Scott Nastasney
Review & return to
JHA
8/1

Inter-Office Memorandum

GPU Service

Date: July 31, 1979
TSG-324

Subject: Standby Pressure Control System Test

To: J. J. Chwastyk

Location: TMI

File
Standby Press
Control Sys

Reference is made to recent NRC concern for transport of oxygen into the RCS during subject testing.

If the quantity of water potentially entering the RCS is limited to 100 gallons, the increase in RCS oxygen content will be limited to about .006 ppm. We anticipate that the proposed testing will limit the quantity to less than 100 gallons and that the above O_2 increase in the RCS is not of concern.

B D Elam
B. D. Elam

BDE/jb

cc: R. C. Arnold
J. G. Herbein
R. F. Wilson
E. C. Dye
G. Maus
R. H. Vollmer (NRC)
L. Rogers (B&W)

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John -

I have seen a copy of this previously. I concur with their conclusion - based upon my own calculation (attached)

Scott

8212020197 790731
PDR ADOCK 05000289
P PDR

GPU Service Corporation is a subsidiary of General Public Utilities Corporation

S. Newberry
8/2/79

Gas Solubility (STP) from Foster & Alyea Intro to General Chemistry, 1941

O_2 = .031 l / l H_2O

$$\frac{.031\ l\ O_2}{1\ l\ H_2O} \times \frac{1\ l\ H_2O}{.2642\ gal\ H_2O} = \frac{.1173\ l\ O_2}{gal\ H_2O}$$

Specific volume for Oxygen (STP) $\frac{1\ lb}{11.819\ ft^3}$ (Brw "STEAM")

$$\frac{1\ lb}{11.819\ ft^3} \times \frac{.1173\ l\ O_2}{gallon\ H_2O} \times \frac{1\ ft^3}{28.32\ l} = \frac{.00035\ lb\ O_2}{gallon\ H_2O}$$

$$\frac{.00035\ lb\ O_2}{gallon\ H_2O} \times 100\ gallons\ H_2O\ (for\ test) = .035\ lb\ O_2\ injected\ into\ RCS$$

@ 275 psi, 160 °F

$$\frac{.035\ lb\ O_2}{10{,}000\ ft^3\ H_2O} \times \frac{.01633\ ft^3\ H_2O}{lb\ H_2O} = \frac{.00057\ lb\ O_2}{10^5\ lb\ H_2O}$$

approximate RCS volume

$$= .0057\ ppm$$