

46. Anderson, R. R., Menzel, R. and Wood, J. M., *J. Bacteriol.*, 1980, **141**, 1071.
47. Stalmach, M. E., Grothe, S. and Wood, J. M., *J. Bacteriol.*, 1983, **156**, 481.
48. Kaback, H. R. and Deuel, T. F., *Arch. Biochem. Biophys.*, 1969, **132**, 118.
49. Druger-Liotta, J., Prange, V. J., Overdier, D. G. and Csonka, L. N., *J. Bacteriol.*, 1987, **169**, 2449.
50. Munro, G. F., Herkules, K., Morgan, J. and Sauerbier, W., *J. Biol. Chem.*, 1972, **247**, 1272.
51. Le Rudulier, D., Yang, S. S. and Csonka, L. N., *Biochim. Biophys. Acta*, 1982, **719**, 273.
52. Gowrishankar, J., Jayashree, P. and Rajkumar, K., *J. Bacteriol.*, 1986, **168**, 1197.
53. Hagihira, H., Wilson, T. H. and Lin, E. C. C., *Am. J. Physiol.*, 1962, **203**, 637.
54. Franklin, C. S., Evered, D. F. and Nunn, P. B., *Biochem. J.*, 1970, **118**, 41P.
55. Pollard, A. and Wyn Jones, R. G., *Planta*, 1979, **144**, 291.
56. Arakawa, T. and Timasheff, S. N., *Biophys. J.*, 1985, **47**, 411.
57. Barron, A., May, G., Bremer, E. and Villarejo, M., *J. Bacteriol.*, 1986, **167**, 433.
58. Higgins, C. F., Sutherland, L., Cairney, J. and Booth, I. R., *J. Gen. Microbiol.*, 1987, **133**, 305.
59. Ames, G. F-L. and Higgins, C. F., *Trends Biochem. Sci.*, 1983, **8**, 97.
60. Ames, G. F-L., *Annu. Rev. Biochem.*, 1986, **55**, 397.
61. Higgins, C. F., Hiles, I. D., Whalley, K. and Jameson, D. J., *EMBO J.*, 1985, **4**, 1033.
62. Dassa, E. and Hofnung, M., *EMBO J.*, 1985, **4**, 2287.
63. Gowrishankar, J., *J. Genet.*, 1987, **66**, 87.
64. Koch, A. L. and Pinette, S., *J. Bacteriol.*, 1987, **169**, 3654.
65. Diblasio, E. A. and Vinopal, R. T., *Abstr. Annu. Meeting Am. Soc. Microbiol.*, 1986, K-123.

NEWS

RADIATION INCIDENT IN BRAZIL

Further information has now been made available to the International Atomic Energy Agency from Brazil about the origin and consequences of the radiation incident in Goiania, capital city of the State of Goias.

The incident followed the theft of a disused caesium-137 source which had been used for medical treatment at the local radiotherapy institute. Although it has not been used for some time, the source had been stored in a closed bunker. The thieves sold the source itself, with its protective shielding, to a scrap metal dealer who, not realising that the material he was handling was radioactive, broke open the container. The scrap metal dealer, his family, and some other persons who visited his premises, became contaminated.

Within a few hours, these persons developed symptoms characteristic of over-exposure to radiation and went to the local hospital for treatment. It was at this stage that the incident was detected, and the national atomic energy commission was notified.

More than 40 Brazilian experts were sent immediately to Goiania. They initiated procedures to define the affected area, and to monitor additional persons who might have been contaminated. The persons who were found to have been most seriously contaminated were sent to a naval hospital in Rio de Janeiro, where appropriate facilities for their treatment are available. Other, less seriously contaminated, persons were kept in hospital in Goiania. Seven contaminated areas were identified and isolated, and are now being decontaminated.

Assistance is being rendered by experts from Argentina, the Federal Republic of Germany, the Soviet Union and the United States.

According to the Brazilian authorities, the situation in Goiania is now considered to have been brought under control. However, at least four of the contaminated persons are in a critical condition.

The Brazilian Government has announced an official inquiry into the incident. (IAEA, Division of Public Information, Press Release Wagrammesstrasse 5, P. O. Box 100, A-1400 Vienna, Austria.)
