TMI 500

WESTINGHOUSE ELECTRIC CORPORATION
ASTRONUCLEAR LABORATORY

PROJECT NERVA - THERMAL DESIGN INFORMATION

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Date: October 31, 1962

Title: Temperature Distribution
in the Nozzle End Seal

MASTER

TMI-500

The temperature distribution in the nozzle end seal is shown on Figure 1. Also included is a dimensioned sketch, Figure 2, of the seal studied.

The distribution shown was calculated for the reactor operating at full load, steady state conditions.

Computer code TOSS was used to determine the temperature distribution.

Figure 1 shows very high temperature gradients in the stainless steel nozzle support flange and the stainless steel inner reflector support flange.

References:

Drawing No. 936J077 - Nozzle End Seal

R. A. Case 1320 B-WM-001

PD Spec 30016 (Pyrolytic Graphite)

PD Spec 30019 (High Density Graphite)

WANL-TMI-232

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FIGURE 1.

CORE NOZZLE SEAL
TEMP. °R

$T = 0R$
 $\frac{\Delta T}{\Delta L} = 0R/IN$
 $K = BTU/INFT^0R$

NOTE: THIS CASE WAS CALCULATED FOR THE LARGEST TEMPERATURE GRADIENTS IN THE GRAPHITE BY ASSUMING A .002 IN. GAP BETWEEN THE INNER AND OUTER GRAPHITE SEGMENTS

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