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

MEMORANDUM TO: Maitri Banerjee, Senior Staff Engineer
Reactor Safety Branch – A
ACRS

FROM: Said Abdel-Khalik, Chairman
Advanced Boiling Water Reactor (ABWR) Subcommittee

SUBJECT: CERTIFICATION OF THE MINUTES OF THE MEETING OF THE SUBCOMMITTEE ON ABWR REGARDING COL APPLICATION OF SOUTH TEXAS PROJECT (STP) ON MARCH 18, 2010

I hereby certify, to the best of my knowledge and belief, that the minutes of the subject meeting held on March 18, 2010, are an accurate record of the proceedings for that meeting.

/RA/ ***05/05/2010***

Said Abdel-Khalik, Chairman Date
ABWR Subcommittee

Certified: May 5, 2010 **Issued: May 5, 2010**
By: Said Abdel-Khalik

ADVISORY COMMITTEE ON REACTOR SAFEGUARDS
MINUTES OF THE MEETING OF THE SUBCOMMITTEE ON
ADVANCED BOILING WATER REACTOR (ABWR) REGARDING STP COLA
ON MARCH 18, 2010, IN ROCKVILLE, MARYLAND

On March 18, 2010, the ACRS Subcommittee on ABWR held a meeting in Room T-2B1, 11545 Rockville Pike, Rockville, Maryland. The purpose of the meeting was to receive a briefing from the NRC staff and the South Texas Project Nuclear Operating Company (STPNOC), the applicant for a combined operating license (COL) for a two unit ABWR at the existing reactor site in Texas regarding Chapters 5, 8, 16 and 17 of the COL FSAR and staff's SER with open items. The meeting was convened at 8:30 AM. The meeting was open to the public.

Attendees:

ACRS Members	**STNOC Presenters**	Steve Williams, NRO
Said Abdel-Khalik (Chairman)	Scott Head	John Lai, NSIR
J. Sam Armijo	Coley Chappell	Travis Chapman, NRO
John Stetkar	Tim Walker	Omid Tabatabai, NRO
Charlie Brown	Evans Heacock	John Budzynski, NRO
Jack Sieber	Tom Daley	Bhupendra Bhatia, NRO
ACRS Staff	Bill Stillwell	Andria Keim, NRO
Maitri Banerjee (DFO)	George Cashell	Steven Downey, NRO
NRC Presenters	Jim Tomkins	Jerry Wilson, NRO
Mark Tonacci, NRO	**NRC Staff/Consultant**	Joe Donoghue, NRO
George Wunder, NRO	Neil Ray, NRO	Steven Schaffer, NRO
Tekia Govan, NRO	Dinesh Taneja, NRO	Syed I. Haider, NRO
George Thomas, NRO	James Gilmer, NRO	Roy Karimi, ERI
Raj Anand, NRO	Chang Y. Li, NRO	Hanh Phan, NRO
Adrian Muniz, NRO	John Wu, NRO	**STPNOC & Others**
Mike Eudy, NRO	Robert K. Johnson, NRO	Kyle Dittman, STPNOC
Thomas Scarbrough, NRO	John McKirgan, NRO	Jim Agles, STPNOC
Tim Steingass, NRO	Michael Norato, NRO	R. H. Bense, STPNOC
Amar Pal, NRO	Juan Perelta, NRO	Craig Swanner, MPR/TANE
Craig Harbuck, NRO	Rich Clement, NRO	Wayne Massie, Unistar
Todd Hilsmeier, NRO	Ronald Lavera, NRO	R. I. Szoch, Unistar
Edward Roach, NRO	Rockey Foster, NRO	A. Della Greca, RAEI
George Georgiev, NRO	Bob Davis, NRO	Stephen Burdick, Morgan Lewis
Garrett Newman, NRO	Keith Tetter, NRO	John McIntyre, Public
Jose March-Leuba, ORNL	Dayna Dority, NRO	Ryuji Iwasaki, Toshiba

The presentation slides and handouts used during the meeting are attached to the Office Copy of the meeting transcript. The presentation to the Subcommittee is summarized below.

Opening Statement

Chairman Abdel-Khalik convened the meeting by introducing the ACRS members. He noted that the current briefing was to discuss the COL application (COLA) FSAR and the corresponding staff SER-with-open-items for Chapters 5, 8, 16 and 17. He stated that the telephone bridge line available to the stakeholders to listen to the proceeding would be opened for receiving comments and questions at the end of the meeting. After asking the staff and the applicant to identify the need for closing the meeting before going into discussion of proprietary information, Chairman Abdel-Khalik invited the staff to begin the presentation.

Introduction

In their opening statements, Mr. Mark Tonacci, the NRO Branch Chief for STP COLA, and Mr. George Wunder, the NRO Lead Project Manager, introduced the staff presenters. Mr. Scott Head, the STP Regulatory Affairs Manager, introduced the STP staff.

Followup Items from the March 2, 2010 ABWR Subcommittee Meeting

Mr. Wunder, NRO identified several follow-up items from the March 2, 2010 meeting that the staff was ready to discuss. The first such issue relates to the process for resolution of Part 21 reports, and Mr. Wunder described the procedure NRO follows to identify and review applicable Part 21 issues for each design certification and COLA. NRC issues generic communications to inform the applicants (similar to the process for informing the licensees) about the applicable issues and NRC expectations for resolution of each. However, as noted by Chairman Abdel-Khalik, the apparent lack of a list of the applicable Part 21 issues for STP COLA prevented this follow-up item from being closed. STP pointed out that they were preparing a list of all applicable Part 21 items issued after the original design certification and would develop a process to address them in the COLA space. The staff will follow up and address the subject at a future ACRS meeting.

The second follow-up item deals with a specific Part 21 report related to identification of non-conservative reactor trip setpoints for detection and suppression of thermal-hydraulic instability that uses the DIVOM (Delta CPR/Initial CPR vs. Oscillation Magnitude) correlation. Mr. Jim Tomkins of STP reported that STP made a commitment to provide an updated stability option III analysis with resolution of the Part 21 issue once fuel is procured and the associated safety analysis is performed. As GE is no longer involved, STPNOC has developed a plan, and Westinghouse is doing the work to support the Fuel Amendment. This item was closed in the ACRS follow-up list given this licensing commitment.

The next follow-up item was about the fuel related license amendment application that STP plans to submit after they receive a COL. This application will update the GE7 fuel to a more current design. Mr. Michael Eudy of NRO pointed out that there are about 10 topical reports (TRs) associated with the amendment, two of which have been submitted to the NRC. Although there is no current requirement for the staff to present a COL amendment to the ACRS, because of ACRS interest they would present the TRs of interest to the ACRS, and coordinate the review with the ABWR, Thermal-Hydraulics and the Power Uprate subcommittees. The staff expects to complete their review of the first topical report, on qualification of control system model (SAFIR), in the fall of 2010, and present to the ACRS soon after. The staff expects to receive the remaining eight topical reports in 2010. STP noted that they would support such ACRS review. The ABWR Subcommittee, with member Armijo's lead, will identify which TRs they are interested to review.

Regarding the next follow-up issue, occupational dose experience with BWRs and ABWRs worldwide (primarily Japanese and US), Mr. Ed Roach of NRO provided some data and compared them with the estimated STP values. Mr. Coley Chappell of STP also presented a slide showing the six year (1997-2002) average outage dose numbers for the Kashiwazaki-Kariwa Units 1 through 7 (K1 through K7). This showed a marked lowering of the dose during outages over this timeframe for ABWRs (Units 6 and 7), which is attributed to improved design, maintenance practices, and chemistry controls. Member Armijo asked if K6 and K7 implemented a hydrogen water chemistry program. Mr. Tom Daley of STP reported that because of the upgraded materials and the manufacturing processes for the ABWR, the Japanese had determined against the use of hydrogen water chemistry program. However, STP plans to use it as a defense-in-depth measure to reduce stress corrosion cracking in STP 3 and 4.

Regarding the follow-up item on staff's use of the GALE code and its update, Mr. Steve Schaffer of NRO noted that the ongoing update would not impact applications like STP because the COLA would predate the future publication of the code revision. The staff performed an evaluation to determine how the current GALE86 code, that uses an older version of ANSI 18.1 to calculate coolant concentrations, would predict the new advance reactor releases. They also benchmarked the code against the current operating experience from six BWRs and 11 PWRs. The staff found that the GALE code over-predicts most liquid and gaseous effluent releases by a factor of two, and often by an order of magnitude or more (by a factor of 100 to 1,000). For tritium and carbon-14, which are radio-nuclides important to the dose calculation, the predictions are reasonably accurate. Although the accuracy of predictions varies year to year, the staff found that the long term average numbers are quite accurate. The ongoing update of the GALE code would use current operating experience and a more recent version of the ANSI code.

The staff and the ACRS members discussed the status of the staff/STP follow-up items resulting from the ACRS meetings, and concluded that the items on the specific Part 21 report on stability, occupational dose experience on ABWRs, and the application of the GALE code could be closed. The follow-up item related to the fuel amendment TRs will reflect Dr. Armijo's lead in identifying the TRs of ABWR Subcommittee interest. The follow-up item on emergency diesel generator habitability issue related to high ambient temperature was deferred to the Chapter 9 future briefing. A copy of the follow-up items list that reflects this status is attached.

Chapter by Chapter Presentation by STP and NRO Staff

Mr. Chappell started the STP presentation on STP COLA FSAR Chapter 5, Reactor Coolant System and Connected Systems, with Mr. Daley discussing the RCIC pump design upgrade to a mono-block design (Tier 1 change). Although there is considerable operating experience with mono-block pump design in non-nuclear and auxiliary feed water system applications, experience in RCIC application is very limited (Lungmen 4, China and Shin Kori, South Korea were mentioned). Upon members Armijo and Stetkar's questions, STP discussed their interface with Shin Kori, and agreed to address the issue of the cycling of the RCIC system under an eight hour station black-out event. This was noted as a follow-up item for STP to address at a future ABWR Subcommittee meeting. Also, Chairman Abdel-Khalik's question regarding the basis for the end-of-life fluence value and uncertainty (error values) associated with it was resolved when Mr. Neil Ray of NRO explained that the COLA fluence value comes from the DCD. He explained the procedure NRC would use for revising reactor parameters like the fluence value and the review of the methodology in the Pressure Temperature Limit Report submitted by STP for NRC review.

Chairman Abdel-Khalik raised the issue of the system of units (English vs. Metric) and the need for consistency in all documents used at the control room, and the plant site including the supporting engineering documents. Mr. Kyle Dittman of STP stated that the DCD and the COLA

that use the Metric system are being converted to the English units (through the 50.59 process for completion post COL) as the documents that the operators would use are in English units. Also noted were some engineering documents that give numbers in both units side by side. The members were concerned about the potential of human errors caused by the inconsistent use of units and it was noted as an item for STPNOC follow-up by at a future meeting.

The staff started their presentation by discussing their review of STP's reactor vessel surveillance program and submittal of plant specific information a year after procurement of the reactor vessel to support approval before the fuel load (an open item in staff's SER). The staff also discussed their review of major departures from the DCD in Chapter 5. Regarding the COLA departure associated with reactor pressure boundary leakage a long discussion ensued regarding the basis for increasing the limits. A follow-up item resulted for STP to address how K6 and K7 RCS leakage technical specification (TS) limits compare with the proposed STP numbers, and justify the STP limits if higher. Also, at a future meeting, STP will address instrument sensitivity and how it compares with 1 gpm DCD number. Going back to member Stetkar's question on RCIC, Mr. Tom Scarbrough of NRO noted that STP was in the process of revising the RCIC topical report to describe its functional qualification. This would address system start up without tripping on overspeed, cycling of the system over a time period, and the associated ITAAC for demonstration (SER open item).

Mr. Evans Heacock of STP presented COLA Chapter 8, Electrical Power, by describing the offsite transmission network supplying the STP units. Unit 3 and 4 switchyard is separate from that of the currently operating Units 1 and 2. Member Stetkar explored worst case scenarios where common mode failures (transmission lines sharing the same corridor) could disable sources of offsite power. Mr. Heacock noted that upon loss of six transmission lines to the site, all four units will trip, and the tie-back for the two Dow lines would be sufficient to power the safety loads and non-safety loads. He also noted that STP was completing the analysis, and agreed to confirm at a future meeting. Member Stetkar also inquired about the number of closing coils on each switchyard breaker. He noted that the operators would need to reclose these breakers upon clearing of a loss of offsite power event and asked about the rated discharge time of the batteries supplying the coils. Mr. Heacock noted that STP was imposing requirements to the grid operators for maintenance of the batteries, but he recognized that he needed to get back to ACRS with an answer to these questions.

Regarding the plant medium voltage design, member Stetkar explored scenarios where the normal or the alternate preferred power may be lost. The members stated that they would want to hear about the transfer logic, for example upon loss of a UAT, when STP completes the design. Member Stetkar also asked if the 4.16 kV winding in CTG1 bus could carry two PIP buses together with one safety bus. These questions were taken as follow-up items. Regarding member Stetkar's question on dead bus transfer, Mr. Heacock stated that after a COL is obtained, STP may adopt an automatic transfer of a dead bus between the UAT and the RAT. If done before the COL it would be a departure from the DCD. Related to the ability of the EDG to operate at a higher ambient temperature (a follow-up item from the March 2, 2010 ABWR Subcommittee meeting), STP is planning to purchase a higher capacity EDG such that when derated due to higher ambient temperature it would still meet or exceed the design capacity.

The staff then discussed their review of COLA Chapter 8, including the departures, COL information items and open items from the staff's review. Member Stetkar asked if the staff had reviewed the proposed redistribution of the nine offsite power lines between the two sites (Units 1 and 2, and Units 3 and 4) regarding its impact on the operating Units 1 and 2. It appeared that the NRO staff reviewing the STP COLA did not review this matter as it is part of NRR's review

responsibility for operating rectors. The proposed change related to Units 1 and 2 will be implemented through the 10 CFR 50.59 process and NRR would be responsible for any needed review.

Member Sieber explored the impact of EMI and RFI issues related to solid state protection system and the impact of much quicker response of digital components in the switchyard and buses under various scenarios. STPNOC noted that, like operating Units 1 and 2, those issues would be evaluated at the detailed design stage and verified during testing phases before the commencement of operation of Units 3 and 4.

Mr. Steve Cashell presented Chapter 16 on TS for STPNOC. He described the departures from the DCD and the COL and site specific information items. He also mentioned STP's plan to implement some Technical Specifications Task Force (TSTF) and risk-managed TS items post COL. The plant-specific PRA will be completed prior to COL issuance, but external events (fire and seismic) PRA will be completed prior to initial operation. Mr. Craig Harbuck from NRO discussed the staff review of Chapter 16 and the open item that has two elements of ongoing review. One involves the setpoint methodology and the other the pressure-temperature limit report that STP plans to use.

Mr. Bill Stillwell, the PRA Supervisor and Mr. Tim Walker, Manager of QA at STP presented Chapter 17, the Quality Assurance Program. Mr. Walker discussed two full scope audits of Toshiba facilities at the Isogo Engineering Center and the Kayhan Operations Facility performed by STPNOC to qualify Toshiba. He also mentioned the ongoing STPNOC's resident oversight of reactor pressure vessel fabrication in Japan and various vendors involved with the reactor coolant system components, and discussed other learning experiences. Mr. Stillwell discussed the design and operational reliability assurance programs. Member Stetkar explored the STP process of populating the design reliability assurance program (DRAP) list. Mr. Stillwell mentioned that following the DCD, components with a Fussell-Vesely of .1 percent and a risk achievement worth of 5 are added to the DRAP list. However, consistent with the online programs (Units 1 and 2) like the Maintenance Rule risk importance determination for Units 1 and 2, components with a Fussell-Vesely greater than .005 and risk achievement greater than 2 are forwarded to an expert panel for further consideration. He also stated that a ranked list of components on a system basis would be provided to the expert panel and discussed the process used for ranking using the PRA and deterministic criteria. He also discussed the STP process for updating the DCD PRA. STP plans to populate the DRAP list by the end of 2010.

There are no departures to the DCD in Chapter 17. In the staff's presentation, Mr. Garrett Newman discussed their review of the STP's QA program including inspections done to review Toshiba's qualification as an alternate vendor, and the open item resulting from this review. Dr. Todd Hilsmeier discussed staff review of the DRAP and the Maintenance Rule program. Upon member Stetkar's question, Dr. Hilsmeier noted that the RAP lists needed to be provided in the FSAR for staff review. This resulted in a follow-up item related to the population of the DRAP list prior to the issuance of the COL, and the need for NRC agreement that STPNOC performed a comprehensive evaluation of both safety-related and non-safety-related risk and deterministic criteria in developing the list.

Chairman Abdel-Khalik opened the floor for the public, listening over the phone line, to comment or ask questions. Mr. John McIntyre from Charlotte, North Carolina, asked for a definition of RTNSS SSCs. MR. Hilsmeier defined the acronym RTNSS that stands for Regulatory Treatment of Non-Safety Systems, and provided some background information on why this program was developed for passive reactors. Chairman Abdel-Khalik noted that RTNSS does not apply to STP 3 and 4 as they are not of passive reactor design.

Closing Statements

In their closing comments, member Sieber noted that the issues he had in mind at the beginning of the meeting were adequately addressed. Member Stetkar thanked the applicant and the staff for their forthcoming response to his questions. With other members reflecting similar position, Chairman Abdel-Khalik thanked the staff and the applicant, and closed the meeting at 4:15 PM.

Action Items List

A copy of the follow-up action items for the staff, applicant or the ACRS, resulting from this and the previous ABWR Subcommittee meeting on STP COLA is attached.

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

May 5, 2009

MEMORANDUM TO: ACRS Members

FROM: Maitri Banerjee, Senior Staff Engineer ***/RA/***
Reactor Safety Branch – A
ACRS

SUBJECT: CERTIFICATION OF THE MINUTES OF THE MEETING OF THE SUBCOMMITTEE ON ABWR REGARDING COL APPLICATION OF SOUTH TEXAS PROJECT ON MARCH 18, 2010

The minutes for the subject meeting were certified on May 5, 2010 as the official record of the proceedings of that meeting. A copy of the certified minutes is attached. Also attached is a copy of the actions items resulting from the deliberation.

Attachment: As stated

cc: C. Santos
A. Dias

No.	MTG/ date generated	ACTION ITEM	CONTEXT	AREA	LEAD(s)	COMMENTS / ACTION / DISPOSITION	Date Resolved
March 2, 2010 Subcommittee Meeting							
1	3/2/10	Dr. Armijo expressed interest in the fuel related topical reports and the effect of the fuel change (amendment to COL) on the analyses in Chapters 4 and 15. Communicate ACRS desire to review fuel amendment (first reload) application that replaces GE 7 fuel (DCD) to contemporary fuel (Armijo)	Chapter 4	SER	~~NRC/~~ACRS (Abdullahi/ Banerjee)	~~At the 5/20/10 meeting the staff will tell the Subcommittee which topical reports will be presented to them and when. The staff will also answer the question of whether or not the amendment will go before ACRS~~. Potential impact to other areas including Chapters 6 and 15 in addition to Chapter 4. A list of fuel amendment related technical/ topical reports has been provided. ACRS (Dr. Armijo lead) to determine which ones the Committee would like to review and the responsible Subcommittee(s). Proposal to be presented at the April P&P.	
2	3/2/10	Future presentation of staff and STP to address diesel qualification to 60 degrees C, related occupancy issues and HVAC changes. (Abdel-Khalik)	Chapter 9	COLA/SER	STP	STP to provide additional discussion on habitability at future Subcommittee meeting on impact of higher temperature (departure T1 2.15-2) when Chapter 9 is presented to the Subcommittee. The issue of diesel qualification was addressed at 3/18/10 meeting satisfactory to the members.	

ACRS ABWR Subcommittee Action Items

No.	MTG/ date generated	ACTION ITEM	CONTEXT	AREA	LEAD(s)	COMMENTS / ACTION / DISPOSITION	Date Resolved
3	3/2/10	Part 21 reports issued on stability analysis post DCD need to be addressed (Abdel-Khalik)	Chapters 4 and 15	COLA/SER	STP/NRO	STP and staff to address at March 18, 2010 meeting. Closed as follows: STPNOC will provide an updated Stability Option III analyses including resolution of the Part 21 issues before fuel load (COM 4.4-3) Staff will followup commitment through established processes.	3/18/10
4	3/2/10	Part 21 reports issued post DCD - how staff identifies, captures and addresses Part 21 issues that affect the ABWR design? (Abdel-Khalik)	Chapters?	COLA/SER	NRO	Staff plans to address it at the March 18, 2010, meeting. STP is preparing a list of all applicable part 21 items since original design certification and will develop a process to address them in the COLA space. Staff to followup and address at a future ACRS meeting.	
5	3/2/10	Deletion of MSIV closure and scram on hi radiation	Chapters 7 and 19	DCD	-	BWROG Topical Report reviewed and approved by NRC. Closed	3/2/10
6	3/2/10	FW line break mitigation – This accident is not described in Chapter 15 (Abdel-Khalik).	Chapter 6	COLA/SER	STP/NRO	The applicant stated that this accident does not affect Chapter 15 doses and that the entirety of the accident and its effects will be discussed in the presentation on Chapter 6. Address during 5/20/10 meeting.	
7	3/2/10	FPGA – address in more detail (e.g., inter-channel communication, determinancy) (Brown)	Chapter 7	COLA/SER	STP/NRO	Staff to discuss at 5/20 meeting. NRO to provide documents to Subcommittee in advance of briefing on this topic as needed.	

ACRS ABWR Subcommittee Action Items

No.	MTG/ date generated	ACTION ITEM	CONTEXT	AREA	LEAD(s)	COMMENTS / ACTION / DISPOSITION	Date Resolved
8	3/2/10	Address GSI-191 flow blockage (not just for fuel) (Abdel- Khalik)	Chapter 6	COLA/SER	STP/NRO	Staff and STP to discuss this issue during presentation on strainers and downstream effects testing as part of Chapter 6 on May 20, 2010.	
9	3/2/10	Address how underground release is handled (e.g., H3) in STP design and operational programs. Address if underground piping carrying radioactive liquids run through tunnels, designed for zero leakage, or above/ below the water table. (Ryan)	Chapter 11	COLA/SER	STP	To be discussed at a future meeting	
10	3/2/10	GALE code – impact of the very conservative approach used by the staff and need for uncertainty analysis and use of actual experience data. (Ryan)	Chapter 12	SER	NRO	Dr. Ryan asked if staff has any insights on how results from the new GALE code will compare to results from the old GALE code. What impact is this likely to have on the application? He also expressed concern regarding the effect on the applicant of making significant changes to RGs in the middle of a review? Staff to address this issue generically at a future meeting. Staff discussed the issue at 3/18/10 SC meeting to Committee's satisfaction. The issue is closed.	3/18/10

ACRS ABWR Subcommittee Action Items

No.	MTG/ date generated	ACTION ITEM	CONTEXT	AREA	LEAD(s)	COMMENTS / ACTION / DISPOSITION	Date Resolved
11	3/2/10	Disparity between staff and STP presentation related to all x/q values being bounded by DCD.	Chapter 15	SER	NRO	Staff acknowledged error in presentation slides. Issue closed.	3/2/10
12	3/2/10	Related to HFE, how specific DAC acceptance criteria be amenable to staff inspection (Bley)	Chapter 18	SER	ACRS	DAC issues will be closed after the issuance of the COL. This means that the Committee will not be able to track the closure of DAC-related technical issues before they are requested to write a letter on the staff's SER. ACRS to receive briefing on digital I&C DAC at 570 ACRS meeting on 3/5/10, and decide if further follow-up is needed.	
13	3/2/10	Subcommittee would like a better understanding of how adding dry/wetwell pressure indication on SPDS gives higher assurance of control room capability post accident when SPDS is non-safety related (Stetkar)	Chapter 18	SER	NRO	Staff to provide additional information to ACRS.	
14	3/2/10	EDG qualification to increased ambient temperature (Stetkar)	Chapters 8, 9	FSAR/SER	STP/NRO	STP to discuss at next meeting. This item is closed.	3/18/10

ACRS ABWR Subcommittee Action Items

No.	MTG/ date generated	ACTION ITEM	CONTEXT	AREA	LEAD(s)	COMMENTS / ACTION / DISPOSITION	Date Resolved
15	3/2/10	Subcommittee would like a better understanding of the basis for SER conclusion related to MCR and RSS and operator ability in switching from a digital MCR to analog RSS (Stetkar)	Chapter 18	SER	NRO	Staff to address this question in the context of the Chapters 7 and 18 discussions on RSS.	
16	3/2/10	May need more aggressive staff review of HFE. Dr. Bonaca indicated that he might have questions on Chapter 18 (human factors engineering) after he reflected on the presentation. (Bonaca)	Chapter 18	SER	ACRS/NRO	Staff to address: Dr. Bonaca referring to questions from Dr. Stetkar above – Treatment of SPDS, core cooling display parameters and their bases.	
17	3/2/10	Staff needs to formalize handling of DAC	Chapter 18	NRO Programs	ACRS/NRO	Future ACRS Briefings to address. Also see item 12.	
18	3/2/10	Related to SER open item 1-3 on aging management, it was noted that detailed technical review is conducted under license renewal process when it should be an issue to consider from the first day on. Dr. Stetkar noted that additional guidance in the area may be helpful.	Chapter 1	Aging management	ACRS/NRO	Staff plans to close this issue in the staff's final SER with no open items.	

ACRS ABWR Subcommittee Action Items

No.	MTG/ date generated	ACTION ITEM	CONTEXT	AREA	LEAD(s)	COMMENTS / ACTION / DISPOSITION	Date Resolved
19	3/2/10	Occupational doses received from ABWRs and how they compare to occupational doses at other reactors. Can we compare ABWR to other Japanese BWRS as well as to U.S. BWRs? (Ryan)	Chapter 12	ABWR occupational dose	NRO	Staff to address this issue at a future meeting. At 3/18 SC meeting, NRO and STP provided occupational dose data for Japanese and US BWRs since 1993 and the average dose for the Kashiwazaki-Kariwa plants, two of which are ABWR units, from 1997 thru 2002.	3/18/10
			March 18, 2010 Subcommittee Meeting				
20	3/18/10	Number of times RCIC is expected to cycle on and off during an 8 hour SBO event (Stetkar)	Chapter 5	RCIC	STP	RCIC qualification and Operator response may be challenged due to repeated cycling	
21	3/18/10	Rx vessel EOL fluence value and error band (Abdel-Khalik/Armijo)	Chapter 5	Rx Vessel Material	STP	COLA uses DCD value, will be updated once PTLR is finalized/approved	3/18/10
22	3/18/10	Ensure all documents (engineering, design, procedures, PTS etc) at the plant use a consistent set of units (either British or Metric). (Abdel-Khalik)	All	All	STP	Too may number of problems and near misses happen when operators and technicians at the plant have to take action based on inconsistent units.	

ACRS ABWR Subcommittee Action Items

No.	MTG/ date generated	ACTION ITEM	CONTEXT	AREA	LEAD(s)	COMMENTS / ACTION / DISPOSITION	Date Resolved
23	3/18/10	Address how K6 and K7 RCS leakage TS limits compare with proposed STP numbers, and justify STP limits, if higher. Also address instrument sensitivity and how it compares with 1 gpm number. (Armijo)	Chapter 5	PTS	STP	Unidentified leakage limit was increased from 1 gpm DCD value to 5 gpm STP TS as STP is not using LBB.	
24	3/18/10	Confirm that East transmission lines are capable of supplying all 4 units' safety loads when other lines are lost. (Stetkar/Sieber)	Chapter 8	FSAR	STP	Concern was that given shared transmission right of way and towers, all other lines could be lost under a storm situation.	
25	3/18/10	State if there are single or double closing coils on switchyard breakers. (Stetkar)	Chapter 8	FSAR	STP	There may be additional questions if the answer is "single."	
26	3/18/10	Provide switchyard control system backup battery discharge time. (Stetkar/Sieber)	Chapter 8	FSAR	STP	Breakers may not close after LOOP clears if battery exhausted.	
27	3/18/10	Performance of switching logic under various electrical transients. (Stetkar)	Chapter 8	FSAR	STP	STP may a want to address it beyond COL while detailed design is finalized.	

ACRS ABWR Subcommittee Action Items

8	3/18/10	NRO to address how the SBO rule requirements are being ensured after operator action time is factored into the scenario with STP specification of "less than 10 minutes CT startup time." (Stetkar)	Chapter 8	SER	NRO	As STP chose not to do SBO coping analysis, they have to demonstrate that the CTs are capable of powering shutdown buses within 10 minutes of the onset of SBO (10 CFR 50.63 (c)(2)). The scenario involves needed operator action to shed/load buses before breaker can be closed.
9	3/18/10	Address qualification of submerged 345 KV cables. (Brown)	Chapter 8	FSAR	STP	High water table prompted question on qualified life.
0	3/18/10	Address when DRAP list will be effectively populated and staff review is completed. How does staff ensure the DRAP list and the process (COLA vs. ITAAC) related to it are acceptable? (Stetkar)	Chapter 17	FSAR/SER	STP/NRO	With evolving plant PRA and DRAP, members were concerned that ITAAC may not be an appropriate closer mechanism for DRAP list.
1	3/18/10	4.16 kV winding in CTG1 bus could carry two PIP buses together with one safety bus (Stetkar)	Chapter 8	FSAR/SER	STP	STP to address at a future meeting
			May 20, 2010 Subcommittee Meeting			
2						
3						
4						
			June 8, 2010 Subcommittee			
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7						
			June 24, 2010 Subcommittee Meeting			
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ACRS ABWR Subcommittee Action Items

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