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Human Performance Testing for Cognitive Science-Informed Information Provision for International Nuclear Safeguards Inspectors

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International nuclear safeguards inspectors have access to more potentially-relevant safeguards information than ever before. Traditional safeguards data sources including state declarations, previous inspection results, and inspector observations are complemented with myriad open sources including news media, overhead satellite imagery, trade data, scientific publications, and even social media information. However, cognitive science and anecdotal evidence agree that the mere availability of more information is not necessarily useful and can result in confusion, errors, frustration, or other symptoms of information overload.

The presentation of safeguards information for inspectors working in the field should enable, rather than distract or overwhelm. If successful, the presentation of information for inspectors working in the field should facilitate more timely, accurate, and situationally aware inspection activities. In this paper, we describe human performance studies conducted at Sandia National Laboratories which were informed by research in the domains of cognitive science and international nuclear safeguards. We have targeted initial human performance experiments in three areas: visual inspection, wayfinding, and knowledge transfer for safeguards. We will describe the motivation, methods, and results of our initial human performance experiments, and outline proposed follow-on human performance experiments that will allow us to make broader recommendations for information provision for in-field international nuclear safeguards inspections.

Which "Key Question" does your Abstract address?

TEC2.5

Which alternative "Key Question" does your Abstract address? (if any)

TEC2.3

Topics

TEC2

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