



IAEA

International Atomic Energy Agency
Atoms for Peace and Development

NORM IX

IAEA Workshop on the Safe Management of NORM

**ORPAS 2018 Mission to Indonesia
NORM Related Work**

Teng Iyu Lin

Overview



Mission date: 4-13 November 2018

Location: Jakarta/ Indonesia

- Mohammad Hassan Kharita Team Leader (Qatar)
 - Vangeline K. Parami Deputy Team Leader (Philippines)
 - Abdul Kadir Ahmad Bazlie Malaysia
 - Ichiro Yamaguchi Japan
 - Pattama Na Nakorn Thailand
 - Renato Banaga Philippines
 - Meherun Nahar Bangladesh
 - Jim Hondros Australia
 - Teng Iyu Lin Malaysia
 - Tae-young Lee South Korea
 - H. Burçin Okyar Team Coordinator (IAEA)
 - Ekaterina Panteleymonova Administrative Assistant (IAEA, Vienna based)
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- Mission based around “practical advice” and visits to facilities
 - Involvement of regulatory authority in visits (Bapeetan)

Focus of Team

Regulatory Arrangements
Technical Support Organisations
Medical Facilities
Industrial Applications
Industries Involving NORM
Research Reactor



Conduct of Appraisal



- A site visit
- Welcome meeting then and discussions and interviews with corporate and operational personnel,
- Review and inspection of documents
 - Evidence of the implementation of the occupational RP arrangements
 - Detailed discussions with HSE / RP personnel
- Monitoring the external radiation dose in the operational areas
- Immediate feedback at close out meeting
- Preparation of report with recommendations for the operator and regulator

Arrangements Reviewed



- Authorization Details
- Management Structure
- Radiation Protection Programme (RPP)
- Control And Accountability Of Radioactive Sources
- Radiation Protection Measures
- Workplace Monitoring Programme
- Individual Monitoring Programme
- Staff Selection, Information And Training
- Emergency Arrangements (Emergency Plans)
- Health Surveillance Programme
- Quality Assurance Programmes

NORM Team Visits

A screenshot of a Google Maps browser window. The browser's address bar shows the URL: <https://www.google.com/maps/place/Indonesia/@-3.2048934,111.4911393,6z/data=!>. The map displays the Indonesian archipelago. Two red circles are drawn around the cities of Jakarta on the island of Java and Balikpapan on the island of Kalimantan. A thick green arrow points from the Jakarta circle to the Balikpapan circle. The browser's taskbar at the bottom shows various application icons, including Windows, Word, Edge, and File Explorer. The system tray in the bottom right corner displays the date and time as 1:46 PM on 24/11/2018, along with system icons for network, volume, and power. The text "Christmas" is visible in the bottom left of the taskbar area.

PT Pertamina

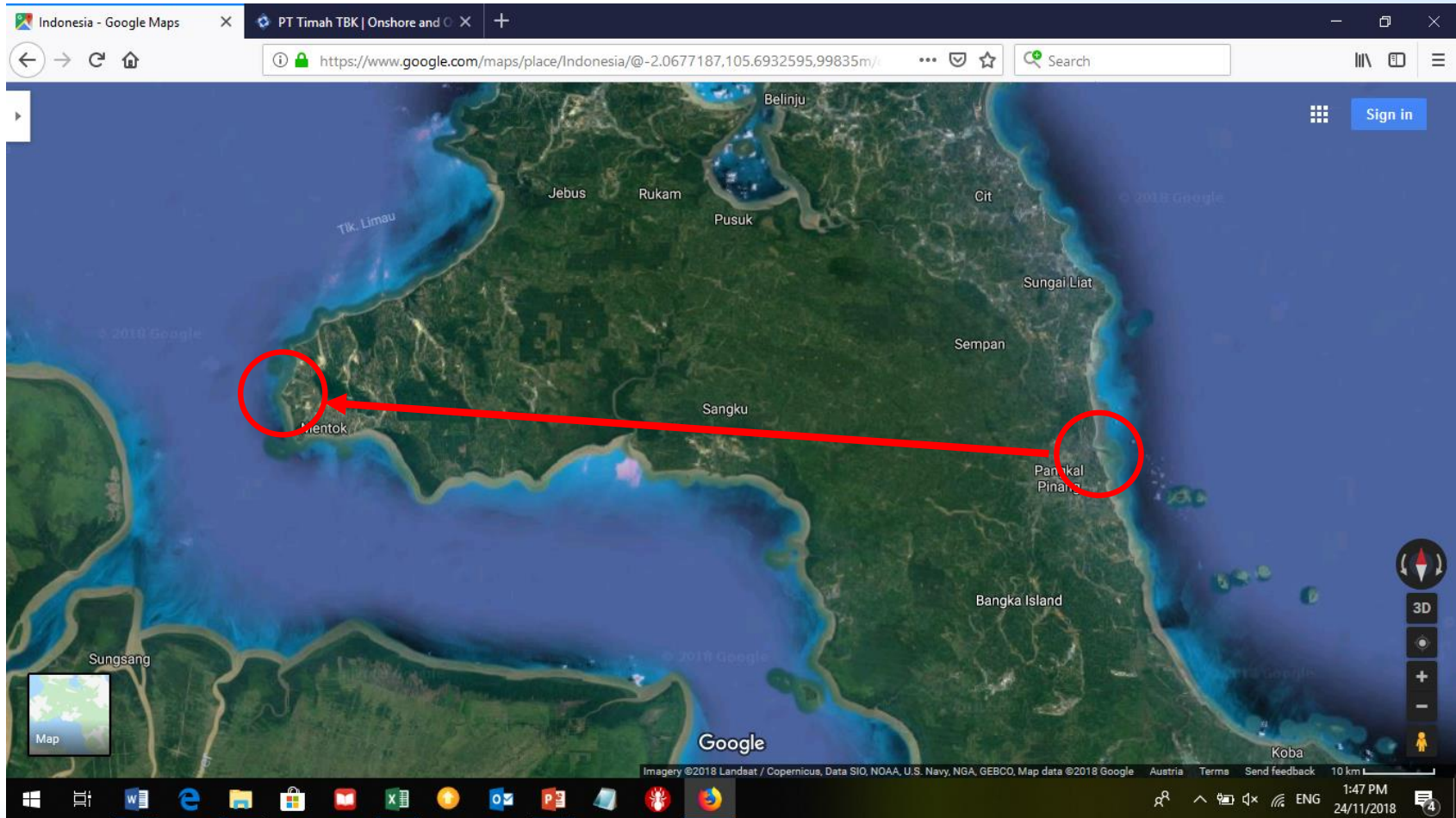
- State owned oil and gas company
- Manages PT Pertamina Hulu Mahakam in Balikpapan, East Kalimantan (known as SPS).
- The facility consists of a gas and crude oil processing facility and an ocean shipping platform
- Legacy NORM from previous site use
- High focus on operational HSE
- Meetings with:
 - Site Manager
 - Operations Manager
 - HSE Manager
 - HSE staff
- Attendance by Bapeetan representatives



NORM Team Visits

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Bangka Island



Located 130km west of the head office which is in Pangkal Pinang on Bangka Island.

PT Timah

- Large integrated Indonesian tin mining company
- Exploration, mining, mineral processing, smelting, refining through to final product marketing.
- PT Timah metallurgical processing facility at Mentok, (UNMET) treats onshore and offshore sourced tin ore
- Washed and separated to produce a number of products including; a tin concentrate, a monazite, ilmenite, xenotime and zircon
- Main Issues
 - Ore contains elevated natural thorium,
 - NORM residues
 - Unable to export some products
- Meetings with:
 - Site Manager
 - Operations Manager
 - HSE Manager
 - HSE staff
- Attendance by Bapeetan representatives



Mining



NORM Residue Management



Mission Observations



- Interaction of team members
- Varied skill sets
- Shared learnings
- Active feedback well received
- Participants keen to gain extra knowledge
- Value for:
 - People reviewing
 - Organisations being reviewed
 - Individuals in organisations and regulatory agencies



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Thank you!

