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Challenges and Opportunities for China Customs in Applying Security Measures for Cargo Containers Transporting NORM

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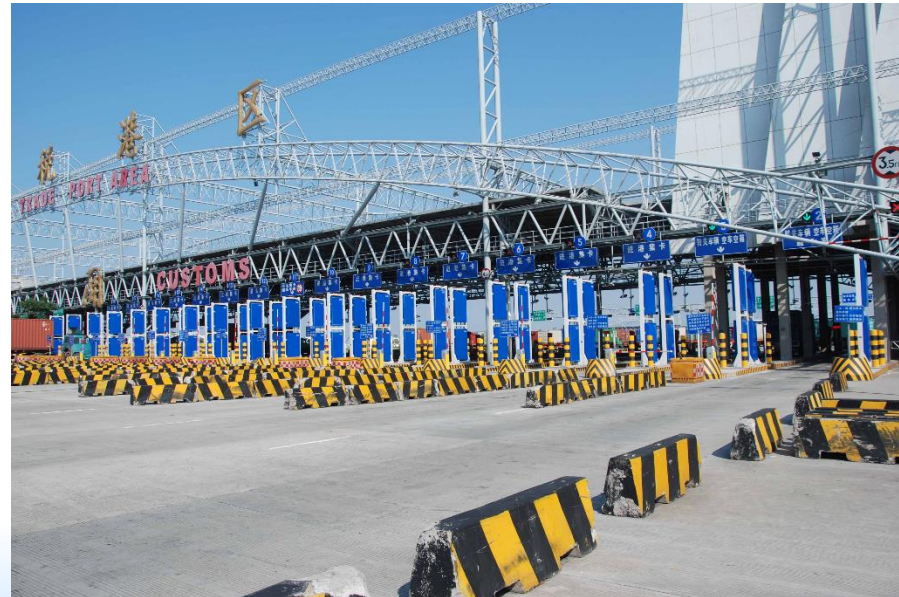
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Coordination Mechanisms

- China Customs has established a coordination and cooperation mechanism with the Ministry of Ecology and Environment (MEE) and China Atomic Energy Authority (CAEA).
- Once China Customs detects any nuclear or other radioactive materials suspicious of smuggling or other illegal activity (including misdeclaration), the above-mentioned professional agencies will take over the cargo and follow-up disposal.

Challenge with Radiation Detection Systems and NORM

- Example: Port of Yantian in Shenzhen handles over 3500 containers/day.
- For a Customs officer at the front line, a key is: *How to exercise customs control over containerized mineral cargo which has triggered an alarm?*



Challenge with NORM for Customs FLO

What should be the alarm threshold and actions limits?

At present, the rules and regulations on customs radiation detection have become more and more developed, and a complete customs radiation detection procedure has been established – but questions still remain.



Alarms when NORM is indicated – why they present issues

Outbound fireworks and fertilizers whose commodity description were falsified in the declaration forms for commercial frauds.

K-40,
Ra-226
Th-232



K-40



Challenge with NORM

- Lack of clear legal basis for China Customs law enforcement, either to release or order the return of such cargo.
- Cooperation mechanism with MEE only gives a reconfirmation of the dose rate caused by radionuclides of natural origin in the containerized cargo.
- If a higher count NORM occurred (it is case by case), for example, the NORM ore and earth products such as zircon sand, the container may be sent back or rejected for shipment.

Challenge with NORM

- Customs mandate is to facilitate trade – but to do so securely and safely.
- When a cargo is rejected or returned, in particular because of NORM issues, Customs gets complaints.
- Given the very large number of containers and the large volume of cargo containing radionuclides of natural origin and NORM ore and earth products, the number of such alarms/issues per day in China is very large.

Initiatives to Address the NORM Challenge



- China Customs encourages the counterpart agencies such as MEE and CAEA to have a useful guidance on NORM ore and earth products for Customs clearance purpose.
- China Customs has undertaken outreach efforts to inform the private and public sector on nuclear detection objectives and policies in order to avoid undue cost and inconvenience to business and to facilitate, rather than impede, the flow of legitimate commerce.

Initiatives to Address the NORM Challenge



- Under IAEA Coordinated Research Project (CRP) J02005 “Improved Assessment of Initial Alarms from Radiation Detection Instruments”, the Customs as one of the participants from China developed and applied the smart phone App and Tool for Radiation Alarm and Commodity Evaluation (TRACE) under the technical assistance of IAEA.

Initiatives to Address the NORM Challenge



- TRACE gives the FLO information critical to make an effective, efficient, and consistent evaluation of radiation alarms.
- TRACE requires an examination of paperwork (so that needs to be correct) and then compares the radiation response of the RPMs and isotope identification equipment to the results that should be “expected” for the cargo. If the results are not as expected, the cargo is flagged for further examination. Subjectivity is removed and Officers work more confidently.

The Path Ahead and Needs



- Customs is active in efforts to deal with containerized cargo containing radionuclides of natural origin and NORM ore and earth products.
- China Customs needs more training for the application of TRACE and encourages continued development and deployment of the tool to address harmonization, consistency, and effective and efficient processing of NORM cargoes.

Conclusion



- China Customs will cooperate with the IAEA, industry, and the global community to continue to address the challenge in applying security measures for cargo containers transporting NORM and as a result, ensure facilitation of safe and secure trade.
- China Customs welcomes the development of guidance on NORM ore and earth products for customs clearance purposes.



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Thank you!