Experience of IAEA UPSAT Mission to Uranium Sites as a Means of Sustaining Best Practice for Uranium Production in Tanzania

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Tanzania Atomic Energy Commission
Content

• Introduction
• Need for Independent International Review
• Regulatory Overlaps
  – Harmonization
• Sustainable Uranium Production
• Health, Safety and Environment
• Social Licensing
  – Awaness program
• Capacity Building
• Conclusion
Introduction

- Uranium exploration and feasibility studies in the country found several economical uranium projects
- The Country had no specific laws for regulating uranium mining;
- **Tanzania Atomic Energy Commission prepared the following:**
  - Initiated the Review of Atomic Energy Act;
  - Developed new regulations;
  - Initiated studies to establish preliminary baseline data
  - Conducted national uranium training courses, workshops and seminars to different stakeholders
  - Co-ordinated with allied government institutions in harmonizing uranium mining and milling regulatory procedures;
  - Participated in meetings with stakeholders to review the Environmental Impact Assessment report for Mkuju River Uranium project; and
The Country self-appraisal on the readiness to regulate uranium mining, esp. in an environmentally "sensitivity" area.

– The review was tasked to appraise countries preparedness for overseeing the Uranium Production Cycle special focus on Mkuju River Project.

• Superb experience gained for future of the uranium industry in the country.
### 1. REGULATORY SYSTEM: LEGISLATIVE OVERLAPS (1/3)

<table>
<thead>
<tr>
<th>Ministry of Minerals and Minerals (MEM)</th>
<th>Tanzania Atomic Energy Commission (TAEC)</th>
<th>National Environmental Council (NEMC)</th>
<th>Ministry of Natural Resources and Tourism (NRT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mining (Radioactive Minerals) Regulations 2010</td>
<td>Radiation Safety in Mining and Processing of Radioactive Ores, Regulations 2011</td>
<td>Environmental Management (EIA and Audit) Regulations 2005</td>
<td>Exploration and mining of Oil, Gas and Uranium in Game reserve</td>
</tr>
<tr>
<td>Mining (Environmental Management and Protection) Regulations 2010</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Special Mining License</td>
<td>License to prospect, prepare site and construction, ore processing &amp; transport and facility decommission and closure</td>
<td>Project registration</td>
<td>Consent to operate</td>
</tr>
</tbody>
</table>
## 1. REGULATORY SYSTEM: LEGISLATIVE OVERLAPS (2/3)

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<td>Rehabilitation bond</td>
<td>Insurance funds for decommissioning and closure</td>
<td>Environmental performance bond</td>
<td>Payment of concession cost and protection fee</td>
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- **Ministry of Minerals and Minerals (MEM)**: Rehabilitation bond
- **Tanzania Atomic Energy Commission (TAEC)**: Insurance funds for decommissioning and closure
- **National Environmental Council (NEMC)**: Environmental performance bond
- **Ministry of Natural Resources and Tourism (NRT)**: Payment of concession cost and protection fee

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1. REGULATORY SYSTEM: LEGISLATIVE OVERLAPS (2/3)
Legislative harmonization (3/3)

1. Steering Committee
   Senior government

2. Task Force
   MEM TAEC NEMC MNRT

3. Reference Group
   OSHA SUMATRA MoWI
### 2. Sustainable uranium production life-cycle (1/2)

<table>
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<tr>
<th>Recommendations</th>
<th>Implementations/Overseen implantation</th>
</tr>
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<tr>
<td>- MEM and TAEC officially report on uranium exploration,</td>
<td>Government very positive</td>
</tr>
<tr>
<td>resources, production plans to NEA/IAEA Uranium Group</td>
<td></td>
</tr>
<tr>
<td>- Review of logistical arrangements- trucking movement,</td>
<td>Operator Very Positive to compliance</td>
</tr>
<tr>
<td>worker rotation, materials control etc</td>
<td></td>
</tr>
<tr>
<td>- Recombine the tailings (SCATS and TSF) and placement in</td>
<td>Operator Very Positive to compliance</td>
</tr>
<tr>
<td>one area and then using in-pit disposal as mined out areas</td>
<td></td>
</tr>
<tr>
<td>become available</td>
<td></td>
</tr>
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<td>Recommendations</td>
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<td>--------------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------</td>
</tr>
<tr>
<td>Review the TSF area in terms of dam design, geotechnical stability and solution confinement as the tailings area is filled</td>
<td>Operator Very Positive to compliance</td>
</tr>
<tr>
<td>Review TSF structure: Located in a poorly consolidate lithological setting</td>
<td>Operator Positive to compliance</td>
</tr>
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</table>
Health, Safety and the Environment (1/3)

• Conduct a hands-on radiation assessment
• Long term stability and confinement of infrastructures for tailings and SCATS
• Review water (including the re-use of process water) and related discharge management plans
• Review and revisit scenarios and models for possible TSF failure
Establish an Environmental Monitoring (EMP) plan in consultation with the community,

Establish a Community Consultation Committee (CCC) to keep matters of interest such as the sustainability objectives of the EMP under review

Emergency preparedness and response integrated to the HSE management at the operator level and to the national radiological emergency program

The Operator and Regulatory establish a robust monitoring program for the routine operation of the uranium mining and milling—Report other but also include incident and accident scenarios
Health, Safety and the Environment (3/3)

- Establish stakeholder engagement and public awareness programs

- The security plans for off-site transport of yellowcake should be established by involving the operator, regulatory body, transport authority and public security agencies

- Prepare suitable security regime at the port for yellowcake storage and export
Social Licensing

• MRP enjoys a social license at the local level, being well accepted by the local and regional communities.

• Uranium mining as a whole in URT is experiencing varied levels of public acceptance—there are some skepticism or resistances:
  – Resistance in most pronounced in central part where the social license has not been achieved—
  – Blocking efforts for exploration to progress for potentially promising projects.

This report comes with important recommendations to the governing authorities to reconsider the move to allow Uranium mining to be carried out in Tanzania, but instead look at the long-term impacts that will come from this activity.

Christian Council of Tanzania
Tanzania Episcopal Conference
The National Muslim Council of Tanzania
Social Licensing

Opposition: International motivated

conference of IPPNW - International Physicians for the Prevention of Nuclear War and uraniu-network.org, Germany- in cooperation with LHRC (Legal and Human Rights Center) Tanzania, Rosa Luxemburg Foundation East Africa Regional Office, NaCUM (National Coalition on Uranium Mining) and CESOPE

URANIUM-MINING: IMPACT ON HEALTH AND ENVIRONMENT

Tuesday October 1 to Sunday October 6 2013

Location:
Dar Es Salaam and Bahi /Dodoma
United Republic of Tanzania
Social Licensing

Community meeting are paid

Bahi Community meeting
Venue: Bahi Mission, 10.00 h

Resistance to Uranium - Mining in Central Tanzania

Health Impact: Uranium as Heavy Metal and Source of Radiation:
  Introduction
  Anthony Lyamunda, CESOPE, Tanzania
  Scientific basis
  Doug Brugge, Prof, MD, USA
  Human health
  Dale Dewar, MD, Physicians for Global Survival (IPPNW)Canada

Environmental Impact
  The Experience with Uranium Mining in Germany from 1950 - 1990
  Sebastian Pflugbeil, PhD, President German Society for Radiation Protection

Social, Economic and Political Impact
  Experiences in Australia
  Dave Sweeney, ACF (Australian Conservation Foundation), Australia
  The Experience with Uranium Exploration in Falea, Mali
  Delegation from Mali
  Political Impact in Tanzania
  Tundu Lissu, Member of Parliament, Lawyer, Tanzania (invited)
  View of Young Tanzanians
  Rachael Chagonja, Tanzania
  Questions and Answers-Peroid & Panel Discussion
  of Presenters and Thomas Seifert, Prof, Senior Research Geologist, Germany

Thursday, October 3, 2013

Transfer Participants from Dodoma to Dar es Salaam
Afternoon: Press Conference
The government should quickly stop the exploration and mining of uranium," the Rev. Leonard Mtaita, a Lutheran who is the council's general secretary, told ENInews on 15 June. "It is an extremely poisonous mineral that has a serious impact on people and the environment. We are concerned the government does not have the capacity to deal with its threats."
Lesson Learnt from Gas Protest
Social Licensing

- The prepare a prospectus or handbook for investors, with special attention to requirements for uranium exploration and mining
- Functional Separation for government to be both strategic partner and regulator
  - Possible risk of conflict of interest or moral hazard
  - The separation should be attempted after a sustainable regulatory capacity is built
- To underpin and retain the social license, a Community Consultative Committee (CCC) should be formed and supported
  - Chaired by a local representative
  - Have representation from local community stakeholders, local government officials, NGOs, and the operator
  - This committee should be the vehicle of communicating aspects of environmental studies and its management and the Corporate Social Responsibility (CSR) programme to public
Awareness programs

Schools

Military
Competency-based training requires a carefully graded approach based on, or applied to, specific grades of job, and particular job descriptions: classical 5 tier system proposed.

- Novice
- Advanced Beginner
- Competent
- Proficient
- Expert
Capacity Building (2/2)

MRP DASHBOARD: MILESTONE-DRIVEN, INTEGRATED SOCIAL LICENCE AND CAPACITY-BUILDING

Feedback/ Lessons Learned

Project Delivery

Special Mining Licence

Construction Start

Mining/Milling

Yellowcake Shipment

Mine Closure

Handback to URT

Regulatory Oversight

Capacity Building

TBL KPIS

Economic - Jobs etc

Social - Social capital etc

Environmental - Ag, tourism etc

KPI related, Milestone-specific Competencies

Map milestones and competencies into an activity matrix
IAEA UPSAT Mission had +Ve impact for uranium mining industry in Tanzania

– For Regulators
– Operators
– Shareholders and Stakeholders
-International Atomic Energy Agency (IAEA)
REFERENCE
IAEA Report of the International expert review of the operations and regulation of uranium exploration and mining projects in United Republic of Tanzania, 27 May to 5 June, 2013
Thank you for your Attention

Mt. Kilimanjaro