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TASK I SPECIFICATIONS FOR PUREX FEED

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C. R. Anderson, Head
Purex Plant Process Engineering Unit

TASK I SPECIFICATIONS FOR PUREX FEED

The specifications for high MWD/T Purex plutonium solution (L-9) to be sent to Task I on a routine basis beginning in July, 1956, are outlined below. Solutions which do not meet these specifications may be shipped to Z Plant for processing, only if approved on a specific basis by Z Plant Process-Engineering Unit personnel.

a) Plutonium Solution Concentration

Preferred range: 80-120 grams Pu/liter.

b) Run Volume

Less than 8.0 liters

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c) Plutonium per PR Can (400-1000 MWD/T material only)

Maximum TU: 700 grams Pu per PR can.
Preferred TU: 680 grams Pu per PR can.
Minimum TU: 300 grams Pu per PR can.

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d) Nitric Acid Concentration

Maximum: (1) 5.0 M HNO₃ for PR Can volumes between 7.1 and 8.0 liters
(2) 7.0 M HNO₃ for PR Can volumes below 7.0 liters.
Minimum: 3.0 M HNO₃

e) Uranium Concentration

$\frac{U \text{ #/gal}}{AT \text{ c/m/gal}} < 1.5 \times 10^{-16}$ (Less than 0.5 weight per cent U in Pu.)

f) Iron Concentration

Less than 10 weight per cent Fe in Pu (< 100,000 ppm Pu)

g) Radiation Limit

The average gamma/AT for any consecutive series of fifty PR can runs (about 10 batches) shall not exceed 0.6×10^{-10} gamma microcuries/gal per alpha count/minute/gal., and no single run shall exceed a gamma/AT of 1.0×10^{-10} .

W. G. Browne

W. G. Browne, Head
Process Engineering Unit
Z Plant

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