Challenges of Advanced Nuclear Weapon Development in Pakistan (U)

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Foreign Nuclear Programs Section
Z Division
NAI Directorate
Lawrence Livermore National Laboratory

May 1999

This work has been funded by the
Office of Intelligence
US Department of Energy DOE
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CNWDI
Sigma 1
NOFORN
ORCON
Gamma Controlled Item

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Contents (U)

Figures (U)

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Challenges of Advanced Nuclear Weapon Development in Pakistan (U)

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Executive Summary (U)

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Introduction (U)

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Pakistan's Present Nuclear Weapon Status (U)

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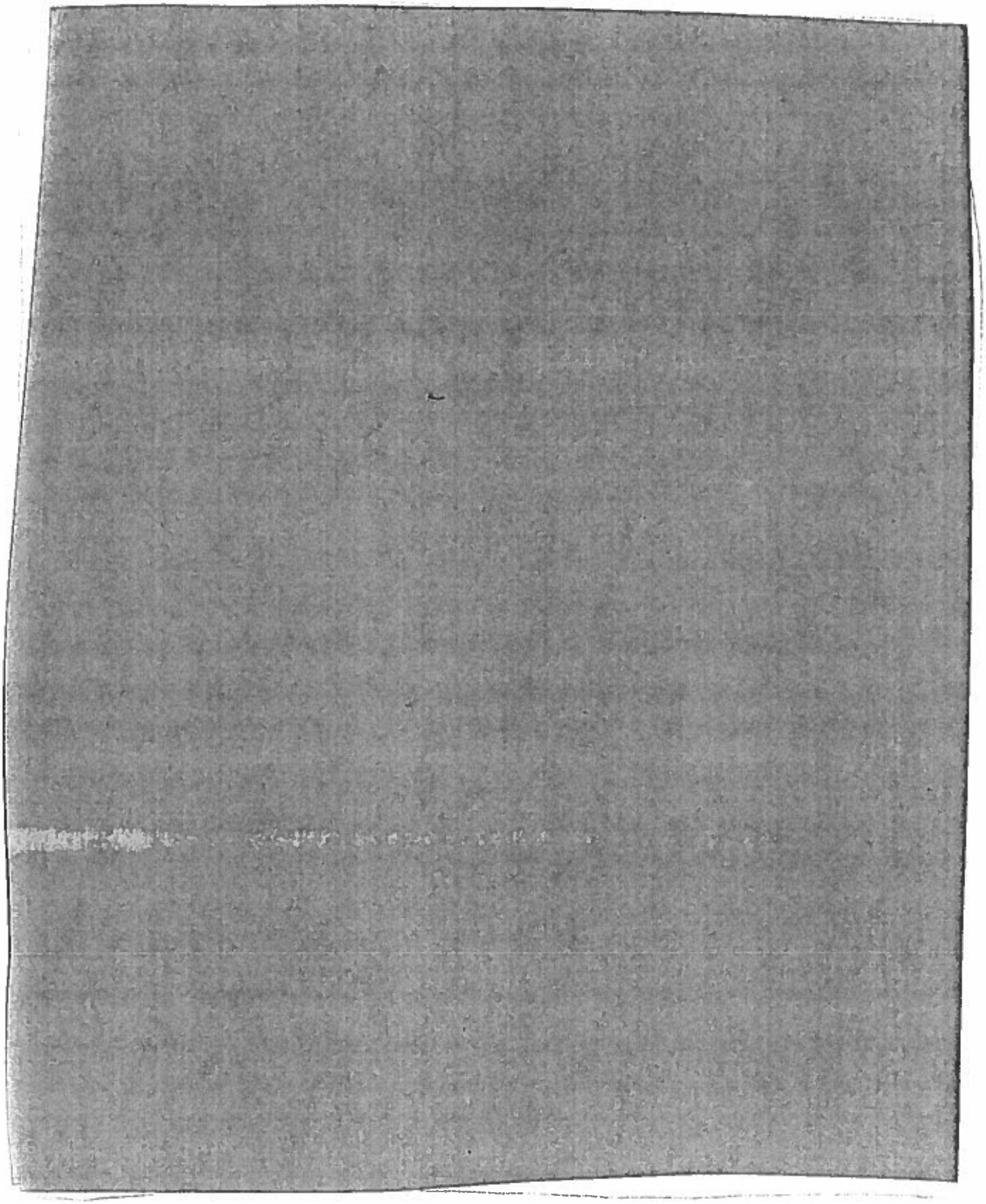

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* (U) Temperature in thermonuclear work is usually expressed in terms of equivalent kinetic energy: 1 keV = 1.16×10^7 K.

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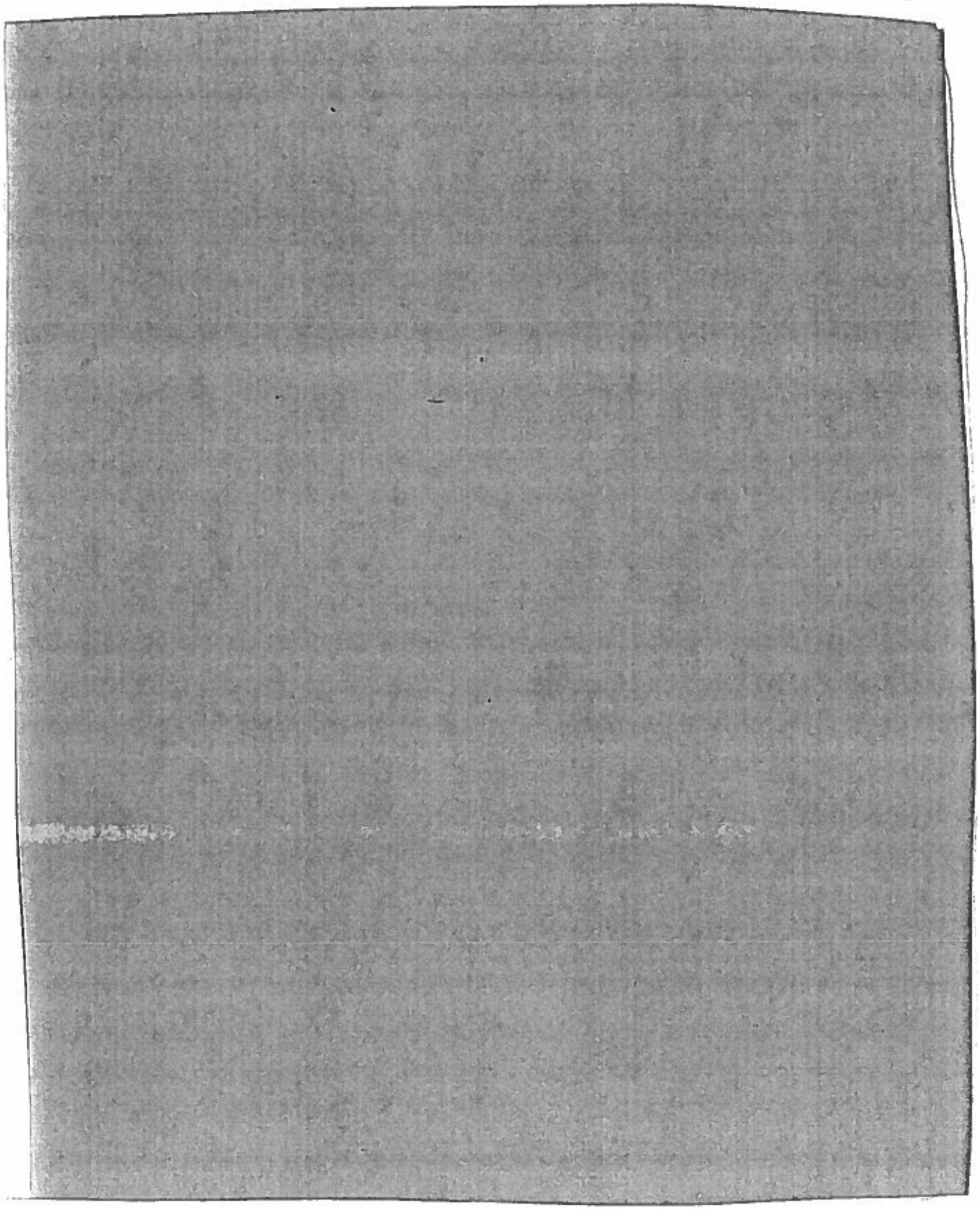

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* (U) The correct detailed chemical formula for this lithium hydride or lithium "salt" is $(^{6}Li_{x}{}^{7}Li_{1-x})(D_{y}T_{1-y})$ where x and y are isotopic fractions ≤ 1. For natural Li (^{n}Li), x = 0.075. For equal mass DT, y = 0.6 and for equimolar DT, y = 0.5.

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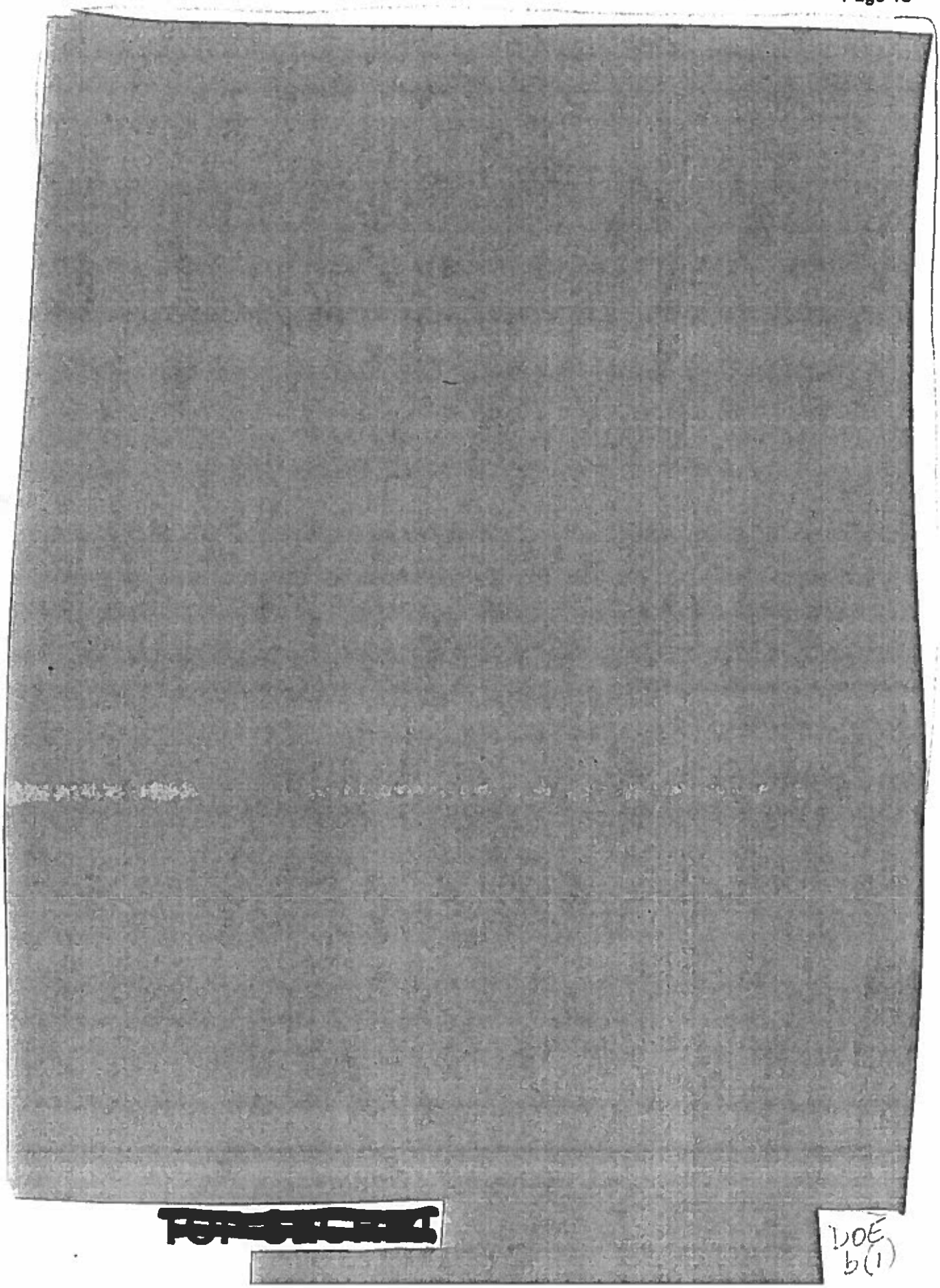

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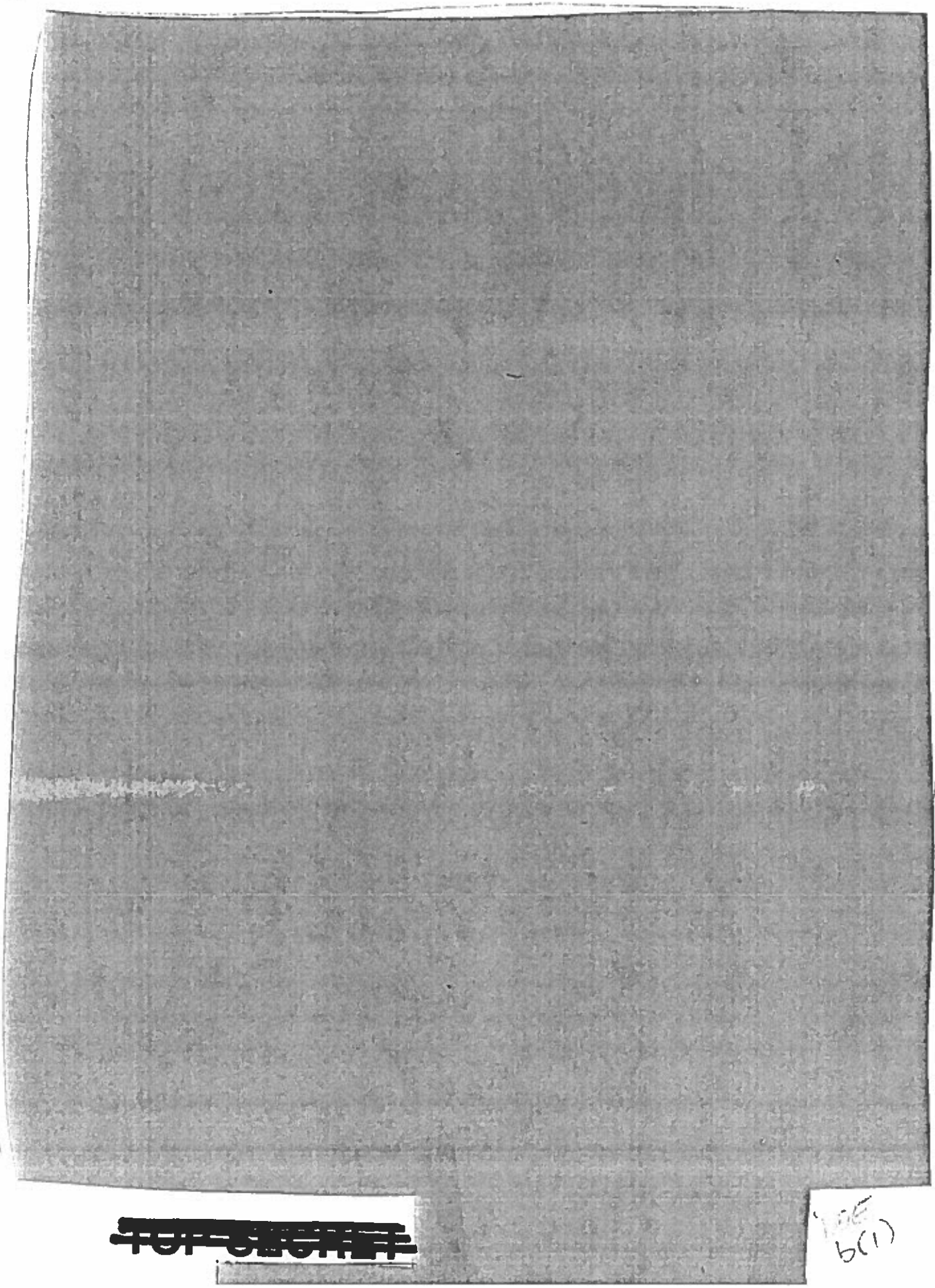

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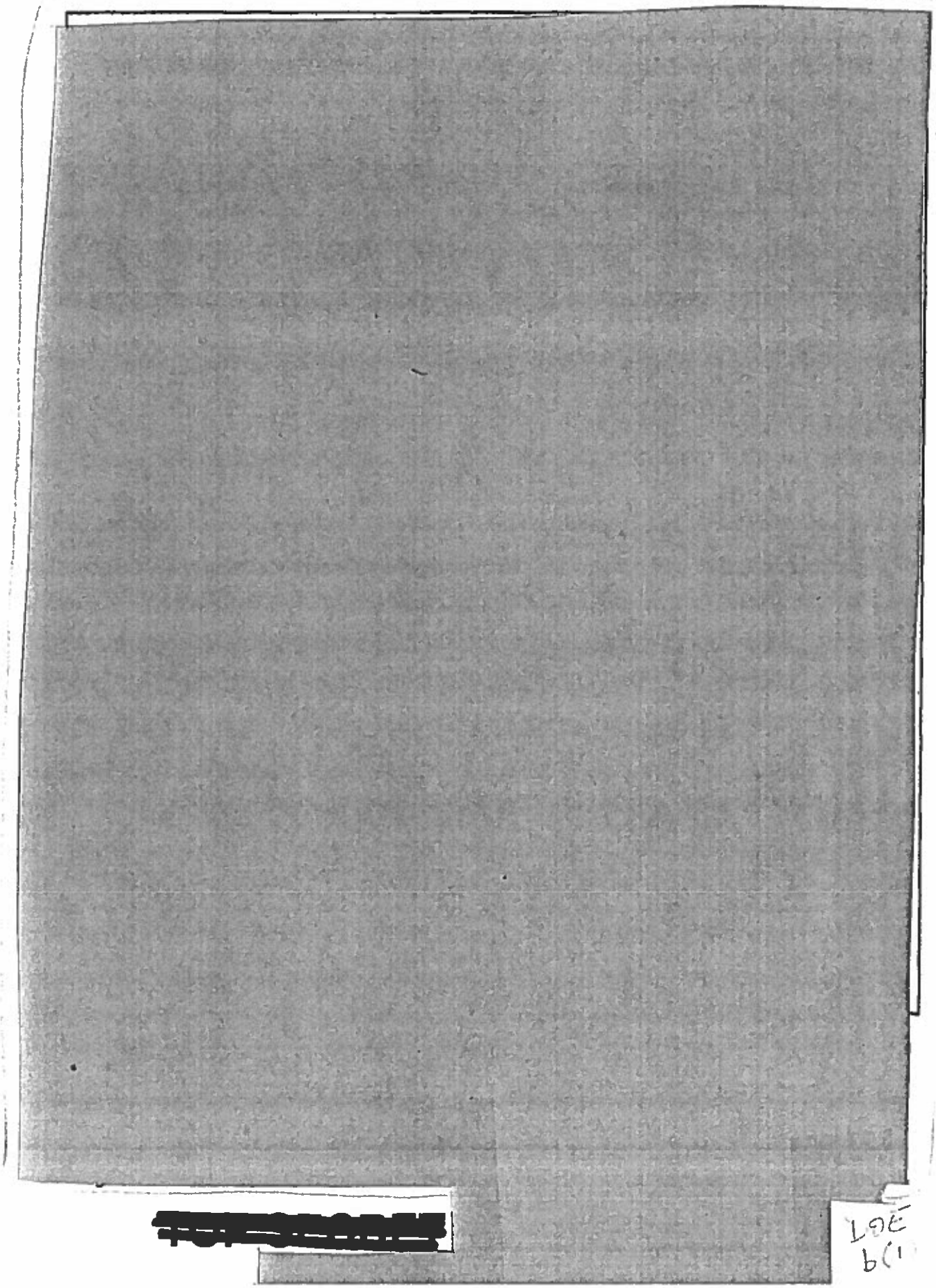

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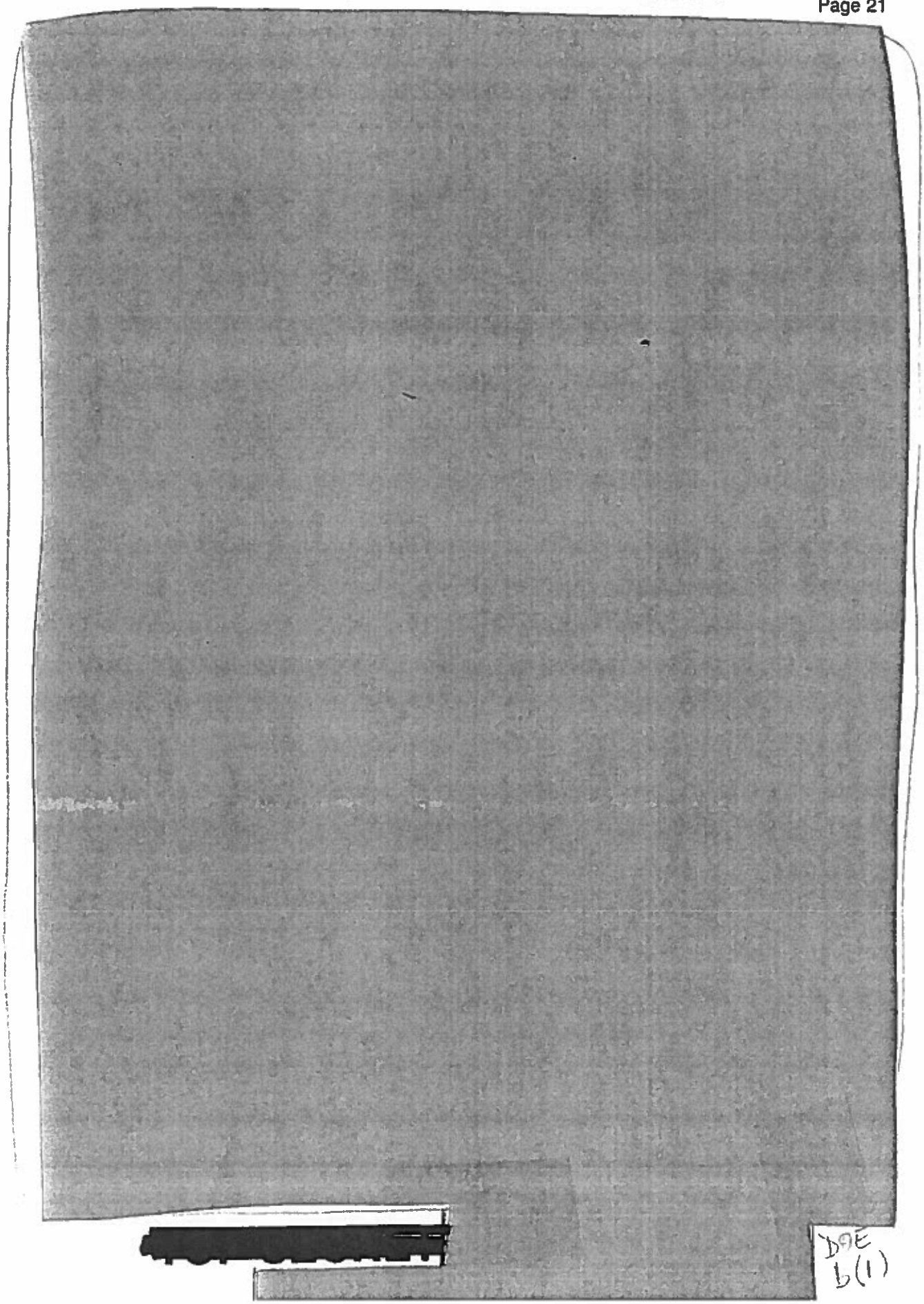

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b(1,3)

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b(3)
b(1)

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* (U) Slifer stands for shorted location indicator by frequency of electromagnetic resonance, a way of measuring the rate at which a cable extending away from the shot point is shorted at the shot end by the expanding shock wave. Because the rate depends upon the yield, the latter can be determined. Gas sampling is a way of sampling the air in the shot cavity (minutes to days after the shot) by pumping through a preemplaced hose or permeable cable for gaseous fission products and chemical tracer gases to determine the number of fissions and thus the nuclear yield.

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Policy Implications (U)

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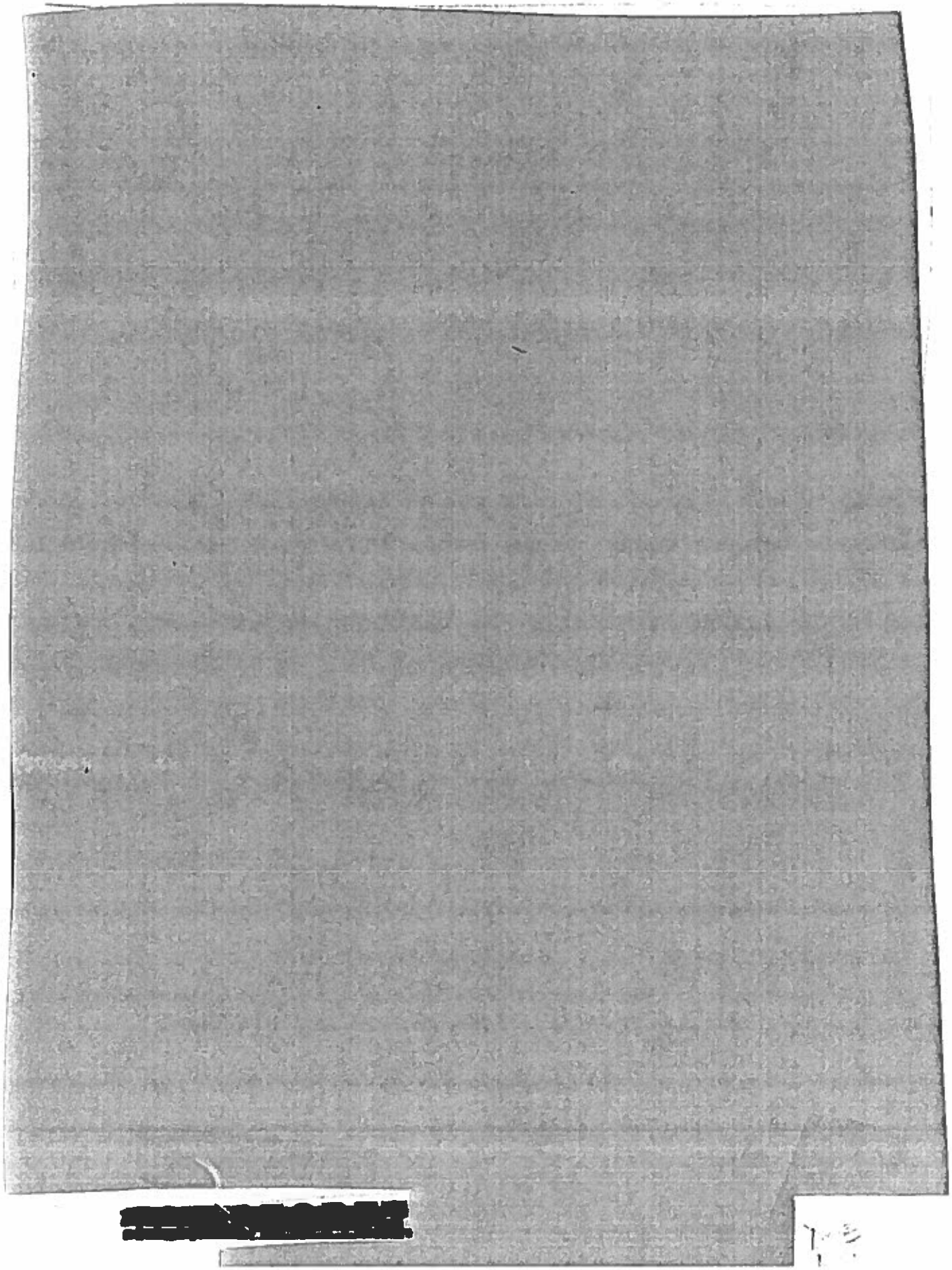

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Conclusions (U)

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References (U)

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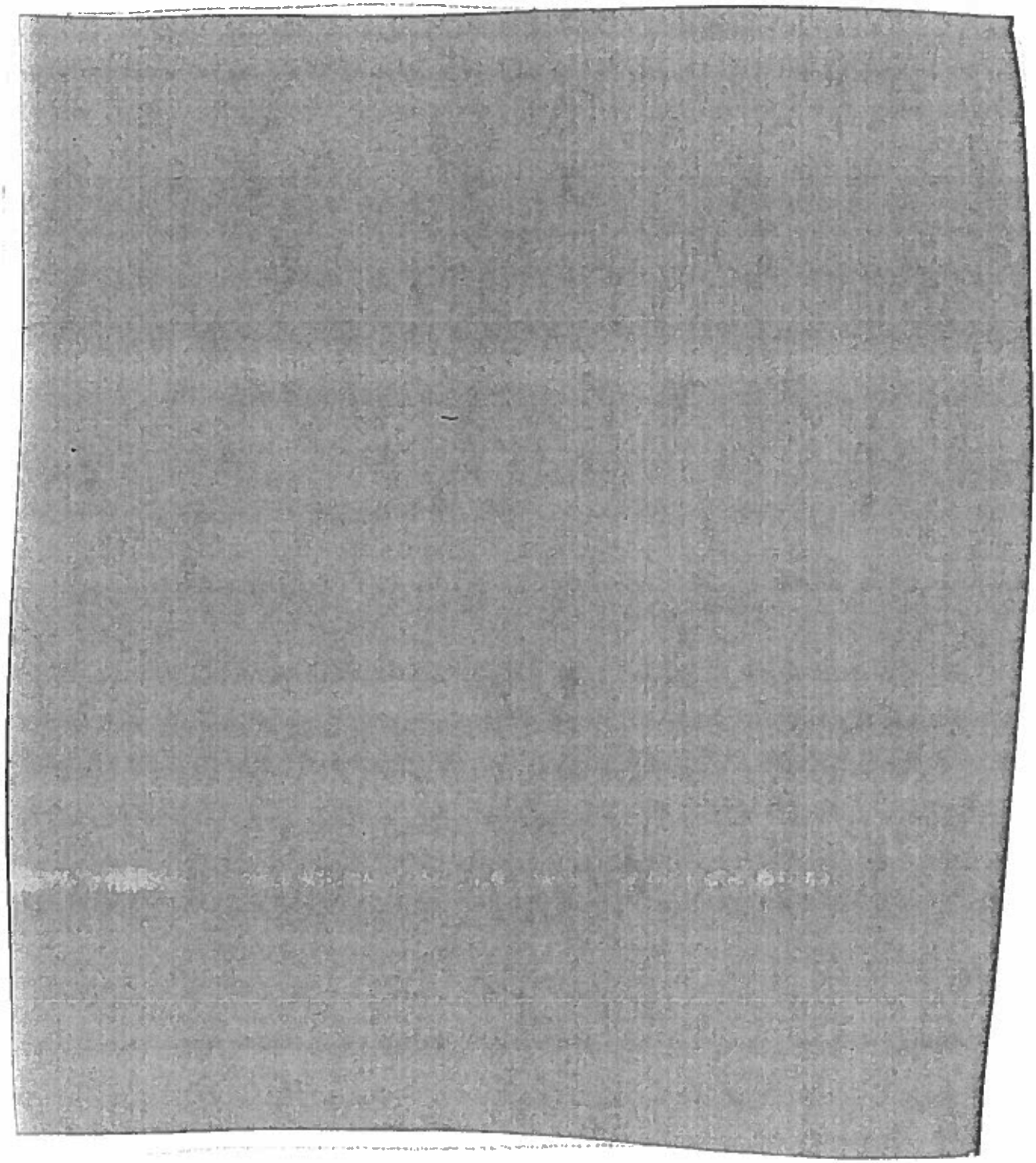
Nuclear Fuel, issues of 6 February 1989, 6 March 1989, 3 April 1989, 1 May 1989 (U);
"Tritium Transfer to Nuclear Weapons Program Detailed," JPRS-TND-90-013, Near East & South Asia, pp. 35–38, 8 August 1990 (U).



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