IEMA Response to FedEx Shipment Involving Radioactive Material

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Bureau of Radiation Safety
Illinois Emergency Management Agency
The Many Tentacles of the IEMA Notification and Response
Radiography Camera

- AEA/QSA Global Sentinel 880
- AEA/QSA Sentinel 600 and 865 Ir-192 source projectors
- NTP Ir-192 source container
- SPEC-150 Ir-192 source projector
- INC IR-100 gamma camera

Measurements on source changer outside of shipping container
Response Day

- IEMA Health Physicist dispatched.
- FedEx starts to spoon feed IEMA information
  - Details including Bill of Lading for the radiography camera.
- Federal agencies start to inquire
  - USNRC
  - PHMSA
  - FBI
Shippers Decleration for Dangerous Goods

Shippers: INDUSTRIAL NUCLEAR COMPANY
14320 WICKS BOULEVARD
SAN LEANDRO, CA 94577 - USA
TEL: 510-382-6767

Air Waybill No. 9380-4587-758S

Consignee: GREAT LAKES TESTING
2101 A HOLLOMBE WAY
GREEN BAY, WI 54304
DAVE JOHNSON TEL. 920-336-5554

Consignment No. TFGGR8A

Transport Details

Airport of Departure: OAK

Nature and Quantity of Dangerous Goods

UN Number or Caracteristic Number, proper shipping name, class or division (subdivision,包装 groups (if required), and all other required information.

RC2, UN2810, RADIOACTIVE MATERIAL, TYPE B(U) PACKAGE, 7.

IODIUM 192, SPECIAL FORM

( 1 ) TYPE B (U) PACKAGE 3737 GBq EACH PACKAGE

TRANSPORT INDEX 1.0

38cm x 46cm x 36cm

Competent Authority Certification USA/91888/U: 96 ATTACHED

IAEA Competent Authority Certification USA/929775: 96 ATTACHED

Additional Handling Information:

ATA/ICAO
FOLI Provider) Chemtrac A06: 3934

I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labelled/packed, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. I declare that all of the applicable air transport requirements have been met.

Signature

Jan 5, 2014

San Leandro, CA
Puzzling Circumstances
### First Puzzle Piece

- Category 1 and 2 RAM is tracked under the NRC National Source Tracking System.
- Receiving licensee reported RAM did not arrive within the specified time frame.

<table>
<thead>
<tr>
<th>Radioactive Material</th>
<th>Category 1 (TBq)</th>
<th>Category 1 (Ci)</th>
<th>Category 2 (TBq)</th>
<th>Category 2 (Ci)</th>
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<td>Americium-241</td>
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<td>1,600</td>
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<td>Americium-241/Be</td>
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<td>0.3</td>
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<td>Gadolinium-153</td>
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<td>0.4</td>
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<tr>
<td>Thorium-228</td>
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</tr>
</tbody>
</table>
Next Puzzle Piece at a Time: Let’s Talk Response

- IEMA HP arrives at salvage yard on 1/7/14.
Trailer
RAM Survey

- Where is the package in this mess?
  - Using a gamma scintillator the package was located within the trailer and extracted.
  - Dose rate surveys indicated that a dose rate within +/- 20% or the Transport Index. This along with visual inspection of the package indicated package integrity had been maintained.
  - Yet LAW indicated removable contamination of approximately 100K cpm using a Ludlum 44-9
  - Contamination was determined to be a beta emitter with no gamma contribution.
  - Gamma Spectroscopy
Drum and Overpack
Mean While at the Hall of Justice

- Communication Continues
  - USNRC
  - UDOT/PHMSA
  - ISP
  - FedEx/Consultants
There had to be a second radionuclide…….
The Culprit
Follow Up
No Radiological Health Risk

- Dose Estimations
- ALI for P-32
  - 600 uCi Ingestion
  - 900 uCi Inhalation
- First Responders were on supplied air.