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General

Beaufort Gyre Observing System 2004: Mooring Recovery and Deployment Operations in Pack Ice

J. Kemp, K. Newhall, W. Ostrom, R. Krishfield, and A. Proshutinsky.

Woods Hole Oceanographic Institution, MA. Dept. of Applied Ocean Physics and Engineering. May 2005, 33p, WHOI-2005-05. Product reproduced from digital image. Order this product from NTIS by: phone at 1-800-553-NTIS (U.S. customers); (703)605-6000 (other countries); fax at (703)605-6900; and email at orders@ntis.gov. NTIS is located at 5285 Port Royal Road, Springfield, VA, 22161, USA.

ADA436418WMT Price code: PC A04/MF A01

In this technical report, the authors describe the methods of recovering and re-deploying instrumented deep-ocean bottom-tethered moorings within the Arctic perennial ice pack from icebreakers without diver assistance. Situated beneath the Arctic perennial ice pack, the principal components of the Beaufort Gyre Observing System are three deep ocean, bottom-tethered moorings with CTD and velocity profilers, upward looking sonars for ice draft measurements, and bottom pressure recorders. A major goal of this project is to investigate basin-scale mechanisms regulating freshwater and heat content in the Arctic Ocean, and particularly in the Beaufort Gyre throughout several complete annual cycles. The methods of recovering and re-deploying the 3800-meter long instrumented moorings from the Canadian Coast Guard Icebreaker Louis S. St. Laurent in August 2004 are described. In ice-covered regions, deployments must be conducted anchor-first, so heavier wire rope and hardware must be incorporated into the mooring design. Backup buoyancy at the bottom of the mooring is advised for backup recovery should intermediate lengths of the mooring system get tangled under ice floes during recovery. An accurate acoustic survey

to determine the exact location of the mooring, adequate ice conditions, and skilled ship maneuvering are all essential requirements for a successful mooring recovery. Windlass (or capstan) procedures could be used for the recovery, but a traction winch arrangement is recommended.

DRDC Suffield Soil Laboratory Program. Progress Report - Piston and Onager Sites

J. Barchard, and A. Kupper.

DEFENCE RESEARCH AND DEVELOPMENT SUFFIELD (ALBERTA). Jan 2004, 33p, DRDC-CR-2004-112. The original document contains color images. Product reproduced from digital image. Order this product from NTIS by: phone at 1-800-553-NTIS (U.S. customers); (703)605-6000 (other countries); fax at (703)605-6900; and email at orders@ntis.gov. NTIS is located at 5285 Port Royal Road, Springfield, VA, 22161, USA.

ADA436651WMT Price code: PC A04/MF A01

AMEC Earth AND Environmental Limited (AMEC) was retained by Defence Research AND Development Canada (DRDC) Suffield to carry out laboratory testing on soil samples from prairie soil samples from the Mine Effects Site near Building 148 on the Experimental Proving Ground at DRDC Suffield. AMEC's geotechnical laboratory in Edmonton, Alberta received three large, bag soil samples in late October 2003 for DRDC's Piston, Onager East and Onager West sites. The following laboratory tests were requested by DRDC: 1. Determination of water content of soil samples; 2. Preparation of compacted samples in range of natural water contents; 3. Consolidation tests using ASTM D2435 on two samples; and 4. Triaxial undrained tests (CUP) using ASTM D4767 on three samples. A typical range of natural water contents of 13 to 19 percent was provided to AMEC by DRDC Suffield for similar soil at these sites. For testing, compacted samples were prepared at water contents within the natural water content range, with target water contents of approximately 15 percent. Results are provided according to American Standard Testing Methods (ASTM) standards where applicable. Results for the Triaxial undrained tests (CUP) using ASTM D4767 on three samples are provided in CR 2004-138, DRDC Soil Laboratory Program Triaxial Test Results - Onager Site.

Engineering Careers

Bureau of Reclamation, Denver, CO. 2005, 16p. Product reproduced from digital image. Order this product from NTIS by: phone at 1-800-553-NTIS (U.S. customers); (703)605-6000 (other countries); fax at (703)605-6900; and email at orders@ntis.gov. NTIS is located at 5285 Port



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Prepared by the National Technical Information Service

U.S. Department of Commerce, Technology Administration, Springfield, VA 22161 (703) 605-6000

Royal Road, Springfield, VA, 22161, USA.
PB2005-108762WMT Price code: PC A03/MF A01

This publication discusses engineering careers within the Bureau of Reclamation to meet the needs of the agency in operating existing structures as well as the development of new programs for renewable resources and alternative energy.

Enhancement of Robotics Laboratory at Tennessee State University

M. J. Malkani, and S. Zein-Sabatto.

Tennessee State Univ., Nashville. 28 Jul 2005, 7p. The original document contains color images. Product reproduced from digital image. Order this product from NTIS by: phone at 1-800-553-NTIS (U.S. customers); (703)605-6000 (other countries); fax at (703)605-6900; and email at orders@ntis.gov. NTIS is located at 5285 Port Royal Road, Springfield, VA, 22161, USA.

ADA436386WMT Price code: PC A02/MF A01

Funding from 2002 DoD Infrastructure support program for HBCU/MI under BAA No, DAAD19-02-R-002 provided support for Tennessee State University to purchase five (5) ATR robots with associated laser scanners, navigation and inertial sensors, communications and speech processing tools to enhance the research capabilities of existing robotics laboratory. The impact of this equipment led to completion of 9 undergraduate senior capstone design projects and 3 masters' theses during 2002-2004. In addition undergraduate research group is formed to enrich the electrical and mechanical engineering curriculum and enhance the career opportunities of our students. The addition of new robots has enhanced our research in the area of cooperative mobile robots. The robots are able to communicate with each other and humans through wireless communication, computers and handheld devices.

Implementation Issues of Metallic Dampers for Seismic Retrofit of Highway Bridges

G. Chen, and S. Eads.

Missouri Univ.-Rolla. Center for Infrastructure Engineering Studies. Apr 2005, 110p, UTC/R57. Sponsored by Department of Transportation, Washington, DC. Research and Special Programs Administration. Order this product from NTIS by: phone at 1-800-553-NTIS (U.S. customers); (703)605-6000 (other countries); fax at (703)605-6900; and email at orders@ntis.gov. NTIS is located at 5285 Port Royal Road, Springfield, VA, 22161, USA.

PB2005-108776WMT Price code: PC A07

The objective of this study is to develop an economical solution with metallic dampers for the seismic retrofit of highway bridges in low occurrence seismic zones, such as in the Central and Eastern United States. Select low carbon steel rods were first tested for their ductile behavior and material strength. Large-scale, tapered rods were then tested for their energy dissipation capability and fatigue strength under regular, irregular, and earthquake loads. A full-scale damper made of five tapered rods was designed next for the seismic retrofit of a three-span continuous steel-girder bridge in southeast Missouri; its system performance including joints and connection members was validated with laboratory tests. The damping ratio of tapered rods was shown independent of loading frequency and specimen size; it rapidly increased at small displacements and approached a value of 0.35 approximately 0.40 in the range of over 1.8 inches. Even at a displacement of 2.4 inches, the steel rods can survive over 100 cycles of loading with little

degradation of their damping property. The full-scale, five-rod damper has been demonstrated to reveal a progressive failure mode that is desirable for earthquake applications. Hysteretic models of Type D rocker bearings were developed for possible consideration in the seismic retrofit design of seismically inadequate highway bridges.

Foreign Technology

Journal of the Chinese Institute of Engineers. Volume 28, No. 2, March 2005. Transactions of the Chinese Institute of Engineers, Series A

S. S. Chen, and F. J. Shiou.

Chinese Inst. of Engineers, Taipei (Taiwan). cMar 2005, 202p. See also PB2005-103063. Order this product from NTIS by: phone at 1-800-553-NTIS (U.S. customers); (703)605-6000 (other countries); fax at (703)605-6900; and email at orders@ntis.gov. NTIS is located at 5285 Port Royal Road, Springfield, VA, 22161, USA.

PB2005-107471WMT Price code: PC A11/MF A03

Contents:

- Application of Fuzzy Optimum System Hierarchy Analysis Selection Method for Determining Repair Order of Existing Reinforced Concrete Bridges;
- An Empirical Approach;
- Prediction Method of Air Pressure Distribution on Building Vertical Drainage Stack;
- A Proposed Guideline for Verifying the Attainment of Soil Remediation for Taiwan;
- Slope Stability Analysis using Strength Reduction Technique;
- Determination of Aquifer Parameters using Radial Basis Function Network Approach;
- Transmission of Vibrations from High Speed Trains through Viaducts and Foundations to the Ground;
- A Construction Simulation System (COMSim) with Object-Oriented Modeling Elements;
- Numerical Predictions on the Dynamic Response of a Suspension Bridge with a Trapezoidal Cross-Section;
- On the Non-Iterative Procedure of Direct Displacement-Based Seismic Design for Portal R.C. Bridges;
- Using Inelastic Design Spectrum;
- A Constitutive Model for the Uplift Behavior of Anchors in Cohesion less Soils;
- A Study of Reinforced Concrete Bridge Columns Retrofitted by Steel Jackets;
- Automated Image Mosaic king;
- Life Prediction of Stainless Steels by Cyclic and Stable Hysteresis Curves;
- Fatigue Behavior of Carbon/Epoxy Composites under Pretorsion and Low-Energy Impact Effects;
- Enhancement of Thermal Performance in Sintered Miniature Heat Pipe;
- The Effects of the Processing Variables on the Microstructure and Tensile Properties of Naturally Aged AA6022 Wrought Alloys;
- Developing a Four-Layer System Rutting Model in Highway in Taiwan;
- and Effects of Soil Properties on Surfactant Adsorption.

Selective Notification: Combining Forms of Decoupled Addressing for Internet-Scale Command and Alert Dissemination

J. C. Hill, and J. C. Knight.

Virginia Univ., Charlottesville. Dept. of Computer Science. 2003, 23p. The original document contains color images.

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from NTIS by: phone at 1-800-553-NTIS (U.S. customers); (703)605-6000 (other countries); fax at (703)605-6900; and email at orders@ntis.gov. NTIS is located at 5285 Port Royal Road, Springfield, VA, 22161, USA.

ADA436806WMT Price code: PC A03/MF A01

By using an information survivability control system, the survivability of critical networked information systems can be enhanced using a variety of fault-tolerance mechanisms. Essential to the effective implementation of such mechanisms is communication from the error detection component to the various application nodes in the network. In this paper, we introduce a technique called Selective Notification for the communication of commands and alerts in very large distributed systems. The technique combines intentional addressing, content addressing and sender qualification in a single decoupled event-delivery mechanism. We show that effective targeted command and alert dissemination is achievable, and that Selective Notification allows systems to apply a wide range of event connectivity policies. We present details of an implementation of Selective Notification and the results of performance assessment experiments. Based on our preliminary performance data, we conclude that Selective Notification can be used to support survivability architectures in Internet-sized systems.

Job Environment

Dangers of Entanglement during Lobstering

National Inst. for Occupational Safety and Health, Washington, DC. Aug 2005, 8p, NIOSH-2005-137. Product reproduced from digital image. Order this product from NTIS by: phone at 1-800-553-NTIS (U.S. customers); (703)605-6000 (other countries); fax at (703)605-6900; and email at orders@ntis.gov. NTIS is located at 5285 Port Royal Road, Springfield, VA, 22161, USA.

PB2005-109963WMT Price code: PC A02/MF A01

Lobster fishing is a hazardous occupation that has resulted in drownings from entanglement in trap line and being pulled overboard. A survey of 103 lobstermen developed recommended work practices and controls to (1) reduce entanglement; (2) escape entanglement; and (3) provide opportunities to reboard the vessel.

Derechos y Responsabilidades Del Empleador tras una inspeccion de OSHA. (Employee Rights and Responsibilities following an OSHA Inspection.)

Occupational Safety and Health Administration, Washington, DC. 2003, 20p, OSHA-3195SP-12R. Text in Spanish. For english version, see PB2004-100795. Product reproduced from digital image. Order this product from NTIS by: phone at 1-800-553-NTIS (U.S. customers); (703)605-6000 (other countries); fax at (703)605-6900; and email at orders@ntis.gov. NTIS is located at 5285 Port Royal Road, Springfield, VA, 22161, USA.

PB2005-109972WMT Price code: PC A03/MF A01

This pamphlet contains important information regarding your rights and responsibilities under the Occupational Safety and Health Act of 1970 (OSH Act, Public Law 91-596, as amended by P.L. 101-552, November 5, 1990). An OSHA compliance safety and health officer (CSHO) conducts an inspection of your workplace, in accordance with the OSHA Act. After the inspection, the CSHO reports the findings to the Area Director who evaluates them. If a violation exists, OSHA will issue you a Citation and Notification of Penalty

detailing the exact nature of the violation(s) and any associated penalties (see also OSHA 2098 OSHA Inspections). A citation informs you of the alleged violation, sets a proposed time period within which to correct the violation, and proposes the appropriate dollar penalties.

Exposicion a Patogenos Transmitidos por la Sangre en el Trabajo. (Occupational Exposure to Bloodborne Pathogens.)

Occupational Safety and Health Administration, Washington, DC. 1992, 40p, OSHA-3134-SPA. Text in Spanish. For english version, see PB2002-101343. Product reproduced from digital image. Order this product from NTIS by: phone at 1-800-553-NTIS (U.S. customers); (703)605-6000 (other countries); fax at (703)605-6900; and email at orders@ntis.gov. NTIS is located at 5285 Port Royal Road, Springfield, VA, 22161, USA.

PB2005-108340WMT Price code: PC A04/MF A01

There are approximately 5.6 million workers in health care and other facilities who are at risk of exposure to bloodborne pathogens such as the human immunodeficiency virus (HIV) and the hepatitis B virus (HBV) and other potentially infectious materials. The Occupational Safety and Health Administration recognizes the need for a regulation that prescribes safeguards to protect workers against the health hazards from exposure to blood and certain body fluids containing bloodborne pathogens, and to reduce their risk to this exposure. This booklet will help employers and employees in emergency response settings understand and comply with OSHA's regulation on bloodborne pathogens. The following sections outline and summarize the requirements of the standard and inform emergency responders and law enforcement and corrections employers and employees of the risks of occupational exposure to bloodborne pathogens and how to reduce these risks. Full implementation of the standard not only will prevent hepatitis B cases, but also will significantly reduce the risk of workers contracting acquired immunodeficiency syndrome (AIDS) or other bloodborne diseases.

Fatality Assessment and Control Evaluation (FACE) for Washington State: City Worker Killed When Struck by a Dump Truck in Washington State

Washington State Dept. of Labor & Industries, Olympia. Safety & Health Assessment and Research for Prevention (SHARP) Program. Aug 2004, 18p, FACE-00WA041, SHARP-RPT-52-11-2004. Sponsored by National Inst. for Occupational Safety and Health, Washington, DC. Order this product from NTIS by: phone at 1-800-553-NTIS (U.S. customers); (703)605-6000 (other countries); fax at (703)605-6900; and email at orders@ntis.gov. NTIS is located at 5285 Port Royal Road, Springfield, VA, 22161, USA.

PB2005-109924WMT Price code: PC A03/MF A01

On August 8, 2000, a 43-year-old male public works employee died when he was struck and run over by a dump truck that was backing up along a city street that was under construction. A construction superintendent was also struck and seriously injured in the incident. The city worker was working alongside the construction superintendent at the time of the incident. Both were standing in the street running a chalk line, when a dump truck backed down the street and struck them. Within moments 911 was called and both victims were transported to a local medical center. The city worker died while in transit to the medical center. To prevent similar occurrences in the future, the Washington State Fatality

Assessment and Control Evaluation (FACE) investigative team concluded that employers engaged in roadway construction or maintenance should follow these guidelines: (1) Develop and utilize an 'Internal Traffic Control Plan' for each road construction project; (2) Employers should use visual safety devices (i.e., retro reflective barrels, delineators, portable barricades, cones) to channel construction vehicles to separate them from workers in the work zone; (3) All employees working in road construction work zones should wear high visibility safety apparel such as high visibility vests and hard hats; (4) Construction work zones and construction vehicle/equipment traffic flow should be designed to avoid backing up vehicles/equipment as much as possible; (5) Use a spotter to provide direction for trucks and heavy equipment backing up in work zones; (6) Dump trucks should be equipped with additional visual or sensing devices to cover 'blind spots'; (7) Construction vehicle drivers and key work zone personnel should be equipped with two-way portable radio communication devices to help coordinate construction vehicle activity within the work zone; and (8) Careful consideration should be given to the use of cell phones when working in construction work zones around moving equipment.

**Fatality Assessment and Control Evaluation (FACE)
Program: Hispanic Youth Dies in Densifier at a
Plastics Recycling Plant in Tennessee**

National Inst. for Occupational Safety and Health, Morgantown, WV. Div. of Safety Research. 29 Aug 2005, 18p, FACE-2005-05. Order this product from NTIS by: phone at 1-800-553-NTIS (U.S. customers); (703)605-6000 (other countries); fax at (703)605-6900; and email at orders@ntis.gov. NTIS is located at 5285 Port Royal Road, Springfield, VA, 22161, USA.

PB2005-109964WMT Price code: PC A03/MF A01

On March 9, 2005, a fourteen-year-old male Hispanic laborer (the victim) died from injuries sustained after coming in contact with the blade inside a Densifier. A Densifier is a machine used to shred and grind plastic bags into a recyclable product. During the night shift, while the seven other crew members, all Hispanic, were out of the immediate vicinity of the Densifier, the victim entered the machine. When the coworkers returned to the area, they were unable to locate the victim on the plant floor. A coworker looked into the machine and saw the victim inside. He called 911 and then called the plant manager at his home. Emergency Medical Service (EMS) personnel responded to the scene within 7 minutes. When the plant manager arrived, he turned off and locked out the external power source to the Densifier. EMS personnel, who entered the machine through a side access hatch by removing the fixed bolts, removed the remains of the victim. A coroner in attendance pronounced the victim dead at the scene. NIOSH investigators concluded that, to help prevent similar occurrences, employers should: (1) establish a lockout/tagout program that, at a minimum, meets requirements established by the Occupational Safety and Health Administration (OSHA); (2) ensure that equipment is inspected daily and all defective equipment is removed from service until needed repairs have been made; (3) develop, implement, and enforce a comprehensive written safety and health training program for all workers, including requirements for work in permit-required confined spaces, such as Densifiers; (4) train workers in hazard recognition and safe work practices for all tasks to which they are assigned or allowed to perform, including those pertaining to work requiring lockout/tagout and work in a permit-required confined space. The use of the workers' primary language(s) and careful consideration of literacy levels will maximize

worker comprehension of these subjects; (5) post warning signs in a language(s) that all workers can understand at entrances to each permit-required confined space, such as the top opening and the side hatch of the Densifier, warning of immediate danger and safety requirements for entry; (6) consider retrofitting the Densifier with a barrier or guardrail to prevent workers from entering or falling into the top opening, installing appropriate guardrails around the operator platform, and placing standard railings on access stairways; and (7) establish work policies that comply with employment standards for 14- and 15-year-olds in nonagricultural employment.

Health Hazard Evaluation Report: HETA 98-0096-2737, Exempla St. Joseph Hospital, Denver, Colorado, Revised October 2000

E. H. Page, and E. J. Esswein.

National Inst. for Occupational Safety and Health, Washington, DC. Oct 2000, 38p, HETA-98-0096-2737.

See also PB2000-100206. Product reproduced from digital image. Order this product from NTIS by: phone at 1-800-553-NTIS (U.S. customers); (703)605-6000 (other countries); fax at (703)605-6900; and email at orders@ntis.gov. NTIS is located at 5285 Port Royal Road, Springfield, VA, 22161, USA.

PB2002-108286WMT Price code: PC A04/MF A01

On January 23, 1998, the National Institute for Occupational Safety and Health (NIOSH) received a confidential employee request for a health hazard evaluation (HHE) at Exempla Health Care Facility/St. Joseph's Hospital in Denver, Colorado. The request stated that hospital employees experienced facial flushing, rhinitis, sneezing, itching and watery eyes and fainting while at work. According to the request, the exposure thought to cause the employees' health problems was latex protein from powdered natural rubber latex (NRL) gloves. The NIOSH investigation consisted of concurrent medical and industrial hygiene evaluations during the weeks of July 13-16, 1998, and August 3-6, 1998. Additional medical evaluations were completed November 9-13, 1998. The medical evaluation included a self-administered questionnaire and blood tests for total IgE and latex-specific IgE. The industrial hygiene evaluation consisted of air, surface, and bulk dust sampling to evaluate the presence of latex proteins within the hospital environment.

**Informacion Sobre Riesgos Normas de Cumplimiento.
(Information on the Hazard Communication Standard.)**

Occupational Safety and Health Administration, Washington, DC. 1989, 36p, OSHA-3116-SPA. Text in Spanish. For english version, see PB99-115016. Product reproduced from digital image. Order this product from NTIS by: phone at 1-800-553-NTIS (U.S. customers); (703)605-6000 (other countries); fax at (703)605-6900; and email at orders@ntis.gov. NTIS is located at 5285 Port Royal Road, Springfield, VA, 22161, USA.

PB2005-109175WMT Price code: PC A04/MF A01

Hazardous chemicals present physical or health threats to workers in clinical, industrial, and academic laboratories. They include carcinogens, toxins, irritants, corrosives, sensitizers, hepatotoxins, nephrotoxins, neurotoxins as well as agents that act on the hematopoietic systems or damage the lungs, skin, eyes, or mucous membranes. OSHA currently has rules that limit exposures to approximately 400 substances.

NIOSH Health Hazard Evaluation Report: HETA No. 2003-0351-2972, Freudenberg-NOK, High Quality Plastics Division, Findlay, Ohio, June 2005

National Inst. for Occupational Safety and Health, Washington, DC. Jun 2005, 18p, HETA-2003-0351-2972. Product reproduced from digital image. Order this product from NTIS by: phone at 1-800-553-NTIS (U.S. customers); (703)605-6000 (other countries); fax at (703)605-6900; and email at orders@ntis.gov. NTIS is located at 5285 Port Royal Road, Springfield, VA, 22161, USA.
PB2005-109449WMT Price code: PC A03/MF A01

In August 2003 the National Institute for Occupational Safety and Health (NIOSH) received a confidential HHE request from employees at Freudenberg-NOK G.P., High Quality Plastics Division (HQP) Findlay, Ohio. They were concerned about potential exposure to airborne particles and fumes from the manufacturing of thermoplastic and polytetrafluoroethylene (PTFE) ring seals. Some workers were experiencing non-specific respiratory symptoms and itchy skin.

NIOSH Health Hazard Evaluation Report: HETA No. 2005-0030-2968, Headlee Roofing, Mesa, Arizona, June 2005

National Inst. for Occupational Safety and Health, Washington, DC. Jun 2005, 40p, HETA-2005-0030-2968. Product reproduced from digital image. Order this product from NTIS by: phone at 1-800-553-NTIS (U.S. customers); (703)605-6000 (other countries); fax at (703)605-6900; and email at orders@ntis.gov. NTIS is located at 5285 Port Royal Road, Springfield, VA, 22161, USA.
PB2005-109450WMT Price code: PC A04/MF A01

NIOSH received a request for a health hazard evaluation (HHE) from the Roofers Local 135 Union to evaluate exposures to dust and noise during saw cutting of cement tile by employees of Headlee Roofing, Mesa, Arizona.

Quality Control & Reliability

ACTT Workshop: Wyoming. Held in DuBois, Wyoming on September 21-22, 2005

Federal Highway Administration, Washington, DC. 2005, 90p, FHWA-IF-05-010. Product reproduced from digital image. Order this product from NTIS by: phone at 1-800-553-NTIS (U.S. customers); (703)605-6000 (other countries); fax at (703)605-6900; and email at orders@ntis.gov. NTIS is located at 5285 Port Royal Road, Springfield, VA, 22161, USA.

PB2005-110154WMT Price code: PC A06/MF A01

Accelerated Construction Technology Transfer (ACTT) is a strategic process that uses innovative techniques and technologies to reduce construction time on major highway projects while enhancing safety and improving quality. The process is implemented by conducting 2-day workshops for State departments of transportation (DOTs). The American Association of State Highway Transportation Officials (AASHTO) and the Federal Highway Administration (FHWA) jointly fund ACTT workshops. In September 2004, the Wyoming Department of Transportation (WYDOT) hosted a workshop that brought together transportation professionals from around the Nation. The primary objective of the workshop was to draw on the expertise of participants to help WYDOT achieve its goal of minimizing construction time for its US-287/26, between Moran Junction and Dubois. The \$100 million project is to reconstruct this 37-mile stretch of the highway to upgrade to

a super-two facility with passing lanes. The primary project challenge is to complete the project under traffic while minimizing socioeconomic, environmental, and wildlife impacts.

Informacion Sobre Los Riesgos de Los Productos Quimicos. (Information on the Risks of Chemical Products.)

Occupational Safety and Health Administration, Washington, DC. 1989, 28p, OSHA-3117-SPA. Text in Spanish. For english version, see PB2000-102273. Product reproduced from digital image. Order this product from NTIS by: phone at 1-800-553-NTIS (U.S. customers); (703)605-6000 (other countries); fax at (703)605-6900; and email at orders@ntis.gov. NTIS is located at 5285 Port Royal Road, Springfield, VA, 22161, USA.

PB2005-108339WMT Price code: PC A03/MF A01

Over 30 million American workers are exposed to hazardous chemicals in their workplaces. The Occupational Safety and Health Administration's (OSHA) Hazard Communication Standard (HCS) is intended to ensure that these workers and their employers are informed of the identities of these hazardous chemicals, associated health and safety hazards, and appropriate protective measures. The HCS covers some 650,000 hazardous chemical products found in over three million establishments.

Tooling, Machinery, & Tools

Active Vibration Isolation of an Unbalanced Machine Spindle

D. J. Hopkins, and P. Geraghty. Lawrence Livermore National Lab., CA. 18 Aug 2004, 12p, UCRL-CONF-206108. Sponsored by Department of Energy, Washington, DC. Order this product from NTIS by: phone at 1-800-553-NTIS (U.S. customers); (703)605-6000 (other countries); fax at (703)605-6900; and email at orders@ntis.gov. NTIS is located at 5285 Port Royal Road, Springfield, VA, 22161, USA.

DE2005-15014525WMT Price code: PC A03/MF A01

Proper configurations of controls, sensors, and metrology technologies have enabled precision turning machines to achieve nanometer positioning. However, at this level of positioning resolution, vibration sources can become a limiting factor. One of the largest sources of vibration in a turning machine may be an unbalanced rotating spindle. In this paper, a system is implemented to actively cancel spindle unbalance forces. Specifically, to attenuate the spindle housing vibration using an active vibration control system to prevent the unbalance force from disturbing the rest of the machine systems e.g., the slide servo system or the machine metrology frame. The system controls three degrees of motion. An unbalanced spindle creates a rotating force vector with a once per revolution period. The cause and size of this force is a function of the spindle, the part, the part fixturing, the part setup and the spindle speed. In addition, certain spindle speeds coupled with the size of the unbalance force may contain other harmonics that can excite machine structural resonances. The magnitude of the unbalance force increases as the square of the spindle speed. The control algorithm of this system is fully implemented on a commercially available machine tool controller and is sensitive only to unbalance induced motion. The paper describes in detail the control algorithm and how it is implemented. The system has demonstrated the ability to adapt

in real time to remove the fundamental component of the unbalance force to nanometer levels. However, higher-order structural resonance components of the test bed have been observed when the system is active.

Condition Assessment of Timber Bridges. Part One.

Evaluation of a Micro-Drilling Resistance Tool

B. K. Brashaw, R. J. Vatalaro, J. P. Wacker, and R. J. Ross. Minnesota Univ.-Duluth. Natural Resources Research Inst. Apr 2005, 16p, FPL-GTR-159. Sponsored by Forest Products Lab., Madison, WI. and Federal Highway Administration, Madison, WI. Wisconsin Div. Order this product from NTIS by: phone at 1-800-553-NTIS (U.S. customers); (703)605-6000 (other countries); fax at (703)605-6900; and email at orders@ntis.gov. NTIS is located at 5285 Port Royal Road, Springfield, VA, 22161, USA.

PB2005-109919WMT Price code: PC A03

The research presented in this report was conducted to evaluate the accuracy and reliability of a commercially available micro-drilling resistance device, the IML RESI F300-S (Instrument Mechanic Labor, Inc., Kennesaw, Georgia), in locating deteriorated areas in timber bridge members. The device records drilling resistance as a function of drilling depth, which allows the operator to assess the location of deterioration in the member cross section. Bridge components containing different levels of natural decay were used as test specimens in this study. The IML RESI F300-S was first used to assess decay in the timber bridge specimens. The specimens were then sawn along their length into slabs to expose their interior condition. The interior faces of these slabs were inspected visually and with a stress-wave probe to confirm if deterioration was present. On the basis of these tests, we conclude that this micro-drilling device accurately determines if deterioration is present at the point at which the test is performed.

A Guide to Creating Vernal Ponds

All the Information You Need to Build and Maintain an Ephemeral Wetland

Vernal ponds are a type of seasonal or temporary wetland. They were once common, naturally occurring features on the landscape. For a variety of reasons vernal ponds are not as common as they once were. Many natural vernal pond wetlands have been claimed by society and are now covered by infrastructure such as roads, buildings, and parking lots. Discover how to make a vernal pond that looks and functions like a natural wetland with *A Guide to Creating Vernal Ponds*. The Guide is now available from the National Technical Information Service.

The techniques described in the publication have been used successfully in Kentucky, Ohio, and Minnesota. They draw from basic pond building principles and are coupled with the concepts of vernal pond ecology. The author, Tom Biebighauser began making wetlands in 1982 on the Superior National Forest in Minnesota, and has since moved on to the Daniel Boone National Forest in Kentucky where he has established over 700 seasonal, permanent, emergent and forest wetlands throughout Kentucky and Ohio. The Guide is divided into four chapters that give detailed information on:

- Background about Vernal Ponds
- Planning a Vernal Pond Construction Project
- Constructing a Vernal Pond
- Reference Materials

A Guide to Creating Vernal Ponds is designed to help private landowners, teachers and biologists establish vernal ponds or ephemeral wetlands. They will find out how to establish a wetland that contains water long enough for aquatic plants, hydric-soils and amphibian larvae to develop.

A Guide to Creating Vernal Ponds is available from NTIS, call 1-800-553-6847 or (703) 605-6000, for \$12 plus \$5 handling fee, no additional charge for shipping; quote order number PB2003-106610KST. Most major credit cards accepted. Fax orders to (703) 605-6900. Order online at <http://www.ntis.gov/products/vernalponds.asp>

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HIPAA 101 Video Gives Basics of the Administrative Simplification Provisions for Electronic Transactions

Centers for Medicare and Medicaid Services video now available from NTIS

HIPAA 101 is a video program designed to inform the health care provider community about the administrative simplification provisions of the Health Insurance Portability and Accountability Act of 1996 or HIPAA. In addition to creating consumer protection for health care benefits, HIPAA standardizes financial and administrative health transactions for privacy and security. The *HIPAA 101* video program is available from the National Technical Information Service.

This video will help the health care provider community understand:

- The history of HIPAA and its benefits
- How to tell if you are a 'covered entity'
- The standards that have been adopted for electronic transactions and code sets
- Why the designated standards maintenance organizations may be important to you
- What you need to do to be compliant with the administrative simplification provisions
- How HIPAA's rules and deadlines will be enforced

HIPAA applies to all health care clearinghouses, all health plans, and health care providers that conduct certain transactions in electronic form or who use a billing service to conduct transactions on their behalf.

HIPAA 101 (Health Insurance Portability and Accountability Act of 1996): The Basics of HIPAA Administrative Simplification is available from NTIS, call 1-800-553-6847 or (703) 605-6000, for \$13, no additional charge for shipping or handling; quote order number AVA21211VNB1KSU. Most major credit cards accepted. Fax orders to (703) 605-6900. Order online at <http://www.ntis.gov/products/hipaa.asp>

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NTIS Releases Columbia Accident Investigation Report on CD

News Media, Researchers, Citizens Can Access Scientific & Technical Information at NTIS.GOV

The National Technical Information Service, the federal government's central source for the sales of scientific, technical, engineering, and related business information produced by or for the U.S. government, announces that the first volume of the *Columbia Accident Investigation Board Report* is now available on CD.

This report is the first of 6 volumes being released by the Columbia Accident Investigation Board. This first volume is organized into four parts: the accident, why the accident occurred, a look ahead, and various appendices. To put the accident in context, parts one and two begin with histories, after which the accident is described and then analyzed, leading to findings and recommendations. Part three contains the Board's views on what is needed to improve safety. The report is richly illustrated with full color photographs and diagrams throughout.

Columbia Accident Investigation Board Report Volume 1, August 2003(on CD) is available from NTIS, call 1-800-553-6847 or (703) 605-6000, for \$40 plus \$5 handling fee, no additional charge for shipping; quote order number PB2003-107244KSV. Most major credit cards accepted. Fax orders to (703) 605-6900. Order online at <http://www.ntis.gov/products/columbia.asp>. For your convenience, the NTIS Web site also provides a link to the full text document on the NASA Web site.

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NASA has transferred well over 1,000 scientific, technical, and engineering research reports to the National Technical Information Service this year so far. These reports cover a wide range of subjects including astronomy, astrophysics, biomedical technology, communications, robotics, space technology and exploration. NTIS permanently stores all of these technical reports, and makes them available on a cost-recovery basis – no appropriated or taxpayer funds are involved.

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41

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