2026 UUTR License Amendment Request Supporting Removal of pH Limit from UUTR Technical Specifications.

Description of the Proposed change:

The University of Utah TRIGA reactor (UUTR) facility intends to make the following permanent changes to Technical Specifications:

Amend TS 3.5 (page 23) by removing specification 4 of this section which states, “The pH shall be between 5.5 and 7.5”. Additionally, remove the basis of TS 3.5 paragraph 4 which states, “The pH of reactor tank water is kept between 5.5 and 7.5 (SAR 5.3) assuring the water is kept chemically neutral.”

Amend TS 4.3 (page 40) by removing pH monthly measurement requirement and associated basis information.

Discussion of the current technical specification and effect of the change:

The pH LCO of 5.5 to 7.5 is unnecessarily restrictive. As written, UUTR facility interprets this LCO as a continuously instantaneous requirement. Therefore, when pH is observed to begin lowering from a value well within the operational band (such as a starting value of 6.1), the reactor operator will shutdown the reactor before the continuous water monitoring system reads a value below 5.5. This change will allow UUTR to continue operating without having to shutdown because of the chemistry effects described in ref 1 of this document. Since UUTR facility intends to rely only on conductivity measurement, a monthly measurement of pH is unnecessary as well.

Supporting Safety Analysis:

Ref 1 of this document provides a detailed evaluation of why open pool reactors with a conductivity specification do not require a pH specification for operation. Since UUTR already has the recommended conductivity specification of reactor tank water shall be less than 5 μmhos/cm, the analysis described in ref 1 is sufficient to remove the pH specification for UUTR.

Evaluation of proposed changes continuing to meet 10 CFR Requirements, NUREG-1537 guidance, and ANSI/ANS 15.1:.

The evaluation section of ref 1 addresses NUREG 1537 and ANSI/ANS 15.1 guidance.

Requested Time frame for this change: July 2027

References

1) RESEARCH AND TEST REACTORS POOL WATER – SAFETY EVALUATION ON ELECTROLYTIC CONDUCTIVITY (TAC NO. ME8511) (ML15114A433)