

TECHNICAL SPECIFICATION CHANGE REQUEST NO. 121 (REV. 1)

The Licensee requests the attached changed pages replace the following page of the existing Technical Specification, and the initial submittal of Technical Specification Change Request No. 121 in its entirety.

Appendix A

Replace 3-116

This Tech Spec Change Request allows higher limits of oxygen, prior to Cycle 5 criticality, as long as hydrogen is kept below 2% by volume. The Tech Spec will allow higher levels of O₂ in the Waste Gas Ventilation System (WGVS) during times of maintenance and inspection of the system when the system is open to the atmosphere. This will eliminate the need to report during routine maintenance and certain degassing operations (see LER 82-08 Corrective Actions).

Safety Evaluation Justifying Change

Prior to Cycle 5 criticality, hydrogen is not added to the WGVS in any appreciable amounts by operational or maintenance activities and is maintained very low (approximately 15 cc/kg in the RCS). As a result, there is no specific need to limit oxygen levels in this mode since there is insufficient hydrogen present for flame propagation. Experimental data* on the flammability of hydrogen in oxygen provides, under ideal conditions, a lower limit of 4% hydrogen. Therefore, as long as the hydrogen concentration is maintained at less than 4% no limit on the oxygen concentration is required. If hydrogen concentration should exceed 2%, the action statements in footnotes (1) and (2) would require reducing hydrogen concentration to less than 2% within one hour.

The Licensee is in the process of installing a backup H₂ monitor. Footnote (1) to Tech Spec 3.22.2.5 is contingent upon availability of a second H₂ monitor. Operability of one H₂ monitor requires grab sampling coincident with footnote (2).

(1) The probability of consequences of accidents previously evaluated have not been increased over that previously analyzed as the Waste Gas Tank Rupture (FSAR Update Section 14.2.2.6).

(2) No accidents other than those previously considered will be introduced.

(3) No safety margin has been reduced. Adopted safety margins of combustible limits of H₂ and O₂ concentrations are conservative.

Amendment Classification (10 CFR 170.22)

This change request involves a single safety issue and is, therefore, considered a Revision to Class III License Amendment.

Implementation

It is requested that this amendment be effective upon placing an additional H₂ monitor in service.

*Bulletin 503, Bureau of Mines; Limits of Flammability of Gases and Vapors

RADIOACTIVE EFFLUENTS

EXPLOSIVE GAS MIXTURE

LIMITING CONDITIONS FOR OPERATION

3.22.2.5* The concentration in the waste gas holdup system shall be limited to less than or equal to 2% oxygen by volume and 4% hydrogen by volume

APPLICABILITY: At all times.

ACTION:

- a.* With the concentration in the waste gas holdup system greater than 2% oxygen by volume or 4% hydrogen by volume, immediately minimize additions of waste gases to the system and reduce the concentrations to less than the aforementioned values within one hour.

*Prior to Cycle 5 criticality, the concentration in the waste gas holdup system shall be limited to less than or equal to 2% hydrogen by volume with no limit on oxygen.

1. With two hydrogen monitors OPERABLE and the concentration in the waste gas holdup system greater than 2% hydrogen by volume, immediately minimize additions of waste gases to the system and reduce the concentrations to less than 2% hydrogen by volume within one hour.
2. With one hydrogen monitor OPERABLE commence taking a grab sample every 8 hours and if the concentration in the waste gas holdup system is greater than 2% hydrogen by volume, immediately minimize additions of waste gases to the system and reduce the concentration to less than 2% hydrogen by volume within one hour.
3. With no hydrogen monitors OPERABLE, the concentrations in the waste gas holdup system shall be limited to less than or equal to 2% oxygen by volume and 4% hydrogen by volume.