

NRC Publications Archive Archives des publications du CNRC

Robot torpedo to inspect water mains Najjaran, H.

This publication could be one of several versions: author's original, accepted manuscript or the publisher's version. / La version de cette publication peut être l'une des suivantes : la version prépublication de l'auteur, la version acceptée du manuscrit ou la version de l'éditeur.

Publisher's version / Version de l'éditeur:

Canada Focus, 13, 9, p. 4, 2005-08-15

NRC Publications Record / Notice d'Archives des publications de CNRC: https://nrc-publications.canada.ca/eng/view/object/?id=5990e9ab-8b15-484e-b61c-1c5f21fbb45f https://publications-cnrc.canada.ca/fra/voir/objet/?id=5990e9ab-8b15-484e-b61c-1c5f21fbb45f

Access and use of this website and the material on it are subject to the Terms and Conditions set forth at https://nrc-publications.canada.ca/eng/copyright

READ THESE TERMS AND CONDITIONS CAREFULLY BEFORE USING THIS WEBSITE.

L'accès à ce site Web et l'utilisation de son contenu sont assujettis aux conditions présentées dans le site https://publications-cnrc.canada.ca/fra/droits

LISEZ CES CONDITIONS ATTENTIVEMENT AVANT D'UTILISER CE SITE WEB.

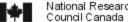
Questions? Contact the NRC Publications Archive team at

PublicationsArchive-ArchivesPublications@nrc-cnrc.gc.ca. If you wish to email the authors directly, please see the first page of the publication for their contact information.

Vous avez des questions? Nous pouvons vous aider. Pour communiquer directement avec un auteur, consultez la première page de la revue dans laquelle son article a été publié afin de trouver ses coordonnées. Si vous n'arrivez pas à les repérer, communiquez avec nous à PublicationsArchive-ArchivesPublications@nrc-cnrc.gc.ca.







NRC · CNRC

Robot torpedo to inspect water mains

Najjaran, H.

NRCC-47075

A version of this document is published in / Une version de ce document se trouve dans : Canada Focus, v. 13, no. 9, August 15, 2005, p. 4

http://irc.nrc-enrc.gc.ca/ircpubs



Robot torpedo to inspect water mains

CanadaFocus, Vol.13 no.9

Spotting potential failure areas in water pipes is difficult without actually unearthing the pipe and carrying out visual inspection. But now researchers in Canada are looking at the possibility of using robots to inspect the condition of large diameter water pipes from the inside.

Researchers at the Canadian Institute for Research in Construction (IRC) are working on a twoyear project with the Institute for Ocean Technology in St John's, Newfoundland, to adapt an autonomous underwater robotic vehicle (AUV) for use in inspecting in-service water mains.

There are approximately 65,000 kilometers of water mains feeding water distribution systems across North America. These pipes are the most sensitive and expensive components of water networks because they have no backup and cannot be taken out of service without cutting the water supply to the entire system. This makes inspection to assess their condition a difficult undertaking. However, with close to 50 per cent of these pipes already older than 60 years, the need for effective, non-disruptive inspection techniques is becoming more and more pressing because their failure could be catastrophic.

To come up with an effective solution, IRC researchers are testing the use of an AUV as a platform to carry cameras and non-destructive testing instruments into in-service pipes. They are also equipping the robot with an on-board data-acquisition system that can store or transmit data from the robot to an operator in real time. Although the torpedo-shaped robots were designed for use in open water, the researchers are modifying them to function in large pipes with flowing water. This will allow them to make an instant assessment of the quality of the pipe and is a major boost to current technology, which only allows the internal inspection of drained pipes.

Dr Homayoun Najjaran, who leads the team, believes the work will put Canadian pipe inspection companies among the world's elite for this type of work and will benefit all water utility companies.

http://irc.nrc-cnrc.gc.ca/research.html