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By Authority of WA Snyder
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 By J E Sauray 8-13-93
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July 7, 1993

J. E. Maider, Manager
 Manufacturing Department

PROPOSED WASTE DISCARD LIMITS FOR PUREX

Prior approval from the Atomic Energy Commission will be required for discarding SF material during the start-up operation of the Purex plant. It is expected that SF material waste losses will routinely be close to or below flowsheet concentrations of uranium and plutonium, but experience in the present separations plants has shown that during the start-up period, SF material losses may at times be abnormally large.

The disposition of waste streams is normally based on a balanced evaluation of several factors including the economics, the effect of rework efforts on production schedules and/or plant tests, and the amount of plutonium and/or uranium present in the waste stream. In each case the above factors are evaluated so that excessive amounts of plutonium and uranium will not be sent to underground storage and production continuity will not be hampered by frequent lengthy and costly reworking for little or marginal gains. Prior approval of maximum discard limits by the Atomic Energy Commission will permit routing to underground waste storage occasional isolated off-standard solutions which to rework would jeopardize production schedules, the start-up test programs, or be highly unfavorable economically.

It is recommended that authorization be requested from the Atomic Energy Commission for ~~these~~ ~~maximum~~ to discharge to underground waste storage up to 10 percent of the plutonium and 25 percent of the uranium in any given dissolver charge. These limits are expressed as a percentage (by weight) of a charge of SF material delivered to the dissolver and represent the total of all process losses from the dissolver through the transfer of plutonium to the P1 can and uranium to the UG3 plant. These limits do not represent the economic balance point but are proposed to allow freedom between the magnitude and the frequency of rework and maintenance of production. Comparable discard limits were granted the Rodex and TBP plants for their start-up periods.

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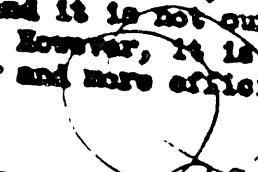
J. I. Maider

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July 7, 1959

Table I outlines the proposed maximum waste discard limits as compared to the Purex HW-4 flowchart values. The great majority of the discarded wastes will not approach the proposed limits and it is ~~not~~ our intention to discard up to these limits on a blanket basis. However, it is felt that the proposed limits will allow a much smoother and more efficient start-up.



R. G. Bell, Manager
Separations Section

RSB:lg

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| Unit Operation & Stress | Vessel Capacity | Design Capacity | Proposed Limits of use Lb./Fsq |
|---------------------------|--------------------|--------------------|---|---|---|---|---|
| A. Metal Head Preparation | 5-2 | 0.04 | | | | | |
| B. Intermediate Tank | | | 5-25 | 0.9 | 0.35 | 0.74 | 0.7 |
| Total Metal Head | | | | | 500 | 20.04 | 20.0 |

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10/28/93

