Slide 1

Utilisation of special measurement equipment vehicles belonging to the Regional School and Fire and Disaster Protection Technical Equipment (LSTE) in International Monitoring Spots (IMS)
Joining competence in order to take measurements and assess harmful substances in Land Brandenburg

Great tyre dumping ground fire, April 2002, Oranienburg
Great dumping ground fire, May 2002, Pinnow
Great tyre dumping ground fire, September 2005, Bernau

Herr Kurt Seehaus
Herr Joachim Unruh
LSTE

Slide 2

1. Initial status
2. ABC – ErkKW detection vehicles power
3. Special activity measurements capabilities (MBSE) of the Environment Protection Office (LUA)
4. Assessment
5. Solutions / grading system which efficiently measures harmful substances
6. Activities

Slide 3

I. Initial status

- In Autumn 2005, at the Bernau dump site, significant quantities of volatile substances polluted the air
- Problems with oxidation and assessment of harmful volatile substances
- Lack of efficient co-operation between emission protection authorities and the Fire Brigades

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- In view of past experiences, a shareholder company was set up, connecting different administrative bodies and industries with representatives of MI, LUA, LSTE, and regional lab (LLB)
- RESULT:
  - Fast sampling by the Fire Brigade using a detection pipe, and additional sampling sets mounted on ABC – ErkKW detection vehicles (A carbon, tenax)
  - Additional training of firemen at LSTE (particularly regarding sampling and sample assessment).

Slide 5

Conclusion:

- Steps taken do not solve a problem of fast, qualified analysis of air as aid in decision taking and operational control on location

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II. ABC – ErkKW detection vehicles power

- There are 28 W ABC – ErkKW detection vehicles in Land Brandenburg
- Equipment: Protective masks, compressed air breathing apparatus, CSA, filters, measurement equipment.
- It is possible to send data to control locations
- Satellite navigation system (GPS)

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ABC – ErkKW detection vehicles tasks

- Measurement and detection of radioactive and chemical pollution
- Finding radioactive fragments
- Marking and control over polluted areas
- Finding leaks in industrial installations

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Measurement equipment:

- FH 40 G u. Radiometer NBR FHZ 672 detector (radiological measurements)
- Photo ionisation detektor (identification of chemical substances)
- Portable ion spectrom eter (hazardous/ military chemical weapons detector)

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Identification for the purposes of operational control:

- Suggestions as to operational forces self-protection (kind of protective clothing)
- Identification and enclosure of hazardous area
- Operational tactical decisions
- Initiative while co-operating with other official institutions

Accurate field analysis and assessment is impossible for fire brigades equipped with measurement systems mounted on ABC – ErkKW detection vehicles!

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III. Special activity measurements capabilities (MBSE) of the Environment Protection Office (LUA)

- Qualified, on-site analysis of air has been envisaged
- To that purpose, there is a portable mass spectrometer, gas chromatographs, and soil, air, and water sampling sets

Grounded due to too small load, as well as technical and logistic reasons!

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IV. Assessment

- Fire brigades must adjust body and respiratory tract protection, basing on their own measurements in traditional conditions (detection pipes, exmeters, radiological measurement and warning devices).
- When the situation is complex, the above are not enough to give directions as to how to protect operational forces and the general public (i.e., evacuation)
- A necessity to set up a practical assessment, measuring and detecting system at the regional level

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Solutions / grading system which efficiently measures harmful substances

Merging personal and technical capabilities at the regional level

- LUA - as a specialist institution, a technically responsible office
- LSTE - as fires and disasters competence Centre
- LLB - as an analysis and assessment location

Planning a graded system

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Task allocation:

Existing personal and technical competences as an Educational and Technical Institution!

- Takeover and activation of MBSE, including GC/MS technologies of LUA Environment Protection Office
- Stationing, maintenance and securing operational capabilities of mobile GC-/MS system at LSTE, at official location in Borkheide
- Staffing with a driver and measurements technician (as needed, supported by a Fire Brigade technician)

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Task allocation:

- Including technical and research staff (Chemistry graduates, analysts) into the process of measurement taking and assessment
- Nominating a number of experts, employment on the basis of phone alarm list (according to set priorities)
- Independent merger of technology and staff in the procedure of field encounter, or pickup by a LSTE vehicle and getting to the location together

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A graded system - Grade 1

Simple hazards (known harmful volatile substances or industrial chemicals)

- Fire Brigade units arrive on location independently with technical equipment
  - ABC-ErkKW, GW-Mess detection vehicle
  - Standard fire extinguishing vehicle with portable measurement equipment
  - A vehicle equipped with devices

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A graded system - Grade 2

Complex hazards (with emissions of numerous unidentified harmful substances)
A Hazardous Substances Fire Brigade Unit, special measurement LSTE vehicle with personnel support (if necessary, external support, such as TUIS – traffic accidents support and information system) participate in the operation

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A graded system - Grade 3

Additionaly, in case of Grade 2, the nearest Analytical Task Force (ATF) Berlin unit is called, as well, via Disaster and Fire Centre (LZBK)
Complex hazards (with emissions of numerous unidentified harmful substances)

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VI. Activities

- Signing international agreements on co-operation and mutual utilisation of material and human resources to control justifies emission hazards in Land Brandenburg.
- Better equipment for ABS-ErkKW detection vehicles with additional sampling sets and detection pipes, Fire Brigade staff sampling procedure training
- Takeover and activation of MBSE vehicles, including GC/MS technologies of LUA Environment Protection Office, via LSTE, activating technology, and purchasing missing extra equipment.
- Setting up additional planning area at LSTE to perform conceptual and operational tasks, using special measurement vehicle
- Making an agreement with Land Berlin to use an Analytical Task Force (ATF) unit in case of complex and iner-regional emission hazard situations.

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Thank you very much for your attention!