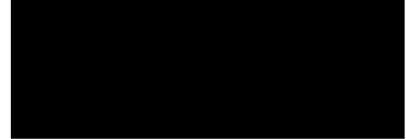




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# Science and Weapons Daily Review

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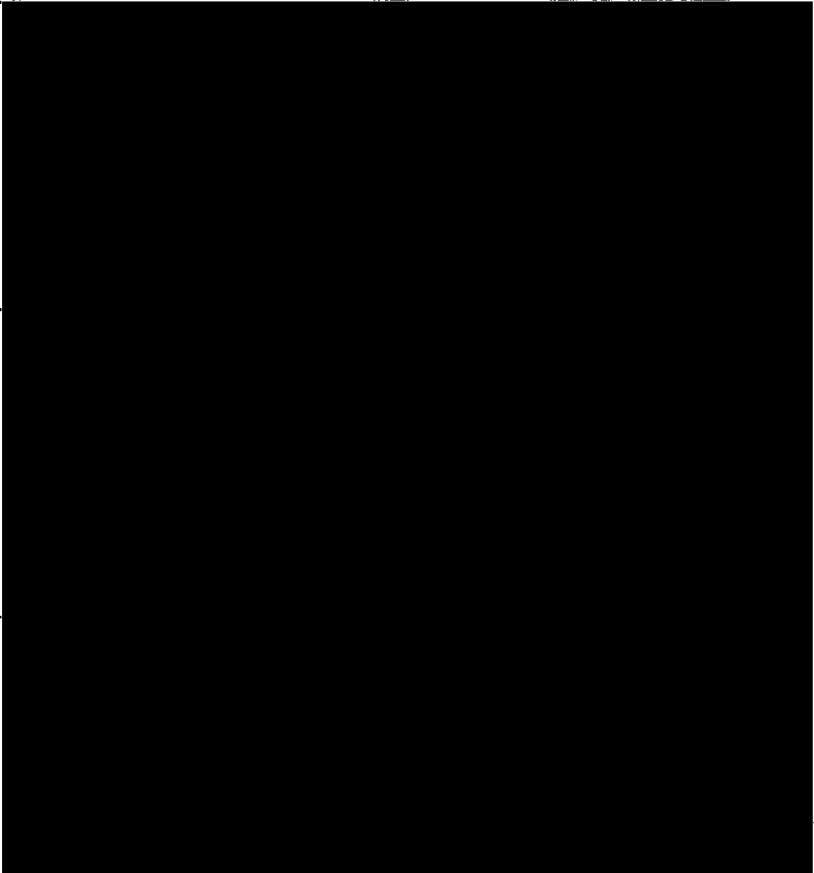


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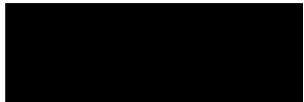


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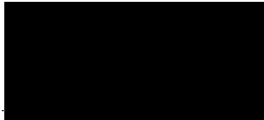
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FRANCE: URANIUM ISOTOPE SEPARATION 

Senior French nuclear officials recently stated that research on uranium isotope separation will be concentrated on advanced processes--atomic vapor laser isotope separation, molecular laser isotope separation, and plasma separation; we believe the French probably will decide to concentrate on atomic vapor laser isotope separation within the next three years. 



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FRANCE: URANIUM ISOTOPE SEPARATION [REDACTED]

According to senior officials of the Commissariat a l'Energie Atomique (CEA), research on uranium isotope separation is to be concentrated on advanced processes--atomic vapor laser isotope separation (AVLIS), molecular laser isotope separation, and plasma separation. The French plan to decide among these competing technologies in late 1986 or early 1987. Their goal is to develop a small-scale economical process that will be available in the late 1990s when the demand for uranium enrichment services is expected to increase. [REDACTED]

Although the French intend to develop all three advanced isotope separation processes, CEA scientists think AVLIS will prove to be the most promising technology. As a result, half of the CEA budget for advanced processes is devoted to AVLIS. Current AVLIS programs are centered around laser spectroscopy and simulations using barium vapor. [REDACTED]

Comment:

Within the next three years, the French probably will decide to concentrate their uranium isotope separation research on the AVLIS process. Once this decision has been made, they will construct pilot plants to further develop technology and production procedures. It is possible that they will have a commercial enrichment plant in operation by the late 1990s. [REDACTED]

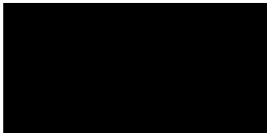
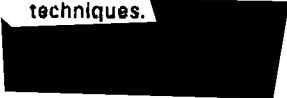
Scientists at CEA recently have completed their laboratory work on the uranium chemical exchange (CHEMEX) enrichment process. A tenth-scale CHEMEX pilot plant is scheduled to become operational in September 1984. Due to economic considerations, the French are unlikely to develop CHEMEX technology beyond this point, unless it appears that they can export such plants to Third World countries. [REDACTED]

The French presently have much more uranium enrichment capacity than needed, and, therefore, have not been under any pressure to develop advanced isotope separation techniques. By the end of the 1990s, when the demand for uranium enrichment services is expected to increase again, the present enrichment facilities will be dated and costly. The AVLIS process offers the potential of low-cost enrichment services; thus, its

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the late 1990s will make French uranium enrichment services competitive on the world market. Cost estimates for the CHEMEX process indicate that it does not offer as great a potential as do the AVLIS or gas centrifuge techniques.



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