"Right-to-know rules" clarify the risky business of managing hazardous chemicals

Employees, employees, and community citizens should now have access to information on safely avoiding hazardous chemical risks. The Hazardous Chemicals Risk Right-to-know Act took effect May 25, 1986, with jurisdiction in the Iowa Bureau of Labor. By that date, employers were to have implemented their written Hazard Communication Program covering the three parts of the law: employee right-to-know, community right-to-know, and emergency response right-to-know.

The law was formed under the urging of the Federal government, according to Barbara Mallon, employee safety officer for the Iowa Department of Transportation. "The Federal government intervened in 1983, because employers were negligent in informing their employees of hazardous chemical risks within the workplace."

However, the lack of information for citizens on chemical hazards has not been entirely the fault of the employer. Mallon said, "We're learning about negative effects of chemicals on our bodies, and the environment, and research is providing new information every day." With this in mind, the federal and state governments decided to take action.

Worker right-to-know

This portion of the law specifies that employees must be made aware of the provisions of the law and receive training about material safety data sheets, container labels, and product hazards. Material safety data sheets contain written or printed information on such details of the hazardous chemical as follows: the identity and its ingredients, the physical and chemical characteristics, its physical and health hazards, the primary route of entry, the permissible exposure limit, any applicable precautions for safe handling and use, control measures, and applicable emergency and first-aid practices.

The written program, which was due May 25, 1986, was required to include a list of the hazardous chemicals employees use and detailed methods the employer will use to inform employees and contractors of the hazards of routine tasks as well as special assignments. Training...

continued on page 4

Underground storage tanks must be reported

Leakage from underground fuel tanks is a serious problem in Iowa. In many cases, thousands of gallons of petroleum products have seeped down to the water table and spread along its surface. More than 80 such incidents have been investigated by the Iowa Department of Water, Air and Waste Management (WAWM) during the past two years.

The leaks usually went undetected until fumes were noticed in nearby basements, wells, or sewer systems. In some cases, the fumes reached explosive levels resulting in the evacuation of homes, businesses, and schools.

According to Pete Hamlin of WAWM, "Contamination has affected the water supplies of eight communities. Four of them have had to stop using certain wells."

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The preparation of this newsletter was financed through the Technology Transfer (T2) Program. The T2 Program is a nationwide effort financed jointly by the Federal Highway Administration and individual State Departments of Transportation. Its purpose is to translate into understandable terms the latest state-of-the-art technologies in the areas of roads, bridges, and public transportation, to local and county highway and transportation personnel.

The T2 Center at Iowa State University is sponsored by the Iowa Department of Transportation and provides information and counsel to the municipalities and counties in Iowa. This newsletter is designed to keep you informed about new publications, techniques, and training opportunities that may be helpful to you and your community. Individuals wishing to receive future copies of this newsletter at no cost may send their requests to: John Moody, Local Transportation Information Center, Engineering Extension, Iowa State University, Ames, Iowa 50011.

The opinions, findings, or recommendations expressed here are those of the Local Transportation Information Center and do not necessarily reflect the views of the Federal Highway Administration or the Iowa Department of Transportation.
Innovative Iowa to host the first major “fast track” concrete project

The drivers of U.S. 71 in Buena Vista County won’t need to detour from their route for long when the road is repaired this summer. If all goes as planned, the revolutionary “fast track” concrete overlay will be placed on U.S. 71 and open to traffic the next day.

Plans for the seven-mile project include a 4-inch bonded Portland cement concrete overlay with a 2-foot, tied, full depth widening on each side of the existing 49-year-old, 20-foot wide concrete paving. It will be constructed one 12-foot lane at a time, with two way local traffic using the adjacent lane and detour lane at all times. Test sections of accelerated set concrete will be expected to attain adequate strength to permit opening to traffic in less than 12 hours.

Iowa has been an early adapter of new and innovative transportation technology. Examples of Iowa’s leadership in technology transfer include development of the first slip form pavement process, use of bonded Portland cement concrete overlays, concrete pavement restoration, and bridge deck overlay.

To demonstrate the new fast track concrete process, two one-day open houses will be held on Friday, July 11, and Monday, July 14, near Storm Lake, Iowa. This open house, which is part of a project that began June 1, will commence September 1. The purpose of this project is to research the development of concrete mixes and specialized equipment.

The open house, sponsored by the Iowa Department of Transportation in cooperation with the Federal Highway Administration, Iowa Concrete Paving Association, American Concrete Pavement Association, Portland Cement Association, and Central Paving Corporation, will begin each day at 8:30 a.m. in the Schaller Chapel on Buena Vista College campus, with a morning program of Iowa’s experience with fast track concrete, and lunch, followed by a project site visitation/demonstration, (participants will be transported to the project site by bus).

The early registration fee (prior to July) will be $30.00, which includes coffee, lunch, and program materials. The price at the door will be $40.00. For project safety, it will be required for all participants to wear hard hats and safety vests at the project site. They can be purchased at the site for $10.

Additional airport, motel, and driving direction information is available from the Iowa Concrete Paving Association, 8325 Douglas, Suite 38, Des Moines, Iowa 50322, or by calling (515) 278-0606.
The tailgate rack is a hoist developed by personnel at the Iowa Department of Transportation to assist with the removal of tailgates from the dump boxes on maintenance trucks. Due to the size and weight of these tailgates, removing and replacing them was, in the past, an awkward, time consuming, and somewhat hazardous operation.

With the tailgate rack, however, the process can now be done quickly and safely. The rack takes the form of an inverted-L, with braces to the sides for support. A pulley mounted on a set of rollers rides across the overhead beam of the structure.

To use the hoist, the truck is backed into position beneath this overhead arm, and the hoist is pulled out to align vertically with the tailgate of the truck. A hook on a chain is lowered and attached to the tailgate. A chain controlling the hoist is then pulled, and the tailgate is lifted into the air. When it reaches a point clear of the truck, the tailgate can be rolled on the pulley back down the arm of the rack and lowered to a storage area on the other end.

For additional information, contact John Moody, Local Transportation Information Center, Haber Road, Iowa State University, Ames, Iowa 50011 or phone 515/294-3424.
Right-to-know continued

must be provided at the time of initial assignment and whenever a new hazardous product is introduced into the workplace.

Community right-to-know

Under this portion, the employer is required to provide information about products used to anyone from the public who requests it. Because the public has a right to be informed about the presence of hazardous chemicals in the community, records such as an inventory of products and their material safety data sheets must be available for inspection during normal working hours. The program went into effect July 1, 1986.

Public safety/emergency response right-to-know

Third, following emergency response right-to-know requirements, employers must notify local fire departments alerting them to the products used and stored at work sites. Each work location will submit to the local fire department a list of hazardous chemicals that are consistently generated by, used by, stored at, or transported from a work facility. In addition, material safety data sheets information must accompany each product on the list.

Local fire department and facility personnel were to have met to collaborate on appropriate response in dealing with an emergency of the listed hazardous chemicals. A fire department contact form has to be completed, signed, and on file with the Iowa DOT Human Resource Bureau by November 1, 1986.

The law also specifies signing requirements and conditions for buildings containing significant amounts of hazardous chemicals.

“It is interesting that the law, in three parts, applies to the rights of workers and also to community citizens,” said Malloy. “City organizations, for instance, are very visible and should be extra cautious to keep their constituents as well as their employees informed of chemical use.”

The Iowa Legislature adopted the Federal government’s provisions in spring of 1984, after they had been introduced the previous autumn. Employers were aware, for more than a year before the deadline date of May 25, 1986, that they would be required to submit a formal, written program of how they would implement this law.

For more information on how to implement or effectively use this law, contact the Iowa Bureau of Labor, 307 East 7th Street, Des Moines, Iowa 50319 or call (515) 281-3606.

To assist groups in giving an overview of the new law, the Local Transportation Information Center has available for loan a 10 minute videotape and manual developed by the Iowa DOT. This videotape is not intended to satisfy training requirements, rather it will give an overview of the law.

A material safety data sheet for unleaded gasoline.

EMERGENCY AND FIRST AID PROCEDURES — Remove contaminated clothing. Wash exposed skin with soap and water. Eyes should be flushed with large amounts of water. If breathed, remove victim to fresh air. If breathing has stopped, give artificial respiration. Keep warm and get medical attention. If material is swallowed, DO NOT induce vomiting. Keep warm and get medical attention.

HAZARDOUS COMPOSITION PRODUCTS — Carbon Monoxide.

HAZARDOUS REACTIVITY — Strong oxidizing agents.

MASS DISPOSAL PROCEDURES — Large spill must be destroyed by incineration. Contaminated material may be deposited in landfill for local, state and federal regulations.

HAZARDOUS WASTE DISPOSAL — RCRA/DISA approved air supplied respirator or self-contained pressure demand breathing apparatus.

PROTECTIVE CLOTHING — Wear impermeable rubber gloves.

VENTILATION REQUIREMENTS — Sufficient mechanical ventilation to maintain exposure below TLV.

OTHER (Drums, Carton, Drum Containers, etc.) —

SECTION 5: SPECIAL PRECAUTIONS AND COMMENTS

HAZARDOUS WASTE DISPOSAL — Should not be used as a cleaning agent. Small quantities must be stored in approved containers. Drain should be properly grounded and bonding applied when transferring between containers. Empty gasoline containers can return product residue and can explode with application of heat.

Note: The Atlantic Richfield Company filed a U.S. BELL notice with EPA on 12/8/81. A P.I. sponsored intrinsic safety study of unleaded gasoline vapors showed adverse health effects to certain laboratory test animals. The significance of this study is relative to human health is currently being evaluated.

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American Public Works Association
Iowa Chapter
Annual Meeting
Okoboji
August 13-15

American Public Works Association
Conference and Equipment Congress
New Orleans
September 20-25

Iowa Traffic Control and Safety
Association
Annual Conference
Ames Starlite Village
September 11-12

American Society of Civil Engineers
Iowa Section Annual Meeting
September 12-13

League of Iowa Municipalities
Des Moines
September 24-26

Schedule of Events
Managerial Tools for Transit
Management Workshop
Indiana University, Bloomington
July 20-25, 1986
Contemporary transit issues and ad-
vanced management techniques.
Program includes a mixture of transit
specific topics, such as road super-
vision, performance indicators, and
motivating operators, and generic
management skills such as time
management, personal productivity,
and stress management.

Rural/Specialized Transit
Management Workshop
Milwaukee, Wisconsin
October 13-17, 1986
Offers general training in personnel
selection and employee motivation,
operations performance evaluation,
management planning, driver train-
ing and public relations.

Advanced Topics for the Rural/
Specialized Transit Manager
Milwaukee, Wisconsin
October 27-31, 1986
Training topics include stress man-
age, vehicle and operations
safety, specific vehicle selection and
maintenance skills, and marketing.

Test your tort liability wisdom
by R.L. Carstens, professor of civil
engineering

Your knowledge concerning tort lia-
bility questions can be assessed by
your answers to the following three
tru e or false questions. Correct an-
swers are given on page 7 of this
issue.

1. The decision to use a traffic
control device must always be on
the basis of an engineering study.
☐ True  ☐ False

2. The Manual on Uniform Traffic
Control Devices (MUTCD) sets forth
minimum standards.
☐ True  ☐ False

3. Ball-bank indicator test runs are
used to determine the maximum safe
speed for a curve.
☐ True  ☐ False

Stan Ring receives excellence in extension award
ISU Technology Transfer Center's
own Dr. Stanley Ring was honored
for his many endeavors, as a recipi-
ent of the first Burlington Northern
Foundation Faculty Achievement
Award for excellence in extension.
The Burlington grant was provided to
Iowa State to recognize significant
and meritorious achievements in
teaching, research, and extension.
The recipients received a certificate
and $1,500 honorarium at the gen-
eral faculty meeting on May 13.

Dr. Ring, program manager for the
Technology Transfer Center, pro-
fessor of civil engineering, and
program leader for Civil Engineering
Extension (CEE), has been a member
of the ISU faculty since 1967. He
received his B.S. in civil engineering
in 1950, his M.S. in 1962, and Ph.D.
in 1973 from ISU. His areas of
specialization are highway planning
and design, transportation engineer-
ing, and Engineering Extension
Service continuing education
courses.

Owen Osborne, director of Engineer-
ing Extension Service praised Dr.
Ring as, "... an exceptional indi-
vidual, truly deserving of recognition
for his significant extension contribu-
tions to Iowa State University, his
profession, and the people of Iowa." Dr. Ring has led Civil Engineering
Extension for the past 12 years, a
period that has shown great growth.
For instance, last year under his
direction, 67 conferences, seminars,
and workshops offered by civil en-
gineering extension attracted more
than 5,000 public works officials.

Dr. Ring has also been recognized
for his achievements by Iowa State
University Extension, American Pub-
lic Works Association, Iowa
Engineering Society, Iowa County
Engineers Association, Iowa Traffic
Control and Safety Association, and
the Society of Land Surveyors in
Iowa.
Know your D.O.T.
This is the second in a series of articles to better acquaint Technology News readers with field representatives from the Department of Transportation's Highway Division. This issue introduces field engineers from Districts 3 and 4 and some highlights of their major projects.

District 3 projects
A seven-mile paving project is planned for U.S. 71 in Buena Vista County from the junction of Iowa 3 to just south of the junction with Iowa 10. This is a research project and is designed for a minimum amount of traffic interference with a detour in effect for through traffic. The road will be paved one half at a time using a newly-designed mix of Portland cement concrete that will allow early use of the new surface for the movement of local traffic.

Also, a Portland cement concrete patching project will occur on I-29 just south of Sioux City. The project will involve the installation of approximately 40 miles of longitudinal subdrains in Woodbury, Monona, and Harrison Counties. Twelve two-lane miles of intermittent asphaltic concrete overlay will supplement a comparable amount of overlay work done in 1985.

Another project involving a ¾-mile segment of U.S. 30 in Dunlap of Harrison County will remove and replace the center 24 feet of surfacing on several blocks leaving the widening portions undisturbed.

District 4 projects
In Pottawattamie County, a Portland cement concrete inlay project, which is eight miles long, commenced in late April. At a cost of $3,583,720, the 11-inch pavement inlay project includes the west-bound lanes of I-80 from the I-680 junction to the Shelby interchange. The existing pavement is to be removed, crushed, and used as granular sub-base material and the shoulders will be surfaced with asphaltic concrete 2½ to 3 inches thick. The median ditch will be partially filled to produce 6:1 forelopes.

The contractor on the project is the Central Paving Corporation of Indianola, Iowa. The Shelby and Minden interchanges will remain operational and activity will be staged to provide for minimum traffic interference. The project should be completed in early October.

Also planned for District 4 is an asphaltic concrete widening and resurfacing project on Iowa 2 extending across Ringgold County for more than 22 miles. The road will be widened two feet on each side and the project includes longitudinal subdrains in selected locations. The shoulders will be surfaced with stabilized, crushed rock. Similar work is intended to extend about 5 miles into Decatur County of District 5.

On Iowa 2 in Fremont County, a reconstruction project costing $3,207,915 was scheduled to begin in early April, but has been delayed because of excessive rain in the area. The project that begins near Fremont County Road No. L-31 extends approximately 1.3 miles easterly to L-29 then continues easterly approximately 0.5 miles through the Burlington Northern Railroad bridge. Included in the project is the replacement of the bridge over the Burlington Northern Railroad. Godperson-Smith is the contractor for this project, that connects on its west end, to a 1.7 mile section constructed in 1985; the latter section terminates approximately 1.3 miles west of the I-29 junction. The 1.7 mile section will be paved by the Fred Carlson Company of Decorah.

There will be one two-lane section added with the east terminus of the resulting four-lane section being just east of the I-29 junction. The road will connect with another four-lane section being paved this year. The total length when completed will be slightly more than three miles. Under Godperson-Smith, contractor, the project should be done in late October.

In Shelby County on U.S. 59, an eight-mile project will begin two miles south of Harlan and end about six miles north of there. The southern two miles of the project will employ a process known as "crack and seat," which involves breaking the existing pavement, leaving it in place, and then rolling it with heavy equipment. The compacted surface will then receive a 4½ inch asphaltic concrete overlay.

The remaining six miles will have normal three-inch asphaltic concrete overlay and longitudinal subdrains will be included in selected locations. Letting for the project was May 13.

The accompanying map illustrates the geographical areas and various offices of each district.

District 3 engineers
Sioux City, 712-276-1451
Jim Bump, P.E., district engineer
Harry W. Nelson, P.E., district maintenance engineer
Thomas E. De Witte, P.E., district construction engineer
Clyde Leonard, P.E., district materials engineer
Richard Storm, P.E., local systems engineer
Rich Michaelis, P.E., district transportation planner

Resident construction engineers
Jerry Arn, P.E.
Denison, 712-263-5628
Richard Bolton, P.E.
Sioux City, 712-239-1367

Resident maintenance engineers
Cecil L. Sutliff, P.E.
Sioux City, 712-239-2113

Jerry Arn, P.E.
Denison, 712-263-5628
Clyde Bartel, P.E.
Storm Lake, 712-732-4514
Patrick H. Waters, P.E.
Rock Rapids, 712-472-2315
Answers to tort liability questions

The three questions on page 5 of this issue are among those most commonly asked of witnesses representing a highway agency by plaintiffs' attorneys in legal proceedings against a public entity growing out of a traffic accident. Their intent is to elicit answers that can be used to impeach subsequent testimony by the same witness or others in order to demonstrate negligence by the highway agency. Correct answers are as follows:

1. True. Most witnesses answer this question correctly. This provision, in Section 1A-4 of the MUTCD, specifies that the selection of traffic control devices must be made by qualified engineers. Engineering studies vary widely in the extent to which they are documented. Although a competent engineering study can be made without written documentation, the evidentiary value in a legal proceeding is much enhanced if a study has been thoroughly documented.

2. False. Most witnesses answer this question incorrectly. The intent of the MUTCD is to spell out provisions covering the application of traffic control devices and set forth standards for their design. Although section 6A-2 states that part VI prescribes minimum standards for the application of devices for work areas, the intent of the MUTCD in general is stated in the Introduction as being responsive to a need for high uniform standards.

3. False. Most witnesses answer this question incorrectly. Ball-bank indicators are used to help establish a recommended speed for a curve. Travel at this speed will be comfortable and will be safe for virtually all surface conditions. Lawyers like to speak of a maximum safe speed, something vastly different. By implication, a vehicle attempting to traverse a curve at a speed 0.1 mph greater than the maximum safe speed will go out of control and run off the road. Obviously, this speed will not be established by test runs. However, the writer uses a rather conservative method of calculating maximum safe speeds. On curves with radii up to 450 feet and dry pavement conditions, this will always be at least 50 percent greater than a recommended speed that was based on a 10-degree ball-bank indicator reading.
Experimental asphaltic concrete overlay

In August, the City of Des Moines will place an experimental asphaltic concrete overlay containing an ice-resistant additive. This European-developed additive is marketed under the name Verglimit®. Verglimit® is a chemical multicomponent deicer that is added to the surface course of an asphalt overlay. The most common addition level is 5 to 6 percent by weight.

Verglimit® is added to the asphaltic concrete at the asphalt plant where it is uniformly distributed through the mix. This allows continued exposure of particles to the atmosphere, and as the finished surface wears under traffic the exposed particles dissolve by attracting and absorbing moisture from the air. This solution on the roadway surface will make it difficult for the snow or ice to stick. After a winter storm, and as the humidity decreases, water in the solution evaporates, leaving the additive in the pore for the next storm.

The 1,500-foot long, 1-inch thick, overlay will be placed on Euclid Avenue from 2nd Avenue to Columbia Street. This street is a 50-foot wide urban section that carries about 19,000 vehicles per day. Approximately 400 tons of hot mix asphalt surface course will be required to complete the overlay. The overlay will contain 6 percent additive by weight, or approximately 23.5 tons of Verglimit®. Special mixing and rolling concerns are required.

The Iowa Highway Research Board has approved this overlay as a research project and will be funding the Verglimit® additive. This project should provide information regarding the effectiveness of ice-retardant additives and operational procedures for placing and maintaining asphalt overlays containing these additives.

“Spill” video for those “First on the Scene”

“First on the Scene,” a new videotape training program for first responders to a hazardous materials incident, is now available from the Chemical Manufacturers Association.

The new training program is a part of the National Chemical Response and Information Center’s lending library of audiovisual programs. “First on the Scene” was prepared to help first responders to survive, to avoid injury, and to obtain assistance.

The videotape program is 31 minutes long and stresses five key points:
• How to approach the scene,
• How to identify the material,
• How to stabilize the incident scene,
• Where to obtain help to handle the problem, and
• Site entry.

The five key points are demonstrated by using two scenarios involving hazardous materials—one involves a tank truck, the other a van trailer carrying a mixed load of packaged materials.

Copies of the training program can be borrowed or purchased from the Chemical Manufacturers Association, 2501 M St., N.W., Washington, D.C. 20037. There are no restrictions on reproducing the videotape. The program is available for $25 in ½-inch format or for $15 in VHS and Beta formats.

Humphrey named highway director

Robert L. Humphrey has been selected as Iowa Department of Transportation Highway Division director and chief engineer, replacing Robert H. Given who retired at the end of December.

Humphrey, who was DOT district engineer for the 12-county central area, has been with the state for 29 years. Prior to being named district engineer in July 1980, he has held DOT positions that included traffic survey engineer, assistant highway planning surveys engineer, urban transportation planner, and director of the Office of Project Planning.