

Follow-up 2020 Audit Questions Related to UML's Supplemental Information Submitted  
September 30, 2020

1. Audit item 1: Some of the TS bases still do not appear to be consistent with the revised TSs and/or information in the SAR, as supplemented.

- a. TS 2.2.1 basis: Based on information in UML's response to RAI-13.1 (ADAMS Accession No. ML17090A350), a step reactivity transient is no longer bounding.

*During a teleconference on December 16, 2020, UML stated that it will provide a follow-up TS submittal which deletes the basis language "Of the transient conditions analyzed, the step-reactivity addition is the most limiting condition. [...] The ONB limit provides an adequate margin to ensure the SL is not reached."*

- b. TS 3.1.1 basis: A value appears to be missing in the first sentence.

*During a teleconference on December 16, 2020, UML stated that it will provide a follow-up TS submittal which changes "reactivity of provides" to "reactivity provides" in the first sentence of the basis.*

- c. TS 3.2.1 basis: The basis appears inconsistent with information in UML's response to RAI-13.1.

*During teleconferences on December 16 and 21, 2020, UML stated that it will provide a follow-up TS submittal which changes the basis sentence "Analyses in Chapter 13 of the SAR show that for the most limiting transient, the peak clad temperature is well below the ONB point during the 1.0 second scram time interval" to "Analyses in Chapter 13 of the SAR show that for the most limiting transient, the peak clad temperature will not exceed the safety limit during the 1.0 second scram time interval" or similar.*

- d. TS 3.2.2 basis: The basis appears inconsistent with information in UML's response to RAI-13.1.

*During teleconferences on December 16 and 21, 2020, UML stated that it will provide a follow-up TS submittal which changes the basis sentence "The analyses show that the peak clad temperature would be well below the ONB point even under the conservative assumption that the reactor is operating at the LSSS values for power and temperature when the ramp begins and using a reactivity addition rate greater than that allowed by the specification (SAR 13.2.2.2)" to "The analyses show that the peak clad temperature would not exceed the safety limit using a reactivity addition rate greater than that allowed by the specification (SAR 13.2.2.2)" or similar.*

- e. TS 3.3 basis: The basis does not appear to reflect UML's proposed TS 5.2 change to allow a titanium heat exchanger.

*During teleconferences on December 16, 2020, and January 5, 2021, UML stated that it will provide a follow-up TS submittal which revises the basis to be more general (i.e., summarizing the justification for the water chemistry limits, but avoiding specific reference to particular coolant system materials). UML stated that it would simplify this*

*basis regardless of whether it deletes the “titanium” reference from TS 5.2(3) (see follow-up audit question 15).*

- f. TS 3.6.1 basis: The basis states that TSs 3.6.1(1) provides minimum equipment when the reactor is operating, but the TS 3.6.1(1) applicability is not limited to reactor operation.

*During a teleconference on December 16, 2020, UML stated that it will provide a follow-up TS submittal which revises the language in the second sentence of the basis from “...and within the reactor building when the reactor is operating” to “and within the reactor building during any condition required in specification 3.4.1.”*

- g. TS 4.3 basis: The basis does not appear to address TS 4.3(4).

*During a teleconference on December 16, 2020, UML stated that it will provide a follow-up TS submittal which adds a sentence to the end of the TS 4.3 basis: “Verifying the pool gate not be in position to isolate the bulk and stall pools during reactor operation assures the entire pool volume and surface area is available for cooling in normal and off-normal conditions.”*

- h. TS 4.4 basis: The first sentence appears to contain a typographical error, and does not appear to address the proposed change to TS 4.4(1) to verify intake fan operability at 8 hour intervals.

*During a teleconference on December 16, 2020, UML stated that it will provide a follow-up TS submittal which revises the language in the first sentence of the basis from “An initial verification of intake fan is operating assures that...” to “Initial and periodic verification that the intake fan is operating assures that....”*

- i. TS 4.6 basis: The basis appears to contain 2 typographical errors (missing space in the first sentence, and “10CRF” in the last sentence).

*During a teleconference on December 16, 2020, UML stated that it will provide a follow-up TS submittal which corrects the typographical errors in the basis (adding a space between “the” and “use” in the first sentence, and revising “10CRF” to “10 CFR” in the last sentence).*

- 2. Audit item 10: The revised applicability statement appears to be missing a comma after “reactor.”

*During a teleconference on December 16, 2020, UML stated that it will provide a follow-up TS submittal which adds a comma after “reactor” in the TS 3.1.1 applicability statement.*

- 3. Audit item 14: Revised proposed TS 3.2.3 still does not appear to require that at least one of the two required reactor power level channels be the log power/period monitoring channel for natural convection mode. Additionally, supplemental docketed information which clarifies the SAR (including SAR Section 7.4.1.1.5) by stating that the linear channels do not operate in a “1 out of 2 mode,” but that only one linear channel is required and the second channel provides redundancy to the required channel, and which states that the required Log PPM

channel provides redundancy and diversity to the single required linear channel, does not appear to have been provided.

*During a teleconference on December 16, 2020, UML stated that it will provide a follow-up TS submittal which adds an asterisk after the "2" in the "Reactor Power Level" row of the "Natural Convection Mode" column of TS Table 3.2.3-1. Additionally, UML stated that it will provide follow-up supplemental information (on docket) which either confirms that "the linear channels do not operate in a '1 out of 2 mode,' but only one linear channel is required and the second channel provides redundancy to the required channel" and that "the required Log PPM channel provides redundancy and diversity to the single required linear channel"; or, provides an updated SAR Section 7.4.1.1.5 which includes these statements.*

4. Audit item 17: Although references to SAR section that describe primary piping limit switches have been added to the TS bases, it is still unclear which specific switches TS 3.2.3, item 13, applies to.

*During a teleconference on December 21, 2020, UML stated that it will provide follow-up supplemental information (on docket) clarifying and justifying which specific switches the TS applies to. UML stated that its supplemental information may also include further description of the switches.*

5. Audit item 21: UML proposed an alternative approach to that discussed during the audit, but it is not clear whether UML's proposed alternative administrative control requiring beam tube shutters be closed when the reactor is in the stall pool with the pool divider gate in place should be added as an additional TS.

*During teleconferences on December 21, 2020, and January 5, 2021, UML stated that it will provide a follow-up TS submittal which adds a TS 3.8(4) (or 3.3(5)) which states "When the pool divider gate is in position to separate the bulk pool and the stall pool, and the reactor is in the stall pool, the beam tube shutters shall be in the down (closed) position," or similar, and adds a TS 4.3(5) which states "Prior to placing the pool divider gate in position to separate the bulk pool and stall pool, when the reactor is in the stall pool, the beam tube shutters shall be verified to be in the down (closed) position," or similar. UML also stated that it will revise the TS bases accordingly for the addition of these two TSs. Additionally, UML stated that it will add TS 4.3(5) to the TS 4.0, item A., list of TSs that may not be deferred during reactor shutdown.*

6. Audit item 23: UML proposed additional changes to TS 3.4.1 (specifically, revising TS 3.4.1(2), and deleting TS 3.4.1(3)) beyond those discussed in audit, but it is not clear whether those changes are appropriate or facility-specific. Additionally, it appears some information added to the basis for TS 3.4.1 (specifically, the references to "significant fission product inventory" and reactivity transients) in conjunction with audit item 23 may not be accurate or appropriate.

*During teleconferences on December 16 and 21, 2020, UML stated that it will provide a follow-up TS submittal which undoes the revision of TS 3.4.1(2) and deletion of TS 3.4.1(3) indicated on the tracked changes version of UML's September 30, 2020, TS submittal (ADAMS Accession No. ML20274A254), and re-numbers the new TS 3.4.1(3) and TS 3.4.1(4) proposed in UML's September 30, 2020, TS submittal to TS 3.4.1(4) and TS 3.4.1(5), respectively. Additionally, UML stated that it would undo the September 30, 2020,*

*TS submittal's additions/deletions/revisions to the TS 3.4.1 basis from "The movement of irradiated fuel..." through the end of the basis.*

7. Audit item 25: The revised TS 3.5(2) contains an apparent typographical error (extra period at the end of the TS).

*During a teleconference on December 16, 2020, UML stated that it will provide a follow-up TS submittal which deletes the extra period at the end of TS 3.5(2).*

8. Audit item 26: It is not clear whether UML has completed a 10 CFR 50.59 evaluation of its radiation monitoring system changes and has implemented (or will implement) the changes prior to issuance of a renewed license, or whether UML is requesting NRC review and approval of these changes in conjunction with its license renewal review. Also, supplemental docketed information confirming that new radiation monitor alarms will be provided by the existing annunciator panel does not appear to have been provided.

*During a teleconference on December 16, 2020, UML stated that it will provide follow-up supplemental information (on docket) which confirms that, in conjunction with its license renewal request, it is requesting NRC review and approval of the radiation monitoring system changes discussed in its September 30, 2020, supplemental information submitted to address audit item 26. UML also stated that it will provide follow-up supplemental information (on docket) confirming that the new radiation monitor control room alarms (for individual radiation monitors reaching their alarm setpoints) will be provided by the existing radiation monitor alarm panel, which provides the existing audible alarms when certain combinations of radiation monitors reach their alarm setpoints.*

9. Audit item 31: The typographical error does not appear to have been corrected.

*During a teleconference on December 16, 2020, UML stated that it will provide a follow-up TS submittal which revises "sewage" to "sewerage" (the eighth word of TS 3.6.2(1)).*

10. Audit item 37: It is still not clear that the TS applies for any condition, regardless of whether the beam ports are being "accessed."

*During a teleconference on December 16, 2020, UML stated that it will provide a follow-up TS submittal which revises the TS 3.8(3) language "In order to access a beam port with both the lead shutter in the up position and the corresponding shield plug removed..." to "When a beam port lead shutter is in the up position while the corresponding shield plug is also removed..." or similar.*

11. Audit item 38: TS 4.0, item A., has been revised, but the revisions to the TS do not appear to reflect other revisions to TS 4.6, and whether it is appropriate for revised TSs 4.6(3) and 4.6(4) to also be included in the list of TSs that may not be deferred. Additionally, TS 4.0, item A., includes the wording, "as soon as practical," but it appears that "as soon as practicable" may have been what was meant.

*During a teleconference on December 16, 2020, UML stated that it will provide a follow-up TS submittal which revises the reference "4.6(1); and 4.6(2)" in TS 4.0, item A., to "and 4.6," and revises the word "practical" to "practicable."*

12. Audit item 46: TSs 4.2.3(2) and 4.2.3(6) continue to use the language “or prior to each operation extending more than one day” which is inconsistent with the TS definitions.

*During a teleconference on December 16, 2020, UML stated that it will provide a follow-up TS submittal which deletes the language “or prior to each operation extending more than one day” from TSs 4.2.3(2) and 4.2.3(6).*

13. Audit item 49: The revised proposed TS 4.4(3) language “fail-safe condition” does not appear to be consistent with “fail-safe position” used in the corresponding LCO and the TS 4.4 basis.

*During a teleconference on December 16, 2020, UML stated that it will provide a follow-up TS submittal which revises the word “condition” to “position” in TS 4.4(3).*

14. Audit item 54: In addition to changes discussed during the audit, the TS 5.1(2) revision added an exclusion describing areas that the reactor licensed boundary does not include, but the specific areas excluded, and the purpose of this exclusion, is not clear.

*During a teleconference on December 21, 2020, UML stated that it will provide a follow-up TS submittal which deletes the language “with the exclusion of spaces and infrastructure in the three story building delineated and approved under the byproduct materials license” from TS 5.1(2).*

15. Audit item 56: Although the proposed TS 5.2(3) and TS 5.2 basis were revised as discussed during the audit, the possible use of a titanium heat exchanger does not appear to be discussed in the SAR, as supplemented, and the justification for the acceptability of titanium is not clear.

*During a teleconference on December 21, 2020, UML stated that it will either provide follow-up supplemental information (on docket) which describes and justifies the possible use of a titanium heat exchanger, or provide a follow-up TS submittal which deletes “or titanium” from TS 5.2(3) and revises the TS 5.2 basis accordingly.*

16. Audit item 62: The supplemental information states that 10 CFR 70.24(a) would apply for any SNM stored, handled, or used outside of the pool, but does not appear to confirm that any fissionable material UML stores, handles, or uses outside of the pool or licensed containers is less than the quantities specified in 10 CFR 70.24(a).

*During a teleconference on December 21, 2020, UML stated that it will provide follow-up supplemental information (on docket) which confirms that any fissionable material UML currently stores, handles, or uses outside of the pool or licensed containers is less than the quantities specified in 10 CFR 70.24(a).*

17. Audit item 75: The revised proposed TSs include TS 6.4(2) which requires the Reactor Supervisor or Radiation Safety Officer to approve procedures, but it not clear whether their designees may approve procedures. Additionally, the revised proposed TS 6.4(1) requires that RSSC review all procedures, but this appears to conflict with UML’s response to RAI-14.6.15 (ADAMS Accession No. ML19064B373). Also, in addition to changes discussed during the audit, UML proposed to delete the requirement that “procedures shall

be adequate to ensure the safe operation of the reactor and gamma irradiation facilities” from TS 6.4(1), but the justification for this deletion is not entirely clear.

*During a teleconference on December 21, 2020, UML stated that it will provide a follow-up TS submittal which revises TS 6.4(2) to indicate that the Reactor Supervisor “or designee,” and the Radiation Safety Officer “or designee,” shall approve procedures. UML also stated that its follow-up TS submittal will undo its September 30, 2020, TS submittal’s deletion of the language “The procedures shall be adequate to ensure the safe operation of the reactor and gamma irradiation facilities...” from TS 6.4(1). Additionally, UML stated that it will provide follow-up supplemental information (on docket) updating its response to RAI-14.6.15 by confirming that the RSSC will review all TS-required procedures, including those related to personnel radiation protection.*

18. Audit item 78: The revised proposed TS does not appear to require that experiments be carried out using written procedures.

*During a teleconference on December 21, 2020, UML stated that it will provide a follow-up TS submittal which revises the TS 6.5(2) language “...established and approved procedures” to “...established and approved written procedures.”*

19. Audit item 80: The revised cross-references in proposed TSs 6.6.1(3) and 6.6.1(5) do not appear to be correct.

*During a teleconference on December 21, 2020, UML stated that it will provide a follow-up TS submittal which revises the TS 6.6.1(3) cross-reference from “TS 6.7.2(1) and 6.7.2(2)” to “TS 6.7.2(1),” and revises the TS 6.6.1(5) cross-reference from “TS 6.7.2(1) and 6.7.2(1)” to “TS 6.7.2(2).”*

20. Audit item 91: The revised proposed TS 6.8.3(5) appears to refer to “limiting condition for operations” instead of the “limiting condition for operation” used elsewhere in the TSs.

*During a teleconference on December 21, 2020, UML stated that it will provide a follow-up TS submittal which revises the TS 6.8.3(5) language “...limiting condition for operations” to “...limiting condition for operation.”*

21. Audit item 97.i: The documents provided with UML’s supplemental information do not appear to include coversheets for part of item (5) under audit item 97.i, specifically, “supporting documentation (TFS PPM configuration record and test reports).”

*During a teleconference on December 16, 2020, UML stated that these coversheets should not be necessary for docketing, because the configuration record and tests associated with these coversheets are referenced in the Certificate of Conformance memo included in UML’s supplemental information dated September 30, 2020 (ADAMS Accession No. ML20274A255).*

22. Audit item 97.xvii: The supplemental information states that “similar” information from the 1985 SAR describing the startup counter drive will be added to an updated SAR, but the supplemental information does not provide a specific, current description of the startup counter drive and its configuration.

*During a teleconference on December 16, 2020, UML stated that it will provide follow-up supplemental information (on docket) which includes a specific, current description of the startup counter drive and its configuration.*

23. Audit item 97.xix: The supplemental information does not appear to provide the correct nominal value of the regulating rod speed, or indicate which section(s) of the SAR have incorrect information.

*During a teleconference on December 16, 2020, UML stated that it will provide follow-up supplemental information (on docket) which corrects/clarifies references to regulating rod speed in the SAR, as appropriate, by stating that the maximum regulating rod speed is 55 inches per minute.*

24. TS 6.4(3) (additional TS change separate from audit items): In its revised proposed TSs, UML deleted the requirement that temporary deviations from procedures be documented and reviewed pursuant to 10 CFR 50.59. However, the justification for removing the requirement to document such deviations is not clear. Additionally, the NRC staff notes that all procedure changes, including temporary changes, are potentially subject to 10 CFR 50.59.

*During a teleconference on December 21, 2020, UML stated that it will provide a follow-up TS submittal which revises the TS 6.4(3) language "Such deviations shall be reported with 24 hours..." to "Such deviations shall be documented and reported within 24 hours..."*

25. TS 6.8.1(9) (additional TS change separate from audit items): UML revised the proposed TS for greater consistency with ANSI/ANS-15.1-2007, but it is not clear whether the revised TS is appropriately facility-specific, if proposed TS 6.2.4 does not require that all audits be performed by the RSSC.

*During a teleconference on December 21, 2020, UML stated that it will provide a follow-up TS submittal which revises TS 6.8.1(9) to "RSSC meeting minutes and reports of audits required by TS 6.2.4."*

26. TS 4.6(1) (inconsistency between clean and tracked changes versions of revised proposed TSs): The clean version of TS 4.6(1) appears to read "...monitoring channels in Specification 3.6.1(1)..." but the tracked changes version appears to read "...monitoring channels in TS 3.6.1(1)."

*During a teleconference on December 21, 2020, UML stated that, in its follow-up TS submittal, it would verify that any versions of the TSs (e.g., clean and tracked changes versions) it provided were consistent.*