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IRRADIATION PROCESSING DEPARTMENT

December 23, 1960

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LOADING AND OPERATING CONDITIONS
FOR NIN-1 AND NIE-1 ELEMENTS IN THE KER LOOPS
UNDER PT-IP-377-A

Production Test IP-377-A⁽¹⁾ authorized the irradiation of NIN-1 and NIE-1 elements in the KER loops. This document provides the loading and operating conditions for eight 16-inch or five 24-inch elements, either natural NIN-1 or .947% enriched NIE-1, in any of the four KER loops. The loading for a charge of five 24-inch elements is given in Table 1 and the loading for a charge of eight 16-inch elements is given in Table 2. The operating conditions for either charge in KER 2, 3, or 4 are given in Figure 1 and the operating conditions for either charge in KER-1 are given in Figure 2.

W. K. Kratzer
Process and Reactor Development Subsection
Research and Engineering Section
IRRADIATION PROCESSING DEPARTMENT

WKK: kmn

APPROVED

J. H. Brown, Manager
Process and Reactor Development Subsection
Research and Engineering Section
IRRADIATION PROCESSING DEPARTMENT

R. W. Reid, Manager
Process Technology Subsection
Research and Engineering Section
IRRADIATION PROCESSING DEPARTMENT

(1) Kratzer, W. K. Production Test IP-377-A, Irradiation of N Reactor Inner Fuel Tubes in the KER Loops, HW-67756. December 13, 1960. (SECRET)

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TABLE 1

FUEL ELEMENT LOADING FOR FIVE 24-INCH
NIN-1 OR NIE-1 ELEMENTS IN ANY KER LOOP

<u>Position From Downstream End</u>	<u>Number</u>	<u>Type of Material</u>
1	1	Eight inch Triangular Perf
2-27	26	Eight inch Spacers
28	1	Eight inch Triangular Perf
29-33	5	Twenty-four inch NIN-1 or NIE-1 Elements
34	1	Eight inch Triangular Perf
35-56	22	Eight inch Spacers
57	1	Eight inch Triangular Perf

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TABLE 2
FUEL ELEMENT LOADING FOR FIGHT 16-INCH
NIN-1 OR NIE-1 ELEMENTS IN ANY PER LOOP

<u>Position</u> <u>from Downstream End</u>	<u>Number</u>	<u>Type of Material</u>
1	1	Eight inch Triangular Perf
2-27	26	Eight inch Spacers
28	1	Eight inch Triangular Perf
29-36	8	Sixteen inch NIN-1 or NIE-1 Elements
37	1	Eight inch Triangular Perf
38-38	21	Eight inch Spacers
39	1	Eight inch Triangular Perf

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FIGURE 1

Operating Conditions for five 24-inch or eight 12-inch elements, stirred natural water, 100% wetted, NRE-1, in 1964.

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FIGURE 2

Operating conditions for five 24-inch
or eight 16-inch elements, either natural
uranium, or .947 enriched NIE-1 in KER-1.

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