A METHOD OF ASSESSING THE PERFORMANCE OF PORTAL MONITORS TO ESTIMATE THE SYSTEM DETECTION CAPABILITY

(Prepared by J. R. Cox and A. Stoian, Exploranium G.S. Limited, Canada)

Summary

Over the last few years various groups have carried out tests of Portal Monitor systems most notably the SMA (Steel Manufacturers Association) test programs in the USA in 1995 and 1996 and Prague tests (run by the Czech Meterological Institute) in 1996. While various test methods have been used, the main focus of these tests was to compare the performance of various systems as a measure of performance. While this is essential in order to give an independent view of manufacturers claims, it gives no ABSOLUTE information about system performance. Also any performance limitations imposed on an actual installed system may limit system actual performance, but this would be impossible to compute from the published test data.

In 1997 Exploranium participated in a series of tests run by the Industrial Association of Brescia, Italy which attempted to assess system performance in absolute terms.

From our experience at the SMA, Prague and now the Brescia tests, Exploranium has combined the ideas of all these tests and added some new ideas to develop a new testing program that can be used to quantify any system performance.

In our opinion, an ideal test must contain the following elements:

- be easy to carry out in as short a time as practical;
- be carried out in a realistic steel plant environment for credibility;
- use a generally available scrap that permits repeatable results;
- be capable of adjustment for different truck sizes;
- be capable of adjustment for different scrap types;
- be capable of adjustment for variable backgrounds;
- use readily available test sources; and
- **give quantitative measure of detection capability**

A test has been developed and a preliminary testing program carried out. The following describes this test and give some actual test results.

GE.98-33026