



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

October 20, 2005

MEMORANDUM TO: ACRS Members

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

SUBJECT: CERTIFICATION OF THE MINUTES OF THE JOINT MEETING OF THE
ACRS SUBCOMMITTEES ON PLANT OPERATIONS AND LICENSE
RENEWAL REGARDING BROWNS FERRY UNIT 1 PLANT RESTART
AND LICENSE RENEWAL APPLICATION, SEPTEMBER 21, 2005 -
ROCKVILLE, MARYLAND

The minutes of the subject meeting were certified on October 20, 2005, as the official record of the proceedings of that meeting. A copy of the certified minutes is attached.

Attachment: As stated

cc: J. Larkins
A. Thadani
M. Scott
M. Snodderly
S. Duraiswamy



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

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

FROM: John D. Sieber, Chairman
ACRS Plant Operations Subcommittee

SUBJECT: CERTIFICATION OF THE MINUTES OF THE JOINT MEETING OF
ACRS SUBCOMMITTEES ON PLANT OPERATION AND LICENSE
RENEWAL REGARDING BROWNS FERRY UNIT 1 RESTART AND
LICENSE RENEWAL APPLICATION, SEPTEMBER 21, 2005 -
ROCKVILLE, MARYLAND

I hereby certify, to the best of my knowledge and belief, that the minutes of the subject meeting on September 21, 2005, are an accurate record of the proceedings for that meeting.

/Original signed by/	10/20/05
John D. Sieber,	Date
Plant Operations Subcommittee Chairman	

**CERTIFIED
10/20/2005
by John Sieber
Issued 09/23/05**

**ADVISORY COMMITTEE ON REACTOR SAFEGUARDS
MINUTES OF THE JOINT ACRS PLANT LICENSE RENEWAL AND PLANT OPERATIONS
SUBCOMMITTEES MEETING
ON BROWNS FERRY UNIT 1 RESTART AND LICENSE RENEWAL
SEPTEMBER 21, 2005
ROCKVILLE, MARYLAND**

On September 21, 2005, the Plant License Renewal and Plant Operations Subcommittees held a joint meeting in Room T-2B3, 11545 Rockville Pike, Rockville, Maryland. The purpose of the meeting was to gather information regarding the current status and condition of Browns Ferry (BF) Unit 1 to support ACRS reviews of the license renewal application for BF Units 1, 2, and 3 and the restart of BF Unit 1. The Subcommittees will hear presentations by and hold discussions with representatives of the staff and Tennessee Valley Authority (TVA).

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 8:31 a.m. and adjourned at 4:23 p.m. on September 21, 2005.

ATTENDEES:

ACRS MEMBERS/STAFF

Mario Bonaca, Chairman
John Sieber, Chairman
Graham Wallis, Member
Tom Kress, Member
Richard Denning, Member

John Barton, Consultant
Graham Leitch, Consultant
Cayetano Santos Jr., ACRS Staff
John G. Lamb, ACRS Staff

NRC STAFF/PRESENTERS

Y. Diaz, NRR
K. Tanabe, NRR
M. Chernoff, NRR
J. Tapp, NRR
J. Strhisha, NRR
M. Heath, NRR
R. McNally, NRR
B. Elliott, NRR
L. Lund, NRR
N. Iqbal, NRR
K. Naidu, NRR
G. Cranston, NRR
D. Reddy, NRR
J. Zimmerman, NRR

R. Subbaratnam, NRR
S. Lee, NRR
E. Brown, NRR
G. Taylor, NRR
R. Auluck, NRR
E. Hackett, NRR
G. Cheruvenki, NRR
B. Rodgers, NRR
P.Y. Chen, NRR
P.T. Kuo, NRR
R. Pettis, NRR
J. Guo, NRR
B. Wolfgang, NRR

OTHER ATTENDEES

W. Crouch, TVA
J. McCarthy, TVA
K. Bryne, TVA
T. McGrath, TVA
J. Valente, TVA
K. Sutton, Morgan-Lewis
C. Beasley, TVA

H. Jones, TVA
R. DeLong, TVA
D. Burrell, TVA
R. Cutsinger, TVA
S. Dort, FENOC
R.G. Jones, TVA
R. Moll, TVA

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 Subcommittees are summarized below.

Opening Remarks

Mr. Sieber, Chairman of the Subcommittee on Plant Operations, convened the meeting and made a few introductory remarks. The purpose of the meeting was to gather information regarding the current status and condition of Browns Ferry (BF) Unit 1 to support ACRS reviews of the license renewal application for BF Units 1, 2, and 3 and the restart of BF Unit 1.

Dr. Bonaca stated that the Committee is concerned about how BF Units 2 and 3 operating experience applies to BF Unit 1, restart inspections, material condition, corrective action program, restart activities with license renewal, and periodic inspections vs. one-time inspection should be clear.

Mr. Leitch stated he is concerned about how BF Units 2 and 3 operating experience applies to BF Unit 1, and he is concerned about the uprated power level.

Mr. Barton stated he is concerned that some equipment is 30 years old.

Mr. Sieber called upon Mr. P.T. Kuo of the Office of Nuclear Reactor Regulation (NRR) to make a statement. Mr. Kuo introduced NRR staff members present. He said TVA submitted an application for license renewal of BF Units 1, 2, and 3 on December 31, 2003 (ADAMS Accession No. ML040060361). Mr. Kuo stated TVA subsequently submitted Extended Power Uprate (EPU) applications for Unit 1 and Units 2 & 3 on June 28, 2004 (ADAMS Accession No. ML041840109), and June 25, 2004 (ADAMS Accession No. ML041840301), respectively. He said the EPU has been decoupled from the license renewal application (LRA) based on a TVA letter dated January 7, 2005 (ADAMS Accession No. ML050100180). Mr. Kuo explained the BF LRA is based on the current power level. He said the staff Safety Evaluation Report (SER) with open items (ADAMS Accession No. ML052210484) was supplied to the ACRS on August 9, 2005. Mr. Kuo stated ACRS Members visited the BF site on August 24, 2005. Dr. Bonaca asked about the modifications for the EPU. Mr. Kuo answered the modifications will be explained at the October 5, 2005, Plant License Renewal Subcommittee meeting. He said the staff is not making any presentations today.

Mr. Sieber turned it over to Bill Couch of TVA to begin the discussion.

Discussion

Mr. Couch introduced TVA staff in attendance. He stated the following are agenda items: Regulatory Background, BF Unit 1 Fidelity with Units 2 and 3, License Renewal Application, EPU Impact on License Renewal, and Summary. Mr. Couch stated there are three major Nuclear Regulatory Commission (NRC) approval issues: (1) license renewal at current power, (2) EPU, and (3) Unit 1 restart. He said ACRS approval is required for the LRA and the EPU. Mr. Couch stated final approval is required for Unit 1 restart by the Region II Regional Administrator and NRR Director.

Regulatory Background

Mr. Couch provided the presentation slides regarding regulatory background. He said the three Browns Ferry Nuclear Plant Units consist of a General Electric Type 4 boiling water reactor with a Mark I containment that were designed and constructed by TVA. Mr. Couch explained Units 1 and 2 were licensed in 1973 and 1974, respectively, and both units shutdown after the March 22, 1975 Browns Ferry fire. He said Unit 1 and 2 were returned to service in 1976 and operated until 1985. Mr. Couch stated Unit 3 was licensed in 1976 and operated until 1985. He said TVA voluntarily shut down all three units in March 1985 to correct a variety of issues. Mr. Couch stated Unit 1 has approximately 10 years of operations, Unit 2 has approximately 23 years of operations, and Unit 3 has approximately 18 years of operations. He said Units 2 and 3 were restarted in 1991 and 1995, respectively. Mr. Couch said TVA submitted a proposed update to the regulatory framework for Unit 1 in December 2003.

Note:

The TVA regulatory framework letter is dated December 13, 2002 (ADAMS Accession No. ML023600026). In a letter dated August 14, 2003 (ADAMS Accession No. ML032190680), the NRC issued the Regulatory Framework for the Restart of Browns Ferry Unit 1. This letter lists the significant regulatory actions that require resolution before restart. Region II has been monitoring the Unit 1 recovery efforts.

Mr. Couch stated the Unit 1 NRC oversight is governed by Manual Chapter 2509, "Browns Ferry Unit 1 Restart Project Inspection Program." He said the restart oversight panel is scheduled to begin in Fall 2005 and will provide its recommendation to the Region II Regional Administrator and the NRR Director for Unit 1 restart approval.

Mr. Couch explained when the LRA and EPU applications were submitted. He said LRA approval is expected in June 2006 and EPU approval is expected prior to Unit 1 restart in May 2007.

Member Comments on the Regulatory Background

Mr. Leitch asked if the design discussed in the LRA is the present design or the future design. Mr. Couch answered the LRA design is the future design at the EPU conditions. Mr. Leitch asked about piping modifications. Mr. Couch provided three handouts: (1) Description of Modifications Planned for Unit 1 Restart, (2) Table 1 - Browns Ferry Unit 1 Restart Project - Piping System Replacements, and (3) [Non-Destructive Examination] NDE Examinations Performed for Original Non-Replaced Piping. Mr. Leitch asked when the Units expect to reach the EPU conditions provided TVA receives approval of the EPU applications. Mr. Couch responded Unit 1 and 2 expect to implement EPU in 2007 and Unit 3 in 2008. He said Unit 1 is the lead BF plant for EPU. Mr. Leitch asked about procedures at BF. Mr. Couch answered that each Unit has its own set of procedures.

Mr. Sieber asked if Browns Ferry is an Appendix R plant. Mr. Couch responded that Units 2 and 3 meet Appendix R with five exemptions and Unit 1 will be brought into compliance with Appendix R. Mr. Sieber asked what version of Generic Aging Lessons Learned (GALL) did TVA use. Mr. Couch stated Revision 1; however, this was corrected to Revision 0 later in the meeting. Mr. Sieber questioned which topical reports are being used for the EPU. Mr. Couch answered that TVA is using General Electric (GE) topical reports ELTR1 and ELTR2 for the EPU.

Dr. Bonaca asked if the proposed 2002 LRA has changed significantly to today. Mr. Couch responded that originally in 2002 TVA was working on LRA for Units 2 and 3 only; however, added Unit 1 based on the 2002 TVA Board decision to restart Unit 1. He said TVA had a good handle on what components needed to be replaced based on its experience restarting Units 2 and 3. Mr. Couch said the LRA application was complete when it was submitted to the NRC in December 2003. Dr. Bonaca stated there is no coherent description of the Unit 2 and 3 operating experience applying to Unit 1 in the LRA application or the staff SER with open items. Mr. Couch responded that TVA will work with the staff to come up with words for the SER. Mr. Ram Subbaratnam of NRR stated it will be in the final SER. Dr. Bonaca stated BF Unit 1 will start-up at a 20% higher power level. He said he would expect a commitment in the LRA for TVA to submit a report a couple of years before entering the period of extended operation explaining and justifying the EPU for the license renewal.

Unit 1 Fidelity with Units 2 & 3

Mr. Joe Valente of TVA presented the slides regarding Unit 1 fidelity with Units 2 and 3. He said the scope of Unit 1 restart project incorporated the same restart programs as Unit 2 and 3 and upgrades installed on Units 2 and 3 since restart. Mr. Valente stated Unit 1 will be operationally the same as Units 2 and 3. He said Unit 1 will have the same systems, equipment, operating procedures, Technical Specifications, and Updated Safety Analysis Report. Mr. Valente said TVA deleted the low pressure coolant injection motor generator sets. Mr. Valente described three items from its nuclear performance plan: (1) design baseline verification program, (2) fire protection - Appendix R, and (3) Intergranular Stress Corrosion Cracking. He described the Unit 1 lay-up program. Mr. Valente described the assessment process for the condition of Unit 1. He stated 39 Unit 1 mechanical systems are in scope for Unit 1 recovery and 47 Unit 1 mechanical systems are in scope for license renewal. Mr. Valente stated one system was completely replaced. He described the detailed work performed for 3 systems: (1) high pressure coolant injection (HPCI), (2) reactor water cleanup (RWCU), and (3) feedwater (FW). Mr. Valente described the long-term passive components replaced.

Mr. R.J. Jones of TVA presented the slides regarding Unit 1 system return to service process. He described the system plant acceptance evaluation (SPAEE) process, the phase I system pre-operability checklist (SPOC) process, and the phase II SPOC process. Mr. Jones described the Unit 1 restart test program. He said the Unit 1 restart test program is the same as the programs performed on Unit 2 and 3. Mr. Jones described the testing for 3 systems: (1) HPCI, (2) RWCU, and (3) FW. He described the integrated/power ascension test program. Mr. Jones said Phase 1 testing is open vessel testing. He said Phase II testing will be up to 55% power. Mr. Jones stated Phase 3 will be 55% to 83% power. He said Phase 4 will be from 83% to 100%. Mr. Jones stated that 100% will be EPU conditions or 120% of the current licensed power level. He said Phase 4 will be performed in plateaus of 2% - 5%. Mr. Jones stated TVA will not perform large transient testing for Unit 1, because he said it offers minimal benefit and does not justify the risk. Mr. Jones stated that TVA is increasing the staff by 126 people. He said the Operations crews work 12 hour shifts on a 6 week schedule. Mr. Jones stated BF has 2 simulators: one for Unit 3 and one for Unit 1. He said the Emergency Plan Guidelines (EPGs) are plant-specific.

Member Comments on Unit 1 Fidelity with Units 2 & 3

Mr. Leitch asked why TVA deleted the low pressure coolant injection motor generator sets. Mr. Valente answered that it simplified the electrical system. Mr. Leitch asked if TVA re-did its Probabilistic Risk Assessment (PRA) based on modifications to Unit 1. Mr. Valente responded that TVA re-did its Level 1 PRA and provided a slide with the results (Core Damage Frequency (CDF) at EPU conditions: Unit 1 - 1.77 E-6; Unit 2 - 1.55 E-6; and Unit 3 - 2.76 E-6). Mr. Leitch asked if any EPU modifications were done due to PRA. Mr. Valente stated TVA increased the volume in the Standby Liquid Control System. Mr. Leitch asked how TVA came up with the list for the performance plan. Mr. Valente responded these special programs were developed due

to problems at shutdown in 1985. Mr. Leitch asked about net positive suction head (NPSH) on Emergency Core Cooling System (ECCS) pumps. Mr. Valente answered that TVA takes credit for containment overpressure. Mr. Leitch expressed a concern regarding the blockage of Electro-Hydraulic Control (EHC) piping. Mr. Couch responded that TVA plans to work with GE to flush the EHC and lube oil system. Mr. Leitch asked about medium voltage cables. Mr. Valente stated that TVA has not replaced medium voltage cables; however, TVA has performed 4 kV cable splices. Mr. Leitch asked how many Technical Specification (TS) changes are needed for BF. Mr. Couch stated there are 21 TS changes: 16 submitted and 5 completed. Mr. Leitch asked if Quality Assurance (QA) is involved in the SPOC process. Mr. Jones responded that Quality Control (QC) is in the process and QA looked at 6 systems returned to service with no findings. Mr. Leitch asked about restart test procedures. Mr. Jones answered that TVA has surveillance instructions, surveillance tests, post-maintenance tests (PMTs), and technical procedures. Mr. Leitch asked when would TVA test if the RWCU pumps worked. Mr. Jones responded it would occur after SPOC Phase I and before SPOC Phase II. Mr. Leitch asked how long the Phase 1 power ascension test program would last. Mr. Jones responded Phase 1 power ascension test program will take approximately 3 weeks. Mr. Leitch asked if a turbine overspeed test will be performed as part of the Phase 2 power ascension test program. Mr. Jones responded that a turbine overspeed test will be conducted during the Phase 2 power ascension test program. Mr. Leitch asked about the closure time of the Main Steam Isolation Valve (MSIV) at the EPU higher steam flow conditions and how can TVA justify a MSIV closure time of 3 - 5 seconds without dynamic testing. Mr. Couch responded that BF 1 has a steam flow rate, not in terms of mass flow rate, but in terms of velocity, significantly below what other plants are running at the EPU conditions and TVA performs stroke time testing on Unit 1 the same as Units 2 and 3. Mr. Leitch expressed concern that the stroke time cannot be ensured at EPU conditions without a dynamic test.

Dr. Denning asked for an explanation in the different PRA numbers for the three units. Mr. Couch responded TVA has shared pumps such as the Residual Heat Removal (RHR). Dr. Denning asked if any new scenarios developed due to the higher power level of EPU. Mr. Valente said no. Dr. Denning asked if TVA plans to perform PRA in other modes such as fire PRA or shutdown PRA. Mr. Couch responded TVA does not plan to perform a fire PRA or shutdown PRA. Dr. Denning asked if TVA uses an on-line risk monitor. Mr. Couch responded that TVA does use an on-line risk monitor and it is called Sentinel. Dr. Denning asked what alternatives did TVA consider instead of taking credit for containment overpressure. Mr. Couch responded that TVA looked for pumps with less NPSH and could not identify any pump to meet the 3 psi short-term and long-term containment pressure. Dr. Denning asked if the credit for containment overpressure was needed for a 5% power uprate. Mr. Couch responded yes. Dr. Denning asked if the 83% power in the Phase 3 power ascension test program the same as the current 100% licensed power level. Mr. Couch responded that 83% at the EPU conditions represents the current 100% licensed power level. Dr. Denning asked how TVA looks at transient performance. Does TVA use a thermal hydraulic calculation to compare plant performance during testing? How does TVA judge plant performance during power ascension? How long will Phase 3 last? Mr. Couch stated TVA is using the simulator for plant performance comparisons and Phase 3 will last approximately 70 days. Dr. Denning asked if TVA had pre-defined values or bars for various equipment and instrument performance parameters. Mr. Couch stated that TVA does not have pre-defined bars. Dr. Denning stated he is not comfortable without pre-defined bars and Mr. Couch said TVA can do it.

Dr. Kress asked if TVA plans to do a Level 3 PRA. Mr. Couch responded no.

Mr. John Barton asked about fire protection modifications. Mr. Valente answered that all the fire sprinklers were replaced. Mr. Barton asked about the fuse program. Mr. Valente responded that all the fuses and fuse holders that support Unit 1 recovery have been replaced. Mr. Barton asked about re-packing old valves. Mr. Valente responded that TVA cycled all small valves. Mr. Barton expressed his concern that cycling the valves may not be adequate to determine the condition of the packing. Mr. Barton asked if the FW tubes were replaced and what was the tube material. Mr. Valente stated the FW heaters were not replaced and the tube material is 304 stainless steel. Mr. Barton asked about the shroud inspections, what were the

corrective actions, and asked about coatings in containment. Mr. Valente said there were minor indications on the shroud welds and there were no through-wall flaws. He said there were no corrective actions at this time regarding the shroud. Mr. Valente stated the coatings in containment looked good overall. Mr. Barton asked why TVA performed 4 kV splices instead of replacing the cable. Mr. Valente stated it was due to conduit problems. Mr. Barton asked if TVA owns the BF switchyard and how work is coordinated in the switchyard. Mr. Couch stated that a TVA subsidiary owns the switchyard and all work is coordinated through the control room. Mr. Barton asked if labels must be permanent after the completion of SPOC Phase II. Mr. Jones answered that the labels must be permanent after completion of SPOC Phase II. Mr. Barton asked about pressure testing. Mr. Jones responded TVA performs in-service leak test. Mr. Barton stated that a large transient test can find problems.

Mr. Sieber asked if the combustible loading was analyzed for abandoned circuits in-place. Mr. Valente responded that abandon circuits are taken into account in the analysis. Mr. Sieber asked about the Appendix R exemptions. Mr. Valente stated TVA has 5 exemptions: (1) short-term core uncover, (2) fire suppression in the control room, (3) RHR pump room lack of separation is compensated by a water fire curtain, (4) intervening combustibles - fire loading low, and (5) fixed suppression in the control building. Mr. Sieber asked about the condition of the station batteries. Mr. Valente answered the station batteries have been replaced. Mr. Sieber asked what are the open items for Unit 1 for Three Mile Island action items. Mr. Valente responded the control room human performance/factors analysis. Mr. Sieber asked if hangers and supports were replaced or upgraded. Mr. Valente stated 85% of the hangers were changed due to a new response spectrum in the seismic analysis. Mr. Sieber asked if the transmission system operator has the same type of procedures as the plant. Mr. Valente said the transmission system operator has the same level of procedures as the plant. Mr. Sieber asked if TVA performed a heavy loads lifting analysis and who is the TVA crane manufacturer. Mr. Couch responded that TVA has performed a heavy load analysis and the crane manufacturer is Ederer. Mr. Sieber asked who signs for the acceptance after the completion of SPOC Phase I & II. Mr. Jones responded that the shift manager and plant manager sign for the acceptance after the completion of SPOC Phase I & II. Mr. Sieber asked how engineering calculations are checked at BF. Mr. Couch responded that TVA engineering calculations are peer-reviewed. Mr. Sieber stated that TVA has not performed a large transient test above the current 100% licensed power level.

Dr. Bonaca asked if there were problems with lay-up such as moisture concern or lube oil, if TVA took credit for lay-up, and one-time inspections vs. periodic inspections. Dr. Bonaca stated that there is no discussion in the application or the SER with open items regarding these inspections. Mr. Couch stated TVA will perform baseline inspections, perform inspections prior to entering the extended period of operation, perform inspections during the period of extended operation, then assess the extent and frequency of further inspections.

License Renewal Application

Mr. Rich DeLong of TVA presented slides regarding the license renewal. He said the LRA was submitted on December 31, 2003. Mr. DeLong stated the NRC SER with open items was issued on August 9, 2005. He said there were two open items: (1) drywell shell corrosion and (2) stress relaxation of the core plate hold-down bolts. Mr. DeLong stated there are 39 Aging Management Programs (AMPs) total, with 38 common to all three units and 1 for Unit 1 only. He said the Unit 1 specific AMP is the Unit 1 Periodic Inspection program. Mr. DeLong stated there are 12 existing AMPs requiring no enhancements since they are consistent with GALL. He said there are 10 existing AMPs requiring enhancements for all Units in order to comply with GALL. Mr. DeLong stated there are 11 existing AMPs revised to include Unit 1 and are already consistent with GALL. He said there are 6 new AMPs. Mr. DeLong described the Unit 1 Periodic Inspection Program.

Mr. Joe McCarthy of TVA presented slides on operating experience. He said Unit 1 met the requirement of 10 CFR 54.17(c). Mr. McCarthy stated that operating experience is not limited to that of the license renewal applicant.

Member Comments on License Renewal Application

Dr. Bonaca stated the LRA and the SER with open items is confusing regarding one-time inspections and periodic inspections. Dr. Bonaca said the new AMP for all three units regarding One-Time Inspection Program and the new AMP for Unit 1 only Unit 1 Periodic Inspection Program need to be kept separate in the SER. Dr. Bonaca stated he would expect TVA to perform a periodic inspection 2 years before entering the period of extended operation and at least one inspection during the extended operation period. Mr. DeLong responded TVA will make a determination of a frequency of periodic inspections after reviewing the rate of degradation. Dr. Bonaca stated the license renewal rule has never interpreted other utilities units operating experience can be applied generically. Dr. Bonaca said there is no operating experience for Unit 1 since lay-up. Dr. Bonaca said that Unit 1 does not need 20 years of operating experience but Unit 1 has not started up. Dr. Bonaca stated that nowhere in the SER or application is the justification for using Units 2 and 3 operating experience acceptable to apply to Unit 1. Mr. McCarthy stated that TVA will work with the staff to put the justification into the SER. Mr. Subbaratnam stated that the staff would need a letter from TVA regarding this justification to get it on the docket.

Extended Power Uprate Impact on License Renewal

Mr. Couch presented slides regarding the EPU impact on license renewal. He said the EPU was prepared using GE's ELTR1 and ELTR2 topical reports. Mr. Couch stated Unit 1 has GE 14 fuel and Units 2 and 3 are transitioning to Framatome A-10 fuel. He said the original licensed thermal power for Unit 1 is 3293 MWt and the requested EPU power is 3952 MWt. Mr. Couch described the modifications required to support EPU. He also explained the parameter increases for the various systems.

Member Comments on Extended Power Uprate Impact on License Renewal

Dr. Bonaca stated he would expect TVA to supply a report to the NRC for review which justifies the acceptability of entering the extended period of operation with the extended power uprate prior to entering the period. Dr. Bonaca stated that TVA needs to look at EPU before the license renewal extended period since BF Unit 1 is unique; it operated for 10 years, was in lay-up for 22 years, then will have only 4 years of operation at 120%.

Summary

Mr. Couch stated there are three major NRC approval issues: (1) license renewal at current power, (2) EPU, and (3) Unit 1 restart. He said ACRS approval is required for the LRA and the EPU. Mr. Couch stated final approval is required for Unit 1 restart by the Region II Regional Administrator and NRR Director.

Mr. Couch appreciated the Committee for allowing TVA the opportunity to present information.

Member Comments

Mr. Sieber stated that the ACRS has statutory responsibility for license renewal and power uprate. He said the ACRS is interested in reviewing the BF Unit 1 Restart Oversight Panel report when it is completed.

Dr. Bonaca stated the meeting for the Subcommittee on Plant License Renewal will meet on October 5, 2005. He said he would expect the meeting to be similar to other License Renewal Subcommittee meeting with some additional topics related to Unit 1 such as lay-up and the justification to use Units 2 and 3 operating experience for Unit 1.

Mr. Sieber thanked TVA for its presentation and he said it was helpful. Then, Mr. Sieber solicited comments from the ACRS consultants and Members.

Mr. Leitch stated the presentation was helpful especially the list of modifications. He said the clarification of the modifications performed on the three units was good. Mr. Leitch expressed his concern regarding the lack of EPU large transient testing. He stated he is especially concerned regarding the closure of the MSIV at 120% power. Mr. Leitch stated the MSIV closure at 120% power needs to be demonstrated.

Mr. Barton stated the presentation was helpful especially knowing what is being replaced. He expressed concern regarding the lack of large transient testing and the timing of the application.

Dr. Denning stated the presentation was helpful. He said separation of EPU and license renewal is key. He said he does not see a concern regarding periodic inspections. Dr. Denning stated EPU and start-up are not separable. Dr. Denning asked rhetorically if TVA should do a major trip test. He said Unit 1 will be at different conditions than before.

Dr. Kress stated the presentation was helpful. He said transient testing should be a condition for restart and is certainly an issue for EPU. Dr. Denning stated he would like to see a Level 3 PRA and the impact of risk on the Environmental Impact Statement. He said the SER ignores this risk.

Dr. Bonaca stated the presentation was helpful. He said he would like to see the documentation of the justification of using the Unit 2 and 3 operating experience for Unit 1 in the SER. Dr. Bonaca stated the periodic inspection program is good. He said large transient testing needs to be done. Dr. Bonaca stated this testing will be looked at as part of the EPU review.

Mr. Sieber endorsed Dr. Bonaca's comments. He thanked the staff for the SER and thanked TVA for the presentation. Mr. Sieber adjourned the meeting.

Subcommittee Decisions and Follow-up Actions

The Subcommittee Chairman will summarize the discussions to the full Committee during the October 2005 ACRS meeting.

Background Materials Provided to the Committee

1. TVA, "Application for the Renewal of the Operating Licenses for Browns Ferry Nuclear Units 1, 2, and 3," December 31, 2003 (ADAMS Accession No. ML040060361)
2. TVA, "Browns Ferry Nuclear Plant -Units 1, 2, and 3 - January 28, 2004 Meeting Follow-Up - Additional Information - Supplemental Information - Unit 1 Wet Lay-Up," February 19, 2004 (ADAMS Accession No. ML040510241)
3. U.S. Nuclear Regulatory Commission, "Browns Ferry Nuclear Plant, Units 1, 2, and 3 NRC License Renewal Scoping, Screening, and Aging Management Inspection Report 05000259/2004012 (DRS); 05000260/2004012 (DRS), 05000296/2004012 (DRS) ," January 27, 2005 (ADAMS Accession No. ML05027022)
4. Brookhaven National Laboratory, "Audit and Review Report for Plant Aging Management Reviews and Programs, Browns Ferry Nuclear Plant Units 1, 2, and 3," April 26, 2005 (ADAMS Accession No. ML051180464)
5. U.S. Nuclear Regulatory Commission, "Safety Evaluation Report with Open Items Related to the License Renewal of the Browns Ferry Nuclear Plant, Units 1, 2, and 3," August 2005 (ADAMS Accession No. ML052210484)

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).
