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)

- 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
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
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
Thank you!