

Thematic Area 7: Response to Nuclear Security Events



Nuclear Security Response Experience in Malaysia

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Atomic Energy Licensing Board

MALAYSIA

Legal Infrastructure for Nuclear Security

Elements from International Nuclear Security Instruments:

- Convention on Physical Protection on Nuclear Materials & its Amendment
- Code of Conduct on Safety and Security of Radioactive Source
- IAEA Nuclear Security Series



National Instruments

National Instruments



Act 304:
Preamble- Supervision & Control of atomic energy

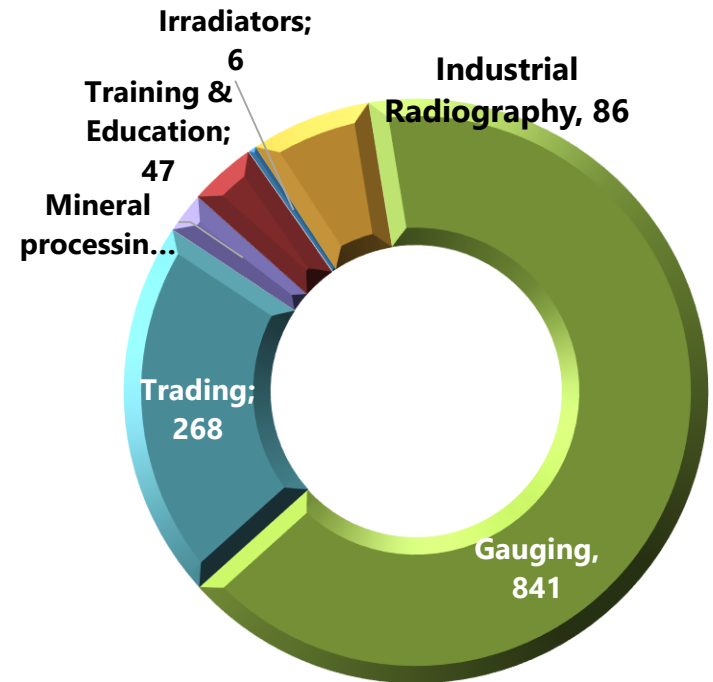
BSRP 2010:
Reg.70 – Protection against theft, lost & sabotage
Reg. 71 – Reporting and its content

License's Conditions

Security Plan

- National Directives on Crisis and Terrorism management (Directive No. 18), National Security Council
- Strategic Trade Act 2010 (Act 708)
- Criminal Procedure Code Act 2012 (Act 593)
- Security Offences (Special Measures) Act 2015 (Act 2012)
- Prevention of Terrorism Act 2015 (Act 2015)

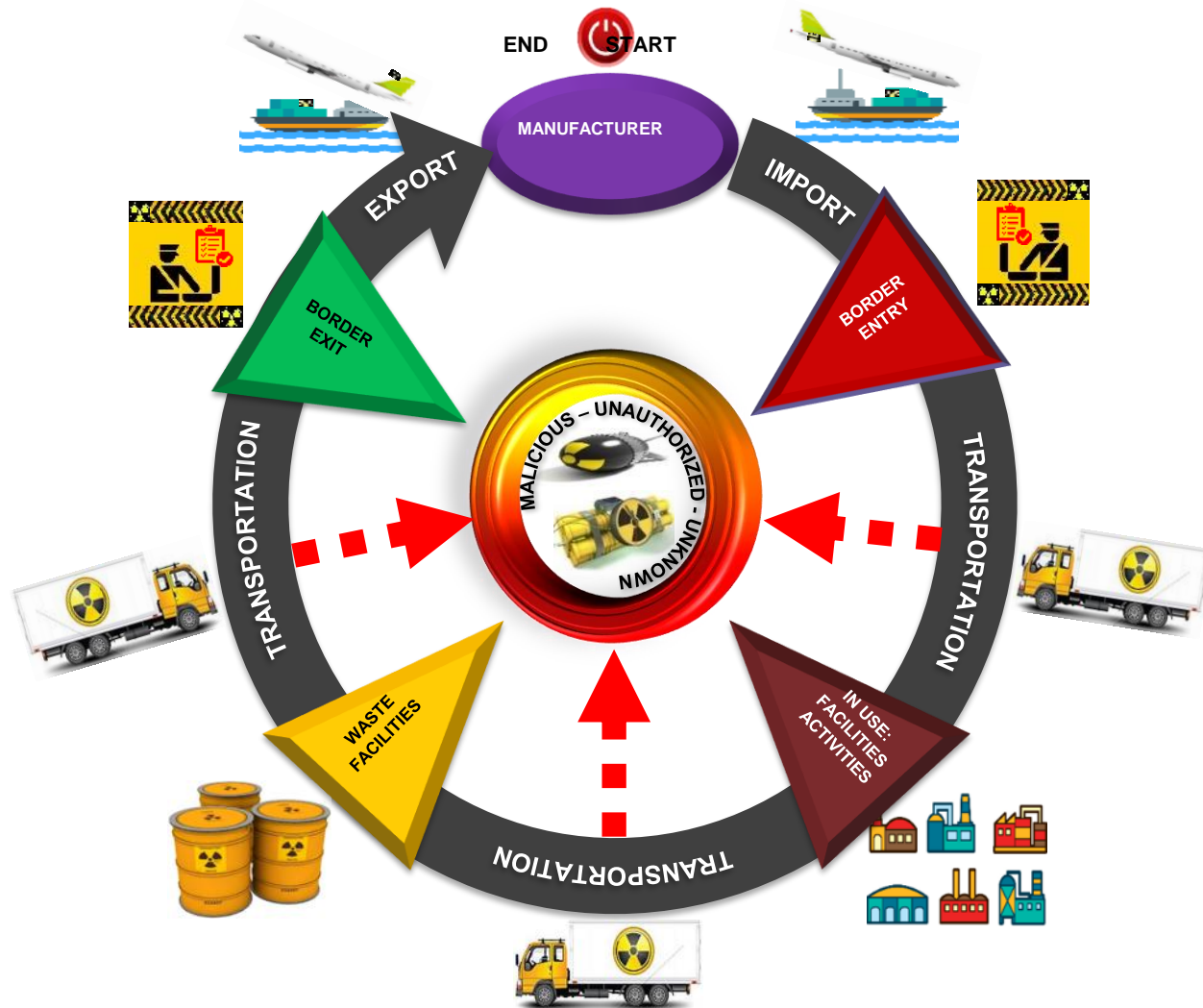
Regulatory Control



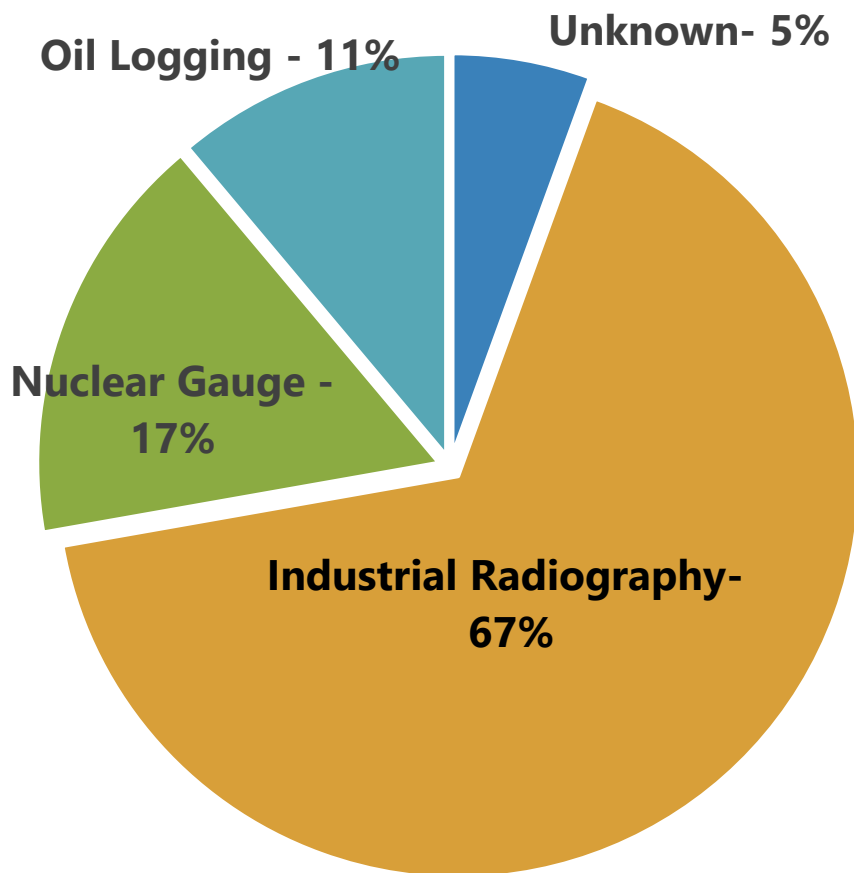
**NUMBERS OF LICENSE HOLDERS
- 1193**

Sources : eSPP AELB 2018

Areas of Nuclear Security Control



Recorded Case of Nuclear Security Events

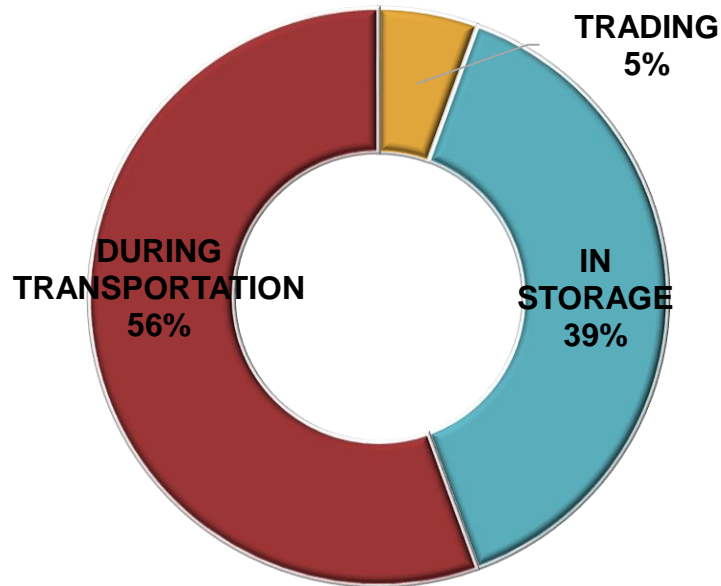


- Data from 1990s to 2017
- Radioactive sources Mobility increase vulnerability
- Events due to theft, stolen, missing and lost.

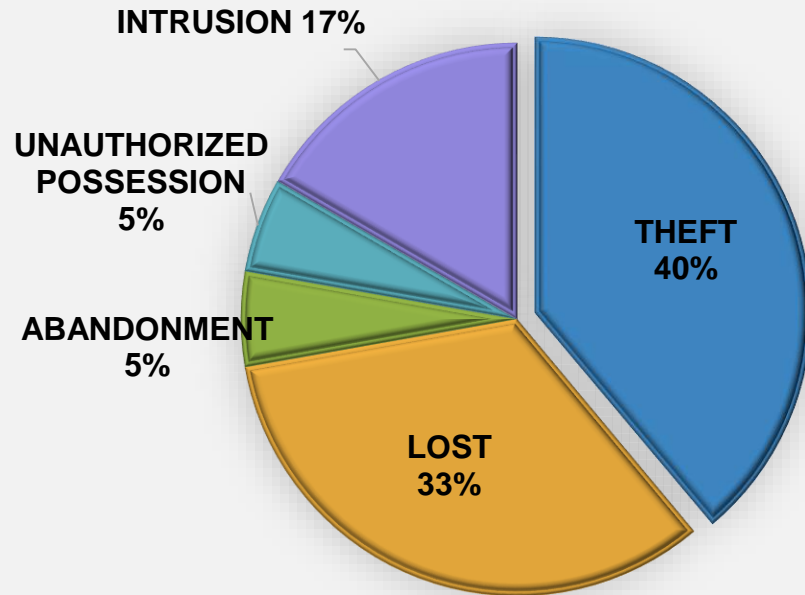


Crime Scene & Exhibits

Phase & Type of Nuclear Security Events



Phase of Incidents



Type of Incidents



THE AWAKENING EVENT

Stolen of gamma projectors



#klang Serpihan projektor itu dijual di sebuah kedai lusuh di Kampung Jawa dan bakinya diletakkan dalam stor di Pangsapuri Sri Era, Desa Latania.
<http://bit.ly/2lzYyYe>



Lapan ditahan curi projektor radi
Klang: Polis menahan lapan individu yang diperc
projektor radioaktif di Sungai Kandis, Batu Tiga, di
HMETRO.COM.MY

Bomb-shaped objects turn out to be radioactive

Bernama | February 12, 2017

They were stolen from an oil exploration company in Klang recently.



men after finding several objects containing radioactive
hidden in the cable room of an apartment in Section 36 here

men followed the discovery of several bomb-shaped objects by
Kampung Jawa, Klang, last Thursday.

radioactive material sold at the shop was reportedly stolen from an
ntly.

The Case

- February 09th 2017
- Two (2) units of gamma projectors model Sentinel 880 Delta belongs to an industrial radiography company was stolen from a vehicle parked at commercial building in Klang, Selangor Material
- Sources involved were Iridium192 with Activities of 43.6 and 35.8 Ci respectively
- The Sources were left unattended in the vehicle in front of main premises
- The incident was reported to local Police and AELB immediately
- Malaysia also reported the case to ITDB, IAEA

The Response

- On the reported day, join search was conducted by AELB with the cooperation from Royal Malaysian Police (RMP)
- The company conducted independent search to targeted areas around the city.
- After extensive searching effort, the housing of gamma projector was first found at a illegal scrap metal premise close to the licensee premise
- The Ir-192 sources was found at a residential area adjacent to the scrap metal premises



Remaining of Gamma Projector at the Scrap Metal Premises



Ir-192 sources at the residential areas



Crime Scene & Exhibits

Main concern why it is an awakening

- The gamma projector were properly dismantled and sent to illegal scrap metal premise
- The Ir-192 sources were placed at residential areas separately
- The depleted uranium shielding were not found together with the housing of the gamma projector
- The suspects does not received excessive dose
- One public (The cleaner) received radiation exposure



The housing of gamma projector



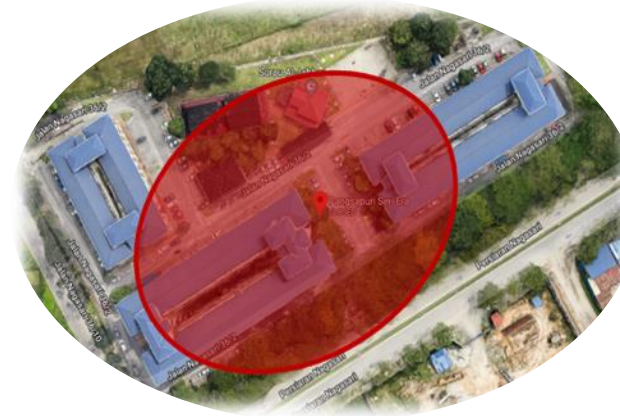
The Iridium Sources



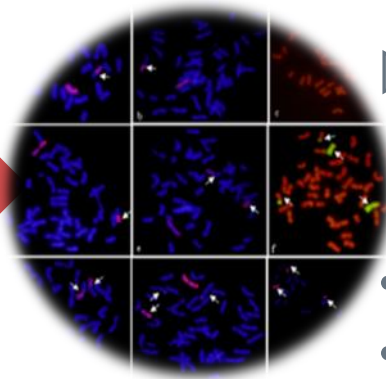
Locations where the sources were found

Resources and Efforts for Response

- ▷ Evacuation
 - more than 250 residents
 - more than 50 houses



- ▷ Dose assessment - TLD & Chromosome Abrasion Test
 - Affected residents
 - Rescue team



- ▷ Medical surveillance
 - Affected residents
 - Rescue team



AEELB
ATOMIC ENERGY
LICENSING BOARD



Operation : Estimated Financial Loss



RM 260K



**TOTAL
LOSS
RM 330K !!!**



RM 35K



RM 10K



RM 15K



RM 10K

NOW TRENDING:
365 NEWS • 365 • BERITA

**PENDUDUK DINASIHAT JALAN
Pemeriksaan Kesihatan Kerana
Penemuan Bahan Beradioaktif**

| February 13, 2017 | Uncategorized | No Comments

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Post Operation : Non Tangible Cost

- Awareness to Terrorism/Criminal Group
- Addressing Public Fear and Concern
- Government Reputation



SOURCE: NST 14 FEBRUARY 2017

NEWS

Fatal Radioactive Device Lost Along Seremban-Shah Alam, Fear It Gets Into Wrong Hand

wanxiang | August 20, 2018



SOURCE: NST AUGUST 2018

Post Operation : Worst Case Scenario

Radiological Consequences

Iridium -192

- 43.6 Ci &
- 35.8 Ci

at 1.0 m for 8
hrs
= 2658 mSv

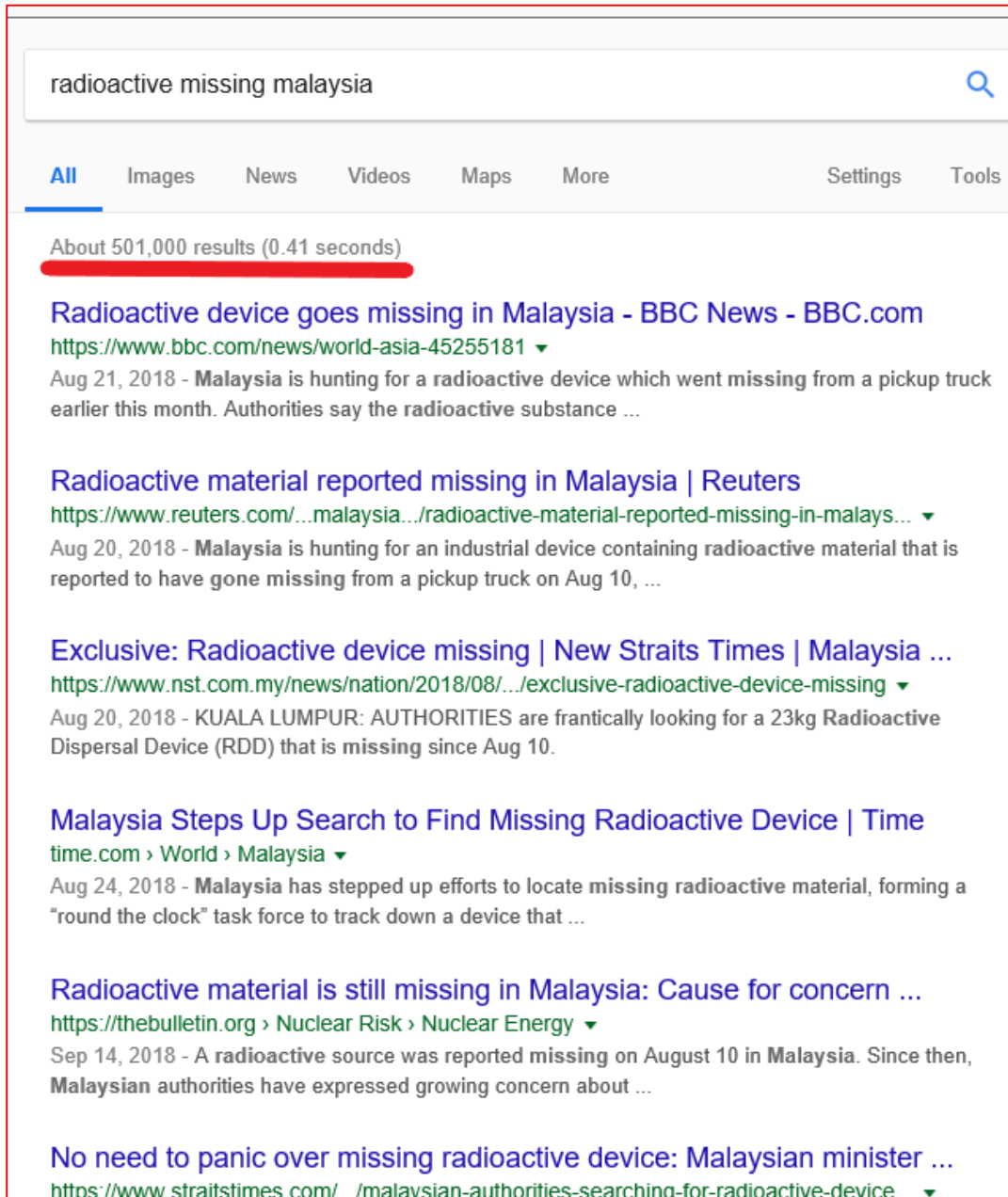
at 0.1 m for 1 hr
= 33347 mSv



Worst Possibility

1st Death in Malaysia !!!

OVERALL CONSEQUENCES ANALYSIS



radioactive missing malaysia

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Radioactive device goes missing in Malaysia - BBC News - BBC.com
<https://www.bbc.com/news/world-asia-45255181> ▼
Aug 21, 2018 - Malaysia is hunting for a radioactive device which went missing from a pickup truck earlier this month. Authorities say the radioactive substance ...

Radioactive material reported missing in Malaysia | Reuters
<https://www.reuters.com/...malaysia.../radioactive-material-reported-missing-in-malays...> ▼
Aug 20, 2018 - Malaysia is hunting for an industrial device containing radioactive material that is reported to have gone missing from a pickup truck on Aug 10, ...

Exclusive: Radioactive device missing | New Straits Times | Malaysia ...
<https://www.nst.com.my/news/nation/2018/08/.../exclusive-radioactive-device-missing> ▼
Aug 20, 2018 - KUALA LUMPUR: AUTHORITIES are frantically looking for a 23kg Radioactive Dispersal Device (RDD) that is missing since Aug 10. ...

Malaysia Steps Up Search to Find Missing Radioactive Device | Time
time.com > World > Malaysia ▼
Aug 24, 2018 - Malaysia has stepped up efforts to locate missing radioactive material, forming a "round the clock" task force to track down a device that ...

Radioactive material is still missing in Malaysia: Cause for concern ...
<https://thebulletin.org> > Nuclear Risk > Nuclear Energy ▼
Sep 14, 2018 - A radioactive source was reported missing on August 10 in Malaysia. Since then, Malaysian authorities have expressed growing concern about ...

No need to panic over missing radioactive device: Malaysian minister ...
<https://www.straitstimes.com/.../malaysian-authorities-searching-for-radioactive-device...> ▼

➤ Facing and Answering to International Society

➤ Credibility and reputation

➤ Awareness and Understanding

➤ Searching and all Reasonable Efforts

➤ Root Cause Analysis

➤ Conspiracy and Theory

➤ Loss and Cost



EFFORTS TO REGAINING CONTROL

Things to Ponder

Responsibilities Vs Burden

Types of Events	Numbers
Intrusion	3
Lost	6
Theft	7
Unauthorized Possession	1

Exclusive: Radioactive device missing | New Straits Times | Malaysia ...
<https://www.nst.com.my/news/nation/2018/08/.../exclusive-radioactive-device-missing> ▼

Aug 20, 2018 - According to published reports, Iridium-192 is one of the most- stolen commercial radioactive isotopes that can be used in a dirty bomb — a ...

Radioactive device goes missing in Malaysia - BBC News - BBC.com

<https://www.bbc.com/news/world-asia-45255181> ▼

Aug 21, 2018 - Malaysia is hunting for a radioactive device which went missing from ... part of a weapon - a so-called dirty bomb - if it fell into the wrong hands.

Radioactive material goes missing from truck in Malaysia prompting ...

<https://www.independent.co.uk › News › World › Asia> ▼

Aug 20, 2018 - Deadly radioactive material has gone missing in Malaysia, prompting fears it could be used by terrorists to build a dirty bomb. The iridium was ...

'Missing radioactive material can easily be turned into bomb' | Free ...

<https://www.freemalaysiatoday.com/.../missing-radioactive-material-can-easily-be-turn...> ▼

Aug 20, 2018 - 'Missing radioactive material can easily be turned into bomb'. By ... PETALING JAYA: The missing 25kg of radioactive material could easily be turned into a bomb, Malaysia oil firm Hibiscus Petroleum to double production ...

Police say radioactive device still missing, likely within Selangor ...

<https://www.thestar.com.my/.../police-says-radioactive-device-still-missing-likely-withi...> ▼

Aug 23, 2018 - SHAH ALAM: The 23kg Radioactive Dispersal Device (RDD) that went ... it could be used to make a dirty bomb if it falls into the wrong hands.

Radioactive material reported missing in Malaysia | Reuters

<https://www.reuters.com/...malaysia.../radioactive-material-reported-missing-in-malaysi...> ▼

Aug 20, 2018 - Malaysia is hunting for an industrial device containing radioactive ... might try to build a crude nuclear device or a so-called "dirty bomb", the ...

Radioactive material reported missing in Malaysia - Channel NewsAsia

<https://www.channelnewsasia.com/.../radioactive-material-reported-missing-in-malaysi...> ▼

Aug 24, 2018 - KUALA LUMPUR: Malaysian authorities are hunting for an industrial ... who might try to build a crude nuclear device or a so-called "dirty bomb", ...

018/01/missing-radioactive-materials-in-msia-terrorists-dirty-bombs/

[UPDATE] Malaysia Impossible:... BI Critical ingredient for nuclear ... (32) Keane - Somewhere Only ...

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Gift from Tenor

Counter-terrorism unit should take the lead

To be fair, the AELB has made efforts to regulate the movement of hazardous materials in Malaysia.

Hamrah described how the Board have equipped the country's ports and main points of entry with radiation detectors, and how Customs officers are trained to handle detection.

But the concern is that these cases should be treated as a potential terrorist threat.

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