

Environmental  
Medical  
Service

MASSACHUSETTS INSTITUTE OF TECHNOLOGY  
MEDICAL DEPARTMENT  
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TO: John Glenn, Team Leader  
NRC Incident Investigation Team

FROM: Frank Massé, MIT RPO *FROM*

SUBJECT: Response to Your Memo of 10/20/95

DATE: October 23, 1995

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The primary consideration relative to the issue of the reportability of the  $^{32}\text{P}$  intake was our understanding of the regulations in 20.2202(b) and 20.2203(a). Through our investigations, there was never any indication of loss of control of activity beyond the quantity ingested by the individual exposed in this incident. At no time since the discovery of this incident did any result indicate the possibility that an individual could "receive, in a period of 24 hours, a total effective dose equivalent exceeding 5 Rems", the action level in 2202(b). All indications have been that the quantity involved and the intake was less than an ALI, and that the dose would be delivered over a period of weeks instead of within 24 hours.

Working primarily with ICRP30 and NUREG CR4884, calculations on initial intake from measurements through September 19, 1995 generally resulted in estimates of under 500  $\mu\text{Ci}$ , well below the 5 Rem, 30-day reporting requirements of 20.2203. Our final numbers are based on INDOS, which yields the highest intake estimate of all methodologies, but still below one ALI.

As we understand the requirements of 20.2203(a), relative to this incident, a written report would be required within 30 days after learning that the intake exceeded an ALI. Although that action level was not reached, we were prepared to report as soon as practical, without exercising a further 30 day delay, if the results reached or exceeded the action level late in the dose assessment exercise. It is our assumption that the 30-day period after learning that the exposure exceeds 5 Rem is provided to allow time to fully understand the nature and magnitude of the exposure. A late indication that the exposure would exceed 5 Rem in this case could have been reported quickly given the depth of the continuous efforts to understand the exposure since we first became aware of the intake.

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9703060287 *APP*

10-95-115

INCIDENT INVESTIGATION TEAM  
MEETING SIGN-IN

| DATE:    | NAME:                | REPRESENTING:           |
|----------|----------------------|-------------------------|
| 10/25/95 | John Glenn           | NRC - IIT Leader        |
| 10/25/95 | Alan Madison         | NRC - IIT Member        |
| 10/25/95 | Samir Sherbini       | NRC - IIT Member        |
| 10/25/95 | Betsy Ullrich        | NRC - IIT Member        |
| 10/25/95 | Cherie Siegel        | NRC - IIT Member        |
| 10/25/95 | Mary Glenn Crutchley | NRC - IIT Member        |
|          | Diane Serenci        | NRC - PAO               |
|          | John Kinneman        | NRC - RI                |
|          | Ken Campbell         | MIT News Office         |
|          | David B. O'Connor    | City of Cambridge       |
| 10/25/95 | Michael Galante      | MIT RPO                 |
| 10/25/95 | Jan Scrantom         | HHMI                    |
|          | Jane Guenent         | Palmer + Dodge          |
|          | Emily Rossie         | Howard Hughes Med Inst. |
|          | Maria Ahlgvist       | MIT CCR                 |
|          | Daniel Lichten       | MIT                     |
|          | Frank Masse          | MIT                     |
|          | C.B. Daly            | Washington Post         |
|          | Pam Greenley         | MIT                     |
|          | Charles Billings     | MIT                     |
|          | Bob Clifford         | MIT - IAO               |
|          | Jim Culliton         | MIT                     |
|          | Jennifer Guen        | WPAR                    |
|          | Paul Perazich        | MIT                     |
|          | Sarah Gallup         | MIT                     |
|          | Ron Sedwick          | MIT                     |
|          | William Irwin        | MIT                     |
|          | DONALD HAYS          | MIT                     |
| 10/25    | THOMAS F. O'Connell  | MDPH IIT OBSERVER       |
|          |                      |                         |
|          |                      |                         |