DSER Section 4

Page, Section, and Paragraph	DSER Text	Suggested Revision	Justification	Category
Page 4-1, Section 4.1, Paragraph 2	TLAAs are certain plant-specific safety analyses that ~~are based on an explicitly assumed 40-year plant life~~.	TLAAs are certain plant-specific safety analyses that **involve time-limited assumptions defined by the current operating term.**	Not all TLAA's are based on 40-years Reference 50.54.3(a)	2
Page 4-2, Section 4.1.2, Paragraph 4	In its LRA, the applicant stated that it performed a search of the CLB ~~and industry license renewal related documents~~ and evaluated each exemption in effect for TLAA applicability.	In its LRA, the applicant stated that it performed a search of the CLB and evaluated each exemption in effect for TLAA applicability.	LRA Section 4.1.2.	2
Page 4-3, Section 4.1.2, Paragraph 5	… The applicant further stated that it revised LRA Section 4.1.2 to state that "No TLAA related exemptions granted pursuant to 10 CFR 50.12 were identified."…	… The applicant further stated **in letter dated October 25, 2004,** that it revised LRA Section 4.1.2 to state that "No TLAA related exemptions granted pursuant to 10 CFR 50.12 were identified."…	Clarification NRC 2004-0111	2
Page 4-7, Section 4.2.1.2, Paragraph 4	In RAI 4.2-1, dated September 23, 2004, the staff requested the applicant to modify its evaluation of reactor vessel TLAAs (P-T, USE, RTPTS) using the same projected fluence basis.	Add another paragraph summarizing the commitments and PTS approach as defined in our October 25, 2004 submittal (NRC 2004-0111) which provided a single fluence basis.	Clarification NRC 2004-0111.	2
Page 4-7, Section 4.2.1.2, Paragraph 6	In its letter dated September 10, 2004, the applicant revised Sections 4.1.2, 4.2.1, 4.2.2, 4.2.3, and Appendices A15.2.18, A15.4.1, A15.5, and B2.1.18. ~~The staff noted from the revised sections that the applicant did not~~	In its letter dated September 10, 2004, the applicant revised Sections 4.1.2, 4.2.1, 4.2.2, 4.2.3, and Appendices A15.2.18, A15.4.1, A15.5, and B2.1.18. In RAI 4.2-2, the staff requested the applicant to provide the estimated	Clarification NRC 2004-0085 page 12 specifically identified the requested information. NRC 2004-0111.also	2

Page, Section, and Paragraph	DSER Text	Suggested Revision	Justification	Category
	~~respond as to when Unit 2 will exceed the PTS screening criteria.~~ In RAI 4.2-2, the staff requested the applicant to provide the estimated EFPY and calendar year at which RTPTS values for Unit 2 will exceed the screening criteria.	EFPY and calendar year at which RTPTS values for Unit 2 will exceed the screening criteria. Add another paragraph summarizing the commitments and PTS approach as defined in our October 25, 2004 submittal (NRC 2004-0111) which provided a single fluence basis.	specifically identified the requested information in the cover letter.	
Page 4-8, Section 4.2.1.4, Paragraph 2	… the applicant chose to maintain and monitor the ~~entire vessel~~ under 10 CFR 54.21(c)(1)(iii) criteria.	… the applicant chose to maintain and monitor the **Unit 2 vessel** under 10 CFR 54.21(c)(1)(iii) criteria.	Clarification.	2
Page 4-10, Section 4.2.2.2, Paragraph 1	The ~~EOL~~ lower bounding J-R values and all acceptance ratios are summarized in LRA Table 4.2.2-1.	The **EOEL** lower bounding J-R values and all acceptance ratios are summarized in LRA Table 4.2.2-1.	Clarification	2
Page 4-11, Section 4.2.3.4, Paragraph 1	The staff reviewed the applicant's TLAA on P-T limits, as summarized in LRA Section 4.3.4, and determined that the RV beltline materials at Units 1 and 2, will continue to comply with the staff's requirements in 10 CFR 50.60 throughout the period of extended operation. The staff therefore concluded that the applicant's TLAA for P-T limits complies with the staff's acceptance criterion for TLAAs in	.	Did the NRC review the P-T limits submitted for 60-years or simply credited the existing PTLR controls for ensuring the 60-year P-T limits will be acceptable?	Question

Page, Section, and Paragraph	DSER Text	Suggested Revision	Justification	Category
	10 CFR 54.21(c)(1)(ii), and that the safety margins established and maintained during the current operating term will be maintained during the period of extended operation, as required by 10 CFR 54.21(c)(1).			
Page 4-12, Section 4.3, Paragraph 2	The applicant discussed the design requirements for components of the reactor coolant system. The reactor vessel ~~and reactor vessel internals~~ were designed and fabricated in accordance with the requirements ~~for Class 1 components~~ stated in the ASME Boiler and Pressure Vessel Code (ASME Code) Section III, ~~1965 Edition through summer 1965 and 1966 Addenda~~. The reactor coolant pressure boundary piping and components were designed and fabricated in accordance with the requirements of USAS B31.1, "Power Piping Code," ~~1967~~ Edition. Other safety-related piping and fittings were also designed and fabricated in accordance with the requirements of USAS B31.1, 1967 Edition.	The applicant discussed the design requirements for components of the reactor coolant system. The reactor vessel**s** were designed and fabricated in accordance with the requirements stated in the ASME Boiler and Pressure Vessel Code (ASME Code) Section III, **1965 Edition for Unit 1 and 1968 Edition through winter 1968 Addenda for Unit 2.** The reactor coolant pressure boundary piping and components were designed and fabricated in accordance with the requirements of USAS B31.1, "Power Piping Code," **1955** Edition. Other safety-related piping and fittings were also designed and fabricated in accordance with the requirements of USAS B31.1, 1967	LRA Section 4.3.1, 4.3.2 and	1

Page, Section, and Paragraph	DSER Text	Suggested Revision	Justification	Category
		Also change the words to be in harmony with the 1st paragraph in section 4.3.2.1, which is correct for the reactor vessel internals.		
Page 4-13, Section 4.3.1.1, Paragraph 1	The applicant stated that the reactor pressure vessel heads are scheduled for replacement in the 2005 ~~and 2006~~ refueling outages.	The applicant stated that the reactor pressure vessel heads are scheduled for replacement in the 2005 refueling outages.	Clarification	2
Page 4-15, Section 4.3.2.2, Paragraph 1	The staff's review of LRA Section ~~4.3.2-1~~ identified areas in which additional information…	The staff's review of LRA Section **4.3.2** identified areas in which additional information…	Clarification	3
Page 4-16, Section 4.3.3.1, Paragraph 1	In LRA Section 4.3.3, the applicant stated that both units have full-length (F/L) control rod drive mechanisms (CRDMs). Unit 2 ~~also has~~ part-length (P/L) CRDMs.	In LRA Section 4.3.3, the applicant stated that both units have full-length (F/L) control rod drive mechanisms (CRDMs). Unit 2 **had** part-length (P/L) CRDMs.	Unit 2 Head replaced in 2005	2
Page 4-16, Section 4.3.3.1, Paragraph 3	The applicant also stated that the CRDMs are scheduled for replacement in the 2005 ~~and 2006~~ refueling outages,…	The applicant also stated that the CRDMs are scheduled for replacement in the 2005 refueling outages,…	Clarification	2
Page 4-17 Section 4.3.3.2 Para. 1	The applicant also stated that the CRDMs are scheduled for replacement during the 2005 ~~and the 2006~~ refueling outages.	The applicant also stated that the CRDMs are scheduled for replacement during the 2005 refueling outages.	Clarification	2
Page 4-19, Section 4.3.4.2, Paragraph 2	… The staff found the applicant's response acceptable because the components that were evaluated for fatigue correspond to the components ~~are~~ listed in NUREG-	… The staff found the applicant's response acceptable because the components that were evaluated for fatigue correspond to the components listed in NUREG-	Clarification	3

Page, Section, and Paragraph	DSER Text	Suggested Revision	Justification	Category
	1801 Table IV.D1.	1801 Table IV.D1.		
Page 4-19, Section 4.3.4.2, Paragraph 8	On the basis of the above discussion and its review, the staff agreed with the applicant's conclusion that the fatigue analyses of the PBNP steam generators will remain valid for the period of extended operation, in accordance with the requirements of 10 CFR 54.21(c)(1)(ii). The staff's concerns described in RAIs 4.3.4-1, 4.3.4-2, and 4.3.4-3 are resolved.	On the basis of the above discussion and its review, the staff agreed with the applicant's conclusion that the fatigue analyses of the PBNP steam generators will remain valid for the period of extended operation, in accordance with the requirements of 10 CFR 54.21(c)(1)(ii) **and (iii).** The staff's concerns described in RAIs 4.3.4-1, 4.3.4-2, and 4.3.4-3 are resolved.	See LRA Section 4.3.4, page 4-44.	2
Page 4-20, Section 4.3.4.4, Paragraph 1	The staff therefore concluded that the applicant's TLAA for SG structural integrity complies with the staff's acceptance criterion for TLAAs in 10 CFR 54.21(c)(1)(ii), and that the safety margins established and maintained during the current operating term will be maintained during the period of extended operation, as required by 10 CFR 54.21(c)(1).	The staff therefore concluded that the applicant's TLAA for SG structural integrity complies with the staff's acceptance criterion for TLAAs in 10 CFR 54.21(c)(1)(ii) **and (iii)**, and that the safety margins established and maintained during the current operating term will be maintained during the period of extended operation, as required by 10 CFR 54.21(c)(1).	See LRA Section 4.3.4, page 4-44.	2
Page 4-22, Section 4.3.5.1, Paragraph 1	… The projected combined fatigue usage factors (including in-surge/out-surge) for three bounding locations are shown in LRA Table 4.3.5-1…	… The projected combined fatigue usage factors (including in-surge/out-surge) for **the** three bounding locations are shown in LRA Table 4.3.5-1…	Clarification	3

Page, Section, and Paragraph	DSER Text	Suggested Revision	Justification	Category
Page 4-25, Section 4.3.6.1, Paragraph 5	For the transients that were not bounded by the original design specification transients, the ASME ~~Code Section III Class 1, 1965 Edition~~, fatigue waiver criteria…	For the transients that were not bounded by the original design specification transients, the ASME fatigue waiver criteria…	LRA Section 4.3.6, page 4-49	2
Page 4-28, Section 4.3.7.2, Paragraph 1	The fatigue TLAAs were performed by Westinghouse in response to the criteria of NRC Inspection & Enforcement (I&E) Bulletin 88-11 to evaluate the structural integrity of the surge lines to thermal stratification transients.	The fatigue TLAAs were performed by Westinghouse in response to the criteria of NRC Inspection & Enforcement (I&E) Bulletin 88-11 to evaluate the structural integrity of the surge lines **due** to thermal stratification transients.	Clarification	2
Page 4-29, Section 4.3.8.1, Paragraph 4	In view of the lack of margin with the Unit 1 piping system analysis result for ~~EOL~~,…	In view of the lack of margin with the Unit 1 piping system analysis result for **EOEL**,…	Clarification	2
Page 4-32, Section 4.3.9.2, Paragraph 1 & 3	… the requirements of the USAS B31.1, 1967 Edition, Power Piping Code. … any PBNP piping system designed to USAS B31.1, 1967 Edition, it is highly unlikely that the 7000-cycle limit will be exceeded for the 60-year life of the plant.	… the requirements of the USAS B31.1, 1967 Edition, Power Piping Code **with the exception of the Reactor Coolant System piping and components which is the 1955 Edition**. … any PBNP piping system designed to USAS B31.1, 1967 Edition **with the exception of the Reactor Coolant System piping and components which is the 1955 Edition**, it is highly unlikely that the 7000-cycle limit will be exceeded for the 60-year life of the	Clarification	1

Page, Section, and Paragraph	DSER Text	Suggested Revision	Justification	Category
		plant.		
Page 4-34, Paragraph 4	Surge Line Locations. Since the PBNP pressurizer surge lines were designed and constructed to USAS B31.1-~~1967~~, …	Surge Line Locations. Since the PBNP pressurizer surge lines were designed and constructed to USAS B31.1-**1955**, …	Clarification	1
Page 4-34, Section 4.3.10.1, Last full Paragraph	… An analysis was performed and CUFs for the operating life of the plant were computed based on this data to determine the incremental CUF for known plant transients, including the effects of in-surge/out-surge and environmental effects.	Add additional sentence. **"The analysis showed that the environmental CUF was well below 1 for a 60 year operating life."**	See LRA Section 4.3.10.	2
Page 4-35, Section 4.3.10.1, Paragraph 6	• instrument nozzle ~~0.6035~~	• instrument nozzle **0.6293**	LRA Section 4.3.10 page 4-64.	2
Page 4-37, Paragraph 3	The bounding event was determined to be the loss of charging~~/~~loss of letdown event.	The bounding event was determined to be the loss of charging **and** loss of letdown event **with delayed return to service**.	NRC 2005-0004	2
Page 4-41, Section 4.3.11.4, Paragraph 1	The staff reviewed the applicant's TLAA on containment liner plate fatigue analysis, as summarized in LRA Section ~~4.3.12~~, and…	The staff reviewed the applicant's TLAA on containment liner plate fatigue analysis, as summarized in LRA Section **4.3.11**, and…	LRA Section 4.3.11	2

Page, Section, and Paragraph	DSER Text	Suggested Revision	Justification	Category
	…10 CFR 54.21(c)(1)(~~ii~~), and that the safety margins established and maintained during the…	…10 CFR 54.21(c)(1)(**i**), and that the safety margins established and maintained during the…		
Page 4-43, Section 4.3.13.2, Paragraph 6	As stated in ~~the LRA~~, a rated load lift…	As stated in **response to RAI 4.3.13-1**, a rated load lift…	See NRC 2005-0005	2
Page 4-43, Section 4.3.13.2, Paragraph 7	PAB crane - Usage is comprised of three components: fuel cask lifts, maintenance loads, and original fuel casks (~~VCS-24~~).	PAB crane - Usage is comprised of three components: fuel cask lifts **(NUHOMS)**, maintenance loads, and original fuel casks **(VSC-24).**	See NRC 2005-0005	2
Page 4-44, Section 4.3.13.4 Paragraph 1	…the staff's acceptance criterion for TLAAs in 10 CFR 54.21(c)(1)(~~ii~~), and that the safety margins…	…the staff's acceptance criterion for TLAAs in 10 CFR 54.21(c)(1)(**i**), and that the safety margins…	See LRA Section 4.3.13	2
Page 4-44, Section 4.4.1, Paragraph 1	The staff review of WCAP-15338 is contained in a September 25, ~~2002~~, letter to R. A. Newton (Westinghouse Owners Group)…	The staff review of WCAP-15338 is contained in a September 25, **2003**, letter to R. A. Newton (Westinghouse Owners Group)…	Reference 20 of LRA page 4-100.	2
Page 4-48, Section 4.4.2.4, Paragraph 1	… The staff therefore concluded that the applicant's TLAA for RCP Flywheel Analysis complies with the staff's acceptance criterion for TLAAs in 10 CFR 54.21(c)(1)~~(ii)~~,…	… The staff therefore concluded that the applicant's TLAA for RCP Flywheel Analysis complies with the staff's acceptance criterion for TLAAs in 10 CFR 54.21(c)(1)**(i)**,…	See LRA Section 4.4.2	2
Page 4-52, Section 4.4.4.2, Paragraph 1	… Also, for a postulated flaw, a fatigue crack growth analysis was carried out to demonstrate that fatigue crack growth was negligible over ~~40~~ years…	… Also, for a postulated flaw, a fatigue crack growth analysis was carried out to demonstrate that fatigue crack growth was negligible over **60** years…	See LRA Section 4.4.4	2
Page 4-52, Section 4.4.4.2, Paragraph 3	… "Alloy 82/182 Pipe Butt Weld Safety Assessment for U.S. PWR Plant Designs (MRP-113)," was	Clarify in text.	EPRI has stated that the final report is not yet complete.	2

Page, Section, and Paragraph	DSER Text	Suggested Revision	Justification	Category
	issued in July 2004…			
Page 4-55, Section 4.4.5.4, Paragraph 1	…The staff therefore concluded that the applicant's TLAA for pressurizer surge line piping LBB complies with the staff's acceptance criterion for TLAAs in 10 CFR 54.21(c)(1)~~(ii)~~, and…	…The staff therefore concluded that the applicant's TLAA for pressurizer surge line piping LBB complies with the staff's acceptance criterion for TLAAs in 10 CFR 54.21(c)(1)**(i)**, and…	See LRA Section 4.4.5	2
Page 4-57, Section 4.4.6.4, Paragraph 1	… The staff therefore concluded that the applicant's TLAA for Class 1 accumulator injection line piping LBB complies with the staff's acceptance criterion for TLAAs in 10 CFR 54.21(c)(1)~~(ii)~~,…	… The staff therefore concluded that the applicant's TLAA for Class 1 accumulator injection line piping LBB complies with the staff's acceptance criterion for TLAAs in 10 CFR 54.21(c)(1)**(i)**,…	See LRA Section 4.4.6	2
Page 4-58, Section 4.4.7.2, Paragraph 1	… WCAP-~~15107~~-P-A, Revision 1, documents Class 1 RHR line piping geometry, loading, and material properties used in the fracture mechanics evaluation.	… WCAP-**15105**-P-A, Revision 1, documents Class 1 RHR line piping geometry, loading, and material properties used in the fracture mechanics evaluation.	See LRA Section 4.4.7	2
Page 4-58, Section 4.4.7.2, Paragraph 3	Assessments of plant cycles and transients demonstrate that the fatigue crack growth for the 40-year operating period is acceptable for the RHR ~~surge~~ line piping…	Assessments of plant cycles and transients demonstrate that the fatigue crack growth for the 40-year operating period is acceptable for the RHR **suction** line piping…	See LRA Section 4.4.7	2
Page 4-58, Section 4.4.7.2, Paragraph 4	The RHR ~~surge~~ line has no CASS components; therefore,…	The RHR **suction** line has no CASS components; therefore,…	See LRA Section 4.4.7	2
Page 4-59, Section 4.4.7.4, Paragraph 1	… The staff therefore concluded that the applicant's TLAA for RHR line piping LBB complies with the staff's acceptance criterion for	… The staff therefore concluded that the applicant's TLAA for RHR line piping LBB complies with the staff's acceptance criterion for	See LRA Section 4.4.7	2

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	TLAAs in 10 CFR 54.21(c)(1)~~(ii)~~, and…	TLAAs in 10 CFR 54.21(c)(1)**(i)**, and…		
Page 4-60, Section 4.5.1.1, Paragraph 4	… tendons. In a letter, dated ~~March 15~~, 2005, the applicant withdrew this program and deleted LRA Section B3.3….	… tendons. In a letter, dated **February 23**, 2005, the applicant withdrew this program and deleted LRA Section**, A15.3.1 and** B3.3….	See NRC 2005-0020	2
Page 4-60, Section 4.5.1.2, Paragraph 1	In addition to the analysis results summarized in this TLAA, the staff reviewed applicable aspects of LRA Section B2.1.2, ASME Section XI, Subsections IWL Inservice Inspection Program…	In addition to the analysis results summarized in this TLAA, the staff reviewed applicable aspects of LRA Section B2.1.2, ASME Section XI, Subsections **IWE and** IWL Inservice Inspection Program…	See LRA Section B2.1.2	2
Page 4-61, Section 4.5.1.2, 2nd full para.	~~The~~ approach was not acceptable, as it was based on measurements of one tendon in a group…. In ~~a draft~~ response, the applicant noted that this trend line information was based on draft calculations, and that ~~it intended to~~ resubmit the information, if the final approved calculation revealed a different conclusion.	**This** approach was not acceptable, as it was based on measurements of one tendon in a group…. In **the** response, the applicant noted that this trend line information was based on draft calculations, and that **they would** resubmit the information, if the final approved calculation revealed a different conclusion.	See NRC 2004-0086 and NRC 2005-0026	2
Page 4-62, Section 4.5.1.2, Paragraph 2 and 3	… LRA Section A15.3.1, …	The Prestressed Concrete Containment Tendon Surveillance Program was withdrawn in letter NRC 2005-0026 dated march 15, 2005 and NRC 2005-0020 dated February 23, 2005. Also see	See NRC 2005-0026 and NRC 2005-0020 and NRC 2005-0037	2

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		Letter NRC 2005-0037 dated April 8, 2005		
Page 4-62, Section 4.5.1.2, Paragraph 3	… As the minimum required prestressing forces are stated in the plant FSAR, the applicant pointed out that they were not needed in LRA Section ~~15.3.1~~. ~~Table 4.5-2 reflects the applicant's projected prestressing forces.~~	… As the minimum required prestressing forces are stated in the plant FSAR, the applicant pointed out that they were not needed in LRA Section **A15.3.1**. **The applicant provided a clarification to RAI 4.5-2 in a letter dated March 15, 2005. The applicant was requested to reformat the information in these tables (see August 26, 2004 letter) presenting the projected pre-stressing forces at 40 and 60 years along with the minimum required force. Only the per tendon information should be included. Note, RAI 4.5-1 and RAI 4.5-2 initial responses were based on a draft calculation. That calculation has since been finalized and no results or conclusions have changed. Table 4.5-2 reflects the applicant's projects prestressing forces.**	This response was modified in NRC 2005-0026 due to comments at the 2/15/05 NRC meeting. The results shown in Table 4.5-2 on page 4-63 are from the modified response in NRC 2005-0026.	2
Page 4-63,	The applicant provided FSAR		This AMP was	2

Page, Section, and Paragraph	DSER Text	Suggested Revision	Justification	Category
Section 4.5.1.3, Paragraph 1	supplement summary description of the ~~Pre-stressed Concrete Containment Tendon Surveillance Program~~ in LRA Section ~~A.15.3.1~~.	The applicant provided **an** FSAR supplement summary description of the **Containment Tendon Loss of Prestress Analysis** in LRA Section **A15.4.4.**	deleted in NRC 2005-0026. Deleted LRA section A.15.3.1 in NRC 2005-0020	
Page 4-64, Section 4.6.1.1, Paragraph 1	… In addition, criticality monitoring ~~and~~ analyses are performed to assure the 5-percent subcriticality margin requirement is maintained. Prior to the period of extended operation, this program will be enhanced to include areal density testing, blackness testing, neutron attenuation, and SFP silica level tracking as qualitative indicators of Boraflex degradation. The applicant will also continue to perform criticality monitoring ~~and~~ analyses….	… In addition, criticality monitoring **by** analyses are performed to assure the 5-percent subcriticality margin requirement is maintained. Prior to the period of extended operation, this program will be enhanced to include areal density testing, blackness testing **or** neutron attenuation, and SFP silica level tracking as qualitative indicators of Boraflex degradation. The applicant will also continue to perform criticality monitoring **by** analyses….	Clarification See NRC 2004-0071, and NRC 2005-0020.	2
Page 4-64, Section 4.6.1.2, Paragraph 3	…. density tests, blackness tests~~,~~ neutron attenuation, and SFP silica level measurements).	…. density tests, blackness tests **or** neutron attenuation, and SFP silica level measurements).	Clarification See NRC 2004-0071, and NRC 2005-0020.	2
Page 4-65, Section 4.6.1.2, Paragraph 2	During conversations with the staff, the applicant committed to perform areal density and blackness tests once every 2 years during the period of extended operation. This was identified as confirmatory item (CI) 4.6.1-1.2.	"…the applicant committed to perform areal density and blackness tests **on certain accelerated Boraflex panels** once every 2 years during…"	Clarification See NRC 2005-0038	2

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Page 4-66, Section 4.6.1.4, Paragraph 1	… for TLAAs in 10 CFR 54.21(c)(1)~~(ii)~~, and the safety margins…	… for TLAAs in 10 CFR 54.21(c)(1)**(iii)**, and the safety margins…	See LRA Section 4.6.1	2
Page 4-66, Section 4.7.1.1, Paragraph 1	… for inspection and assessment of thimble tube thinning, which was accepted by NRC in a letter to ~~Westinghouse~~ dated November 22, 1989.	… for inspection and assessment of thimble tube thinning, which was accepted by NRC in a letter to **Wisconsin Electric** dated November 22, 1989.	Reference 56 LRA Page 4-103	2
Page 4-67, Section 4.7.2.1, Paragraph 1	Therefore the applicant concluded that ~~the bottom mounted instrumentation thimble tube~~ wear is not a TLAA.	Therefore the applicant concluded that **containment accident recirculation fan heat exchanger tube** wear is not a TLAA.	See LRA Section 4.7.2	2