5")
- Completed structural analysis consistent with BWRVIP-76
 - Determined repair not required.
- Reinspected in 2000
 - Identified average crack growth ~1E-5 in/hr
- Noble metals applied 2000/HWC started 2001
- Reinspected H4 and H5 welds in 2004 after 4 years of effective HWC
 - No observed crack growth
- Peak fluence of H4 weld in 2004 <6.5E20 n/cm² (E >1MEV)
- Contingency tie rod repair installation planned for operation beyond 2010

NMP1 Emergency (Isolation) Condenser

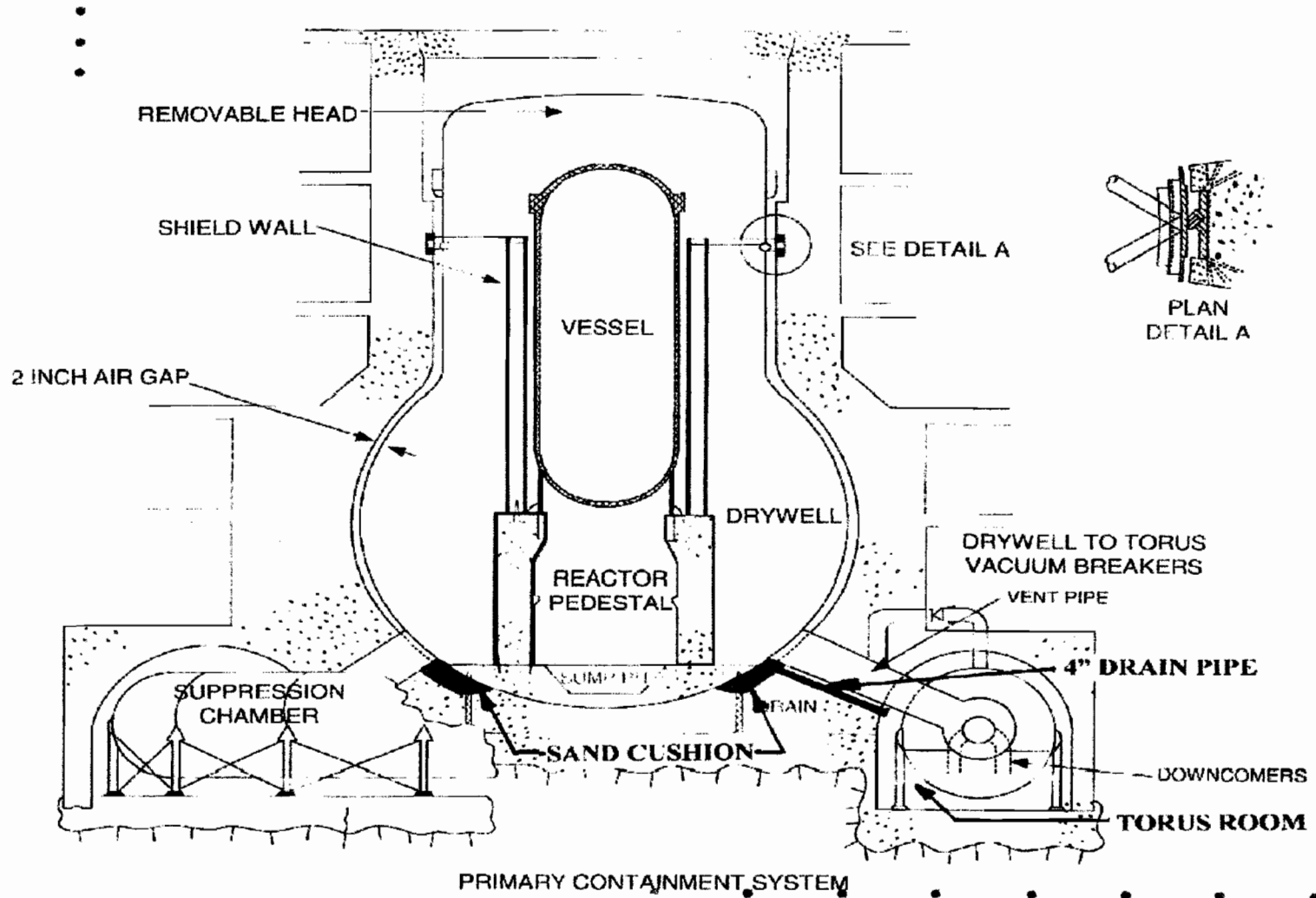
- Identified and repaired tube leaks in 1997
- ECs are of all welded construction - Bases for not performing eddy current testing:
 - Conditions and stressors that were precursors to SCC have been eliminated
 - Lowered temperature of tube and shell side water
 - Maintaining water chemistry on tube and shell side
 - Susceptibility of tubes to SCC reduced by modifications
 - Use of 316L SS tubes and tubesheets
 - Installation of a Keep Fill System to keep tubes flooded & to eliminate thermal cycles
 - Monitoring and detection to ensure adverse conditions will not recur
 - Temperature
 - Water Chemistry
 - Radiation from vents
 - Tube leak test to assure heat transfer intended function is not compromised
 - Periodic performance testing of the HXs



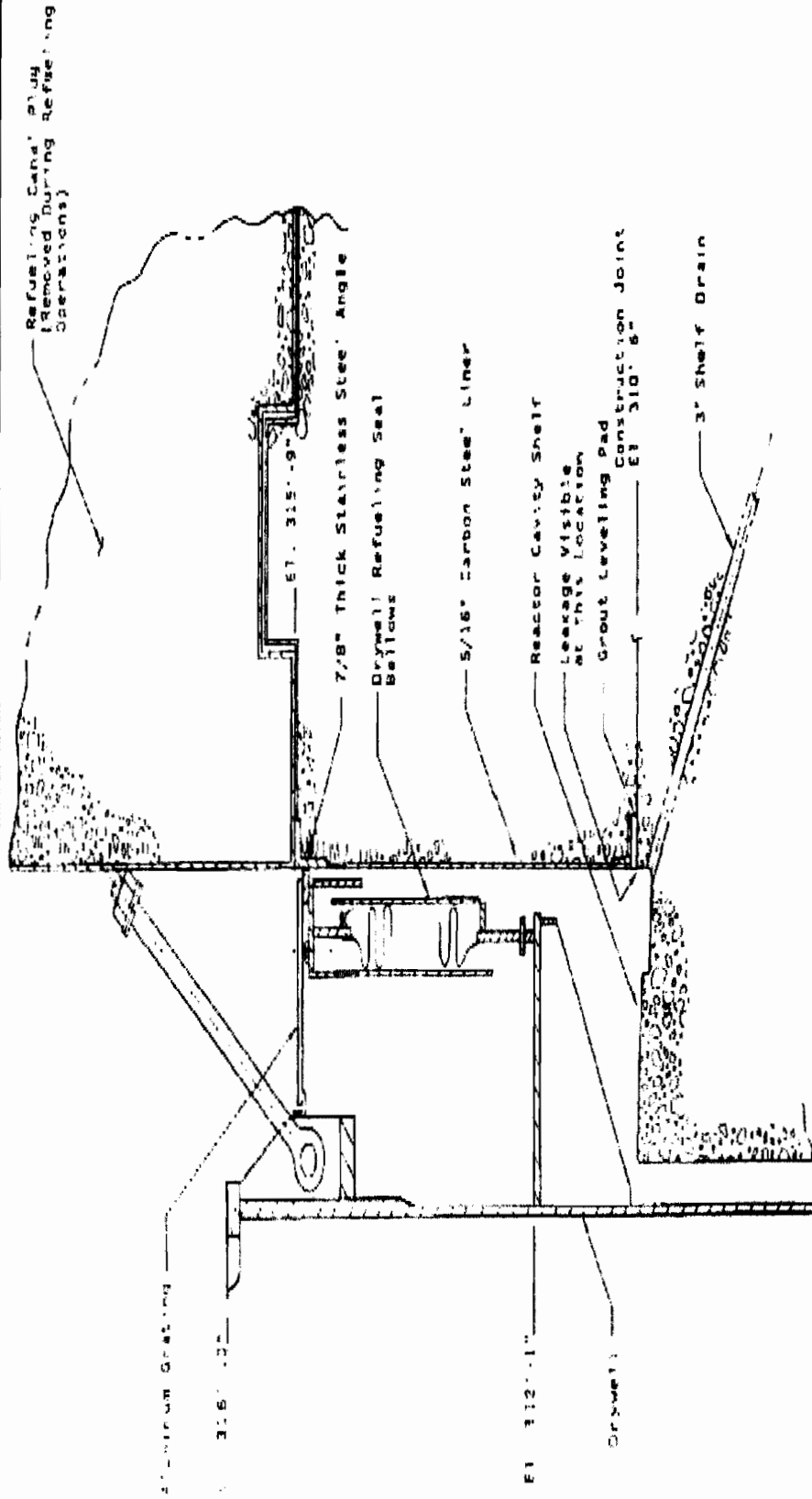
NMP1 CRD Stub Tubes

- CRD Stub Tubes
 - NRC approved use of roll repairs via SE dated March 25, 1987
 - ASME approval of Code Case N-730 pending for roll repair methodology
 - If, during PEO, a rolled stub tube re-leaks, one of following zero leakage repairs will be implemented:
 - Welded repair consistent with BWRVIP-58A as endorsed by NRC in RG 1.147
 - Variation of welded repair geometry specified in BWRVIP-58A, using Code Case N-606-1, subject to NRC approval
 - A future developed mechanical/welded repair method subject to NRC approval

NMP1 Drywell Design



NMP1 Drywell External Condition



NINE MILE POINT UNIT 1
REACTOR HEAD CAVITY REFUELING SEAL
AND SHELF AREA

FIGURE 3

NER-007
REVISION 0

Protective Coatings Monitoring & Maintenance

- NMPNS Program consistent with industry practice as documented in NEI Letter to NRC, “Qualified Coatings Assessments”, dated 3/31/06
- NMPNS Program consistent with GALL Report, Rev 1, Section XI.S8
- Program not credited for Containment shell corrosion mitigation
- Program specifically credited and administered to ensure post-accident operability of the ECCS suction strainers



Plant Improvement Initiatives

CE Committed to an Ongoing Program of Station Improvement

- Implemented Noble Metal Chemical Addition and Hydrogen Water Chemistry at NMP1 (2000) and NMP2 (2000-2001)
- NMP2 Spent Fuel Pool to be re-racked eliminating use of Boraflex (2007)
- Implementing use of corrosion inhibitors in selected NMP1 and NMP2 Closed-Cycle Cooling Water Systems prior to entry into PEO
- NMP1 115kV Reserve Station Service Transformers and Switchyard Disconnect Switches replaced (2005)



Aging Management Programs

- 43 Aging Management Programs credited in ALRA
 - Includes 8 new programs
 - Aligned to GALL, Rev 1



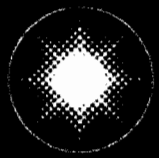
License Renewal Commitments

- NMP Commitments managed and tracked via Nuclear Commitment Tracking System (NCTS)
- 54 LR Commitments
 - 41 NMP1 commitments implemented by 2 years prior to entry into PEO
 - 40 NMP2 implementation commitments to follow NMP1
- Priority for regulatory commitments is second only to safety consideration
- Implementation Plan and Schedule
- NMP senior management monitors implementation status weekly



Summary

- Successful Recovery Project
 - Results of NRC's Audits and Inspection
 - Only 2 SER Open Items well on their way to being closed
- NMPNS manages plant aging issues effectively
- NMPNS will successfully implement its LR Commitments
- CE committed to Excellence and is, therefore, ever improving operation and reliability of NMPNS



Constellation Energy

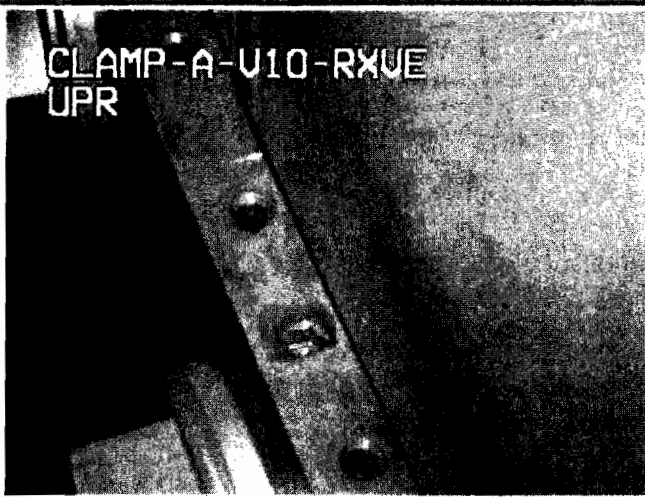
Nine Mile Point License Renewal Units 1 and 2

Presentation to ACRS LR Subcommittee

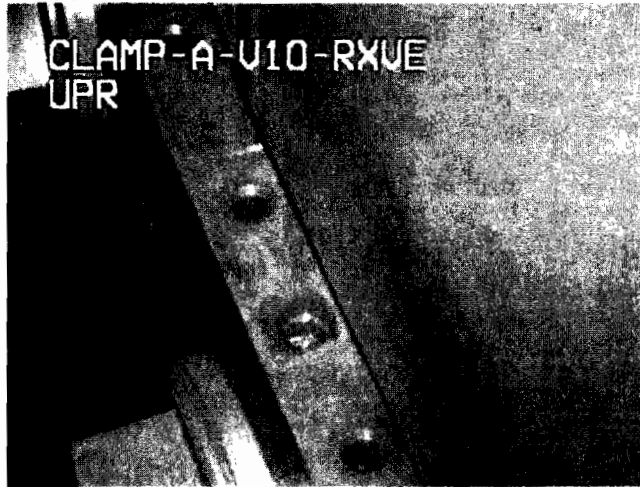
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Vertical Weld Repair Clamp



Vertical Weld Repair Clamp





NINE MILE POINT NUCLEAR STATION

Units 1 and 2

License Renewal

Safety Evaluation Report

Staff Presentation to the ACRS

Tommy Le, Senior Project Manager, NRR
Dr. Kenneth Chang, Audit Team Leader, NRR
Robert Hsu, Assistant Audit Team Leader, NRR
Michael Modes, Lead Inspector, REGION I
April 5, 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 May 26, 2004
- GE Boiling Water Reactors
 - Unit 1: - Mark 1, GE BWR 2
 - 1850 Mwt, 615 Mwe
 - Operating License expires August 22, 2009
 - Unit 2: - Mark 2, GE BWR 5
 - 3467 Mwt, 1144 Mwe (with 4.33% Power Uprate (EPU) in April, 1995)
 - Operating License expires October 31, 2026
 - Schedular Exemption issued October 8, 2002
- NMPNS located six miles northeast of Oswego, NY



Overview (continued)

- SER w/Open Items issued on March 3, 2006
 - 54 commitments:
 - Unit 1: 14
 - Unit 2: 13
 - Common: 27
 - Implementation: 2 years prior to Unit's PEO
 - Two Open Items and No Confirmatory Items
 - 3 license conditions



Section 2: Scoping and Screening Review

- NRR Scoping and Screening Methodology Audit
 - September 27 – October 10, 2004
- **Section 2.1** - Scoping and Screening Methodology
 - Staff audit identified issues resolved through RAI and amended application
 - 10 CFR 54.4(a)2 – NSR affecting SR
 - Evaluation of Plant Insulation



Section 2: Scoping and Screening Review (Continued)

- **Section 2.2, Plant Level Scoping and RAI Results**
 - 14 new systems were added, 3 previously included systems removed
 - New and Revised LR drawings identifying 10 CFR 50.54(a)(2) were provided
 - Amended LRA clearly identified SCC's within scope of LR and subject to AMR
 - Amended LRA now uses standard component types and component intended function consistent with SRP-LR and NEI-95-10 to identify SSCs in scope of LR and subject to AMR.
 - All issues were resolved in Amended LRA and the staff concludes that the applicant's methodology satisfies the rule pursuant to 10 CFR 54.4 (a)(1), (a)(2)



Section 2: Scoping and Screening Review (Continued)

Structures and Components	<u>NMP 1</u>	<u>NMP 2</u>
2.3 Mechanical Systems	45 : 35 are BOP (28 Auxiliary and 7 Steam and Power Conversion Systems)	61 : 47 are BOP (40 Auxiliary and 7 Steam and Power Conversion Systems)
2.4 Structures & Component Supports	Primary Cont. Structure Other Class 1 and in-scope Structures (11) Structural Commodities	Primary Cont. Structure Other Class 1 and in-scope Structures (13) Structural Commodities
2.5 Electrical /IC Systems & Commodities	Cables and Connectors Non-Segregated/ Sw-yard Bus Containment Electrical Penetrations Switchyard Components	Cables and Connectors Non-Segregated/ Sw-yard Bus Containment Electrical Penetrations Switchyard Components



Section 2: Scoping and Screening Summary

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



Region I

License Renewal Inspection

- 10 CFR 54.4 (a) (2) Inspection
- Aging Management Programs Implementation Inspection
- Conducted: February 14 - 18, February 28-March 4, and April 4 – 8, 2005
 - “(a)(2)” walk-down of 16 systems
 - Reviewed 22 programs
 - 15 open items within 5 programs



Region I - License Renewal Inspection (Continued)

- 90 day recovery "stand down" implemented
- Conducted: December 12 – 15, 2005
 - reviewed resolution of previously-identified 15 open items
- Inspection Team concluded all open items were satisfactory resolved and closed out as presented in Inspection Report



NMP Unit 1 4Q/2005 Performance Summary

Performance Indicators

Unplanned Scrams (G)	Emergency AC Power System Unavailability (G)	Reactor Coolant System Activity (G)	Drill/Exercise Performance (G)	Occupational Exposure Control Effectiveness (G)	RETS/DDCM Radiological Effluent (G)
Scrams With Loss of Normal Heat Removal (G)	High Pressure Injection System Unavailability (G)	Reactor Coolant System Leakage (G)	ERD Drill Participation (G)		
Unplanned Power Changes (G)	Under Development		Alert and Notification System (G)		
	Residual Heat Removal System Unavailability (G)				
	Safety System Functional Failures (G)				



NMP Unit 2 4Q/2005 Performance Summary

Performance Indicators

Unplanned Sorams (G)	Emergency AC Power System Unavailability (G)	Reactor Coolant System Activity (G)	Drill/Exercise Performance (G)	Occupational Exposure Control Effectiveness (G)	RETS/ODDM Radiological Effluent (G)
Sorams With Loss of Normal Heat Removal (G)	High Pressure Injection System Unavailability (G)	Reactor Coolant System Leakage (G)	ERD Drill Participation (G)		
Unplanned Power Changes (G)	Under Development		Alert and Notification System (G)		
	Residual Heat Removal System Unavailability (G)				
	Safety System Functional Failures (G)				



Section 3: Aging Management Review Results

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



Section 3: Aging Management Review Results (Continued)

- **DE / DCI Technical Review**
 - 7 Plants Specific AMPs and AMR Line Items
- **DLR Audit and Review**
 - Original LRA
Conducted: August 5 - 13, 2004, August 13 - 17,
October 21 - 22, 2004, and October 25 - 26, 2004
 - Amended LRA
Conducted: September 19 - 24, and October 24 - 28, 2005
- Resulted in: - 5 new AMPS and
- 23 new Commitments



Aging Management Programs -Bolting Integrity Program

- A new bolting integrity AMP was added as a result of the audit team's AMR review for closure bolting.
- Applicant committed to implement new AMP for both Units (U1 Comm. 33 and U2 Comm. 31)



Aging Management Programs -BWR Vessel Internals Program

- Consistent with enhancements
- Enhancements:
 - For example: 100% Inspection of Top Guide for Unit 1 (Commitment 13)



Aging Management Programs -Reactor Vessel Surveillance Program (RVSP)

- The RVSP manages loss of fracture toughness due to neutron irradiation embrittlement in the RV beltline materials.
- The RVSP is based on the integrated surveillance program criteria in BWRVIP-78 and BWRVIP-86.
- Enhancement: The RVSP will be enhanced to include conformance with the updated integrated surveillance program criteria in BWRVIP-116 (Commitment #22-NMP1, #20-NMP2).



Aging Management Programs

-Unit 1 CRD Stub Tube Penetrations

- Originally, Unit 1 CRD stub tubes were repaired by roll/expansion techniques with an allowance for some amount of RCPB leakage. Plan to Implement Code case N-730 if Approved by NRC staff (Comm. 36 Unit 1)
- NMP will implement zero leakage permanent repair (Comm.36 U1):
 - Performed weld repair per BWRVIP-58A (Reg. Guide 1.147)
 - A variation of welded repair geometry and NRC approval of Code Case N-606-01
 - A future developed mechanical/welded repair method subject to NRC approval



Aging Management Programs -Unit 1 Emergency (Isolation) Condensers (ECs)

- The design of the emergency condensers features end bells welded to the EC shell that are not designed to be removed; therefore, eddy current testing, as recommended by GALL Report, of the tubing is not possible.
- During audit and review, applicant provided its basis for not performing eddy current testing and committed to implement a leakage test to detect small leak (U1. Comm. 29)



Aging Management Programs

-Non-EQ Inaccessible Medium-Voltage Cables Program

- Originally, NMP claimed no inaccessible medium-voltage cables within scope of LR.
- The Audit Team identified at least one underground cable within scope for Unit 2. The applicant later identified a total of 18 cables requiring an AMP.
- The applicant developed a new AMP to be implemented prior to PEO (U2 Comm. 38)



Section 3: Aging Management Review Results (Continued)

Systems or Structures	<u>NMP 1</u> - Identified AMPs to manage Aging Effects	<u>NMP 2</u> - Identified AMPs to manage Aging Effects
3.1 Reactor Vessel, Internals, & Reactor Coolant System	15	14
3.2 Engineering safety Features	9	8
3.3 Auxiliary Systems	17	15
3.4 Steam & Power Conversion	9	6
3.5 Containment Structures & Supp	13	12
3.6 Electrical/ I&C Systems	6	6



Section 3.5, Containments, Structures and Component Supports

UNIT 1: Containments, Structures and Component Supports

- **OPEN ITEM:** NMP1 Drywell Liner Corrosion



Aging Management of In-Scope Inaccessible Concrete – Measured NMPNS Ground Water Parameters

	Acceptable Limit	NMP 1 & 2
pH	pH >5.5	6.79 – 7.83
Chlorides	Chlorides <500 ppm	7.7 – 49 ppm
Sulfates	Sulfates <1500 ppm	28 – 60 ppm

- Plant located adjacent to an inland lake with ground water testing performed once every six months
- Above data [from April & October, 2003 tests] indicate below grade environment is non-aggressive
- Because below grade environment is non-aggressive: No phosphate and phosphoric acid tests were performed



Section 4: Time-Limited Aging Analyses (TLAAs)

- **4.1** Identification of TLAAs
 - No TLAA-based Exemptions identified
- **4.2** Reactor Vessel Neutron Embrittlement
 - All analyses are Acceptable
- **4.3** Metal Fatigue
 - Committed to implement FatiguePro monitoring software (commitment #5 for U1 and 4 for U2)
- **4.4** Environmental Qualification of Electrical Equipment
 - EQ program together with other plant programs will adequately manage aging effect during PEO
- **4.5** Concrete Containment Tendon Prestress – N/A
- **4.6** Containment Liner Plate, Metal Containment and Penetration Fatigue Analysis
 - Adequate evaluation to demonstrate that fatigue usage not exceeded during PEO
 - Unit 1 FMP Torus Attached piping, Unit 1 Torus Monitoring Program,



Section 4: Time-Limited Aging Analyses - (TLAAs) (Continued)

- 4.7 Other Plant Specific TLAAs
 - TLAA evaluation for NMP2 Bioshield not based on NRC-approved methodology

OPEN ITEM 4.7B.1-1 in Staff SER w/OIs

- March 23, 2006, letter provides summary results of new (Reg. Guide 1.190 based) analysis
- Withdrew Bioshield TLAA 4.7B.1



Reactor Vessel (RV) Upper Shelf Energy (USE) - Analysis Summary for **NMP1**

RV Beltline Component	Acceptance Criterion for USE	Component Value for 54 EFPY	Acceptable Y/N
NMP1 Lower Shell Plate (Heat No. G-8-1)	Percent Drop < 29.5 % Drop in the USE ft-lb value*	19.2 Percent Drop in USE ft-lb	Yes TLAA satisfied 54.21(c)(1)(ii)
NMP1 Upper Shell Plate (Heat No. G-307-4)	Percent Drop < 29.5 % Drop in the USE ft-lb value*	24.9 Percent Drop in USE ft-lb	Yes TLAA satisfied 54.21(c)(1)(ii)
NMP1 Circumferential Weld (SAW) Heat No. 1248	Projected USE > 50 ft-lbs	64 ft-lbs	Yes TLAA satisfied 54.21(c)(1)(ii)

*Acceptance criteria for beltline plates and welds established by elastic-plastic fracture mechanics analysis in BWRVIP-74-A discussed in SER pages 4-10 to 4-11 and 4-15



Reactor Vessel (RV) Upper Shelf Energy (USE) - Analysis Summary for **NMP2**

RV Beltline Component	Acceptance Criterion for USE	Component Value for 54 EFPY	Acceptable Y/N
NMP2 Number 2 Shell Plate (Heat No. C3147-1)	Projected USE > 50 ft-lbs at EOLE	62.3 ft-lbs	Yes TLAA satisfied 54.21(c)(1)(ii)
NMP2 Number 1 Shell Plate (Heat No. C3147-2)	Projected USE > 50 ft-lbs at EOLE	76.5 ft-lbs	Yes TLAA satisfied 54.21(c)(1)(ii)
NMP2 Axial Weld (SAW) (Heat No. 5P5657/0931)	Projected USE > 50 ft-lbs at EOLE	74 ft-lbs	Yes TLAA satisfied 54.21(c)(1)(ii)



RV Circumferential Weld Relief / RV Axial Weld Probability of Failure Analyses

RV Material	TLAA Basis	Acceptance Criterion ($^{\circ}$ F)	NMP1 Value ($^{\circ}$ F)	NMP2 Value ($^{\circ}$ F)
Limiting Circ. Weld	BWRVIP-05 Mean RT_{ndt} Value in $^{\circ}$ F	<113.2	22.3 (NMP) 22.4 (Staff)	N/A*
Limiting Axial Weld	BWRVIP-05 Mean RT_{ndt} Value in $^{\circ}$ F	<114.0	31.3 (NMP) 31.0 (Staff)	-5.0 (NMP) -5.0 (Staff)

- *NMP2 has not submitted a relief request for the elimination of circumferential weld inspections for the remainder of its 40-year licensed operating period.
- TLAA's for the Circ. Weld and Axial Weld Mean RT_{ndt} values were in all cases determined to be acceptable under 10 CFR 54.21(c)(1)(i) or (ii)



TLAAs Summary

- TLAAs
 - 10 CFR 54.3: TLAA list adequate, as amended
 - 10 CFR 54.21(c)(1)(i): analyses remain valid for PEO, (ii): analyses projected to the end of PEO, and (iii): aging effects will be adequately managed for PEO
 - 10 CFR 54.21(d): Sufficient supplements to FSAR
 - 10 CFR 54.21(c)(2): No plant specific exemptions



Conclusions

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