

The housing of the viscous coupling contains high viscosity silicone fluid and specially engineered metal plates splined alternately to an inner and outer drum. When there is a difference in front-to-rear axle speed, such as when the rear wheels slip, the resulting friction between the metal plates increases the temperature inside the unit. This causes the fluid to expand, building pressure that moves the plates together. This occurs almost instantaneously in two modes: the "shear" mode, when momentary speed differences occur such as in cornering or tight turns, causing the plates to move near each other, or the "hump" mode, when high-speed differences occur for a longer period of time, such as in deep snow or on off-road trails, causing the plates to lock and the front and rear drive shafts to turn at the same speed for maximum traction. As traction is gained, the fluid cools, and the plates separate.

When the viscous coupling fails, it may remain in one of the above two modes all the time, regardless of whether there is a difference between front-and-rear axle speed. If the coupling fails in the "hump" mode on dry pavement, it may cause vehicle hopping/bucking during turns, resulting in rapid wear of tires.

NHTSA drove a Jeep Grand Cherokee with a simulated failure of the viscous coupling in the "hump" mode on dry pavement at various speeds. Some hopping/bucking was experienced while the vehicle executed turns. However, no steering or braking problems were experienced at any time.

A review of agency data files, including information reported to the Auto Safety Hotline by consumers, indicated that, aside from the petition, there were no other reports concerning failure or malfunction of the viscous coupling in 1993 Jeep Grand Cherokees. There was a report pertaining to transmission lockup when the engine was started, but this was not related to a failure of the viscous coupling.

Chrysler Corporation has received 40 complaints concerning failure or malfunction of the viscous coupling in the transfer case of 1993 Jeep Grand Cherokees. Five of these complaints report handling problems, such as vehicle hopping during turns. The remaining 35 complaints are solely related to financial assistance issues. No crashes or injuries were reported.

The agency has analyzed available information concerning the problem alleged in the petition. Based on its understanding of viscous couplings, NHTSA believes that the failure or malfunction of the viscous coupling in

the subject vehicles cannot cause lockup of the steering or adversely affect the brake system.

For the reasons presented above, it is unlikely that NHTSA would issue an order for the notification and remedy of a safety-related defect in the subject vehicles at the conclusion of the investigation requested in the petition. Therefore, in view of the need to allocate and prioritize NHTSA's limited resources to best accomplish the agency's safety mission, the petition is denied.

Authority: 49 U.S.C. 30162(d); delegations of authority at CFR 1.50 and 501.8.

Issued on: January 29, 1998.

Kenneth N. Weinstein,
Associate Administrator for Safety Assurance.

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DEPARTMENT OF TRANSPORTATION

Research and Special Programs Administration

[Contract DTRS-56-96-C-0010]

Quarterly Performance Review Meeting on the Contract "Detection of Mechanical Damage in Pipelines"

AGENCY: Research and Special Programs Administration (RSPA), DOT.

ACTION: Notice of meeting.

SUMMARY: RSPA invites the pipeline industry, in-line inspection ("smart pig") vendors, and the general public to the next quarterly performance review meeting of progress on the contract "Detection of Mechanical Damage in Pipelines." The meeting is open to everyone, and no registration is required. This contract is being performed by Battelle Memorial Institute (Battelle), along with the Southwest Research Institute and Iowa State University. The contract is a research and development contract to develop electromagnetic in-line inspection technologies to detect and characterize mechanical damage and stress corrosion cracking. The meeting will cover a review of the overall project plan, the status of the contract tasks, progress made during the past quarter, and projected activity for the next quarter.

DATES: The next quarterly performance review meeting will be held on March 17, 1998, beginning at 1:00 p.m. and ending around 5:00 p.m.

ADDRESSES: The quarterly review meeting will be held at the Embassy Suites Downtown Salt Lake City, 110

West 600 South, Salt Lake City, Utah. The hotel's telephone number is (801) 359-7800.

FOR FURTHER INFORMATION CONTACT: Lloyd W. Ulrich, Contracting Officer's Technical Representative, Office of Pipeline Safety, telephone: (202) 366-4556, FAX: (202) 366-4566, e-mail: lloyd.ulrich@rspa.dot.gov.

SUPPLEMENTARY INFORMATION:

I. Background

RSPA is conducting quarterly meetings on the status of its contract, "Detection of Mechanical Damage in Pipelines" (Contract DTRS-56-96-C-0010), because in-line inspection research is of immediate interest to the pipeline industry and in-line inspection vendors. RSPA will continue this practice throughout the life of the contract, which may be three years. The research contract with Battelle is a cooperative effort between the Gas Research Institute (GRI) and DOT, with GRI providing technical guidance. The meetings allow disclosure of the results to interested parties and provide an opportunity for interested parties to ask Battelle questions concerning the research. Attendance at this meeting is open to all and does not require advance registration or advance notice to RSPA.

We specifically want that segment of the pipeline industry involved with in-line inspection to be aware of the status of this contract. To ensure that a cross section of industry is well represented at these meetings, we have invited the major domestic in-line inspection company (Tuboscope Vetco Pipeline Services) and the following pipeline industry trade associations: American Petroleum Institute, Interstate Natural Gas Association of America, and the American Gas Association. Each has named an engineering/technical representative who, along with the GRI representative providing technical guidance, form the Industry Review Team (IRT) for the contract.

The original objective was to open each quarterly performance review meeting to the public. The first quarterly meeting was conducted on October 22, 1996, in Washington, DC. However, preparing for a formal briefing each quarter takes a considerable amount of time and resources on Battelle's part that could be better used to conduct the research. Therefore, Battelle requested and RSPA concurred that future public meetings would be conducted semiannually. The Salt Lake City meeting is the first of these semiannual meetings. Conducting public meetings semiannually will provide all interested parties with a sufficient update of

progress in the research. Only the IRT and RSPA staff involved with the contract will be invited to the quarterly performance review meetings held between the public semiannual meetings.

Another objective is to conduct each semiannual meeting at the same location and either before or after a meeting of GRI's Nondestructive Evaluation Technical Advisory Group to enable participation by pipeline technical personnel involved with nondestructive evaluation. This meeting is being held in Salt Lake City to dovetail with a meeting of the GRI Nondestructive Technical Advisory Group. Each of the future semiannual meetings will be announced in the **Federal Register** at least two weeks prior to the meeting.

II. The Contract

The Battelle contract is a research and development contract to evaluate and develop in-line inspection technologies for detecting mechanical damage and cracking, such as stress-corrosion cracking (SCC), in natural gas transmission and hazardous liquid pipelines. Third-party mechanical damage is one of the largest causes of pipeline failure, but existing in-line inspection tools cannot always detect or accurately characterize the severity of some types of third-party damage that can threaten pipeline integrity. Although SCC is not very common on pipelines, it usually appears in high stressed pipe, low population density areas under a limited set of environmental conditions. Several attempts have been made to develop an in-line inspection tool for SCC, but there is no commercially successful tool on the market.

Under the contract, Battelle will evaluate and advance magnetic flux leakage (MFL) inspection technology for detecting mechanical damage and two electromagnetic technologies for detecting SCC. The focus is on MFL for mechanical damage because experience shows MFL can characterize some types of mechanical damage and can be successfully used to detect metal-loss corrosion under a wide variety of conditions. The focus for SCC is on electromagnetic technologies that can be used in conjunction with, or as a modification to, MFL tools. The technologies to be evaluated take advantage of the MFL magnetizer either by enhancing signals or by using electrical currents that are generated by the passage of an inspection tool through a pipeline.

The contract includes two major tasks during the base two years of the

contract. Task 1 is to evaluate existing MFL signal generation and analysis methods to establish a baseline from which today's tools can be evaluated and tomorrow's advances measured. Then, it will develop improvements to signal analysis methods and verify them through testing under realistic pipeline conditions. Finally, it will build an experience base and defect sets to generalize the results from individual tools and analysis methods to the full range of practical applications.

Task 2 is to evaluate two inspection technologies for detecting stress corrosion cracks. The focus in Task 2 is on electromagnetic techniques that have been developed in recent years and that could be used on or as a modification to existing MFL tools. Three subtasks will evaluate velocity-induced remote-field techniques, remote-field eddy-current techniques, and external techniques for sizing stress corrosion cracks.

A Task 3 is being considered for an option year to the contract. Task 3, if done, will verify the results from Tasks 1 and 2 by tests under realistic pipeline conditions. Task 3 will (1) extend the mechanical damage detection, signal decoupling, and sizing algorithms developed in the basic program to include the effects of pressure, (2) verify the algorithms under pressurized conditions in GRI's 4,700 foot, 24-inch diameter Pipeline Simulation Facility (PSF) flow loop, and (3) evaluate the use of eddy-current techniques for characterizing cold working within mechanical damage.

A drawback of present pig technology is the lack of a reliable pig performance verification procedure that is generally accepted by the pipeline industry and RSPA. The experience gained by the pipeline industry and RSPA with the use of the PSF flow loop in this project will provide a framework to develop procedures for evaluating pig performance. Defect detection reliability is critical if instrumented pigging is to be used as an in-line inspection tool in pipeline industry risk management programs.

The ultimate benefits of the project could be more efficient and cost-effective operations and maintenance programs to monitor and enhance the safety of gas transmission and hazardous liquid pipelines. Pipeline companies will benefit from having access to inspection technologies for detecting critical mechanical damage and stress-corrosion cracks. Inspection tool vendors will benefit by understanding where improvements are beneficial and needed. These benefits will support RSPA's long-range

objective of ensuring the safety and reliability of the gas transmission and hazardous liquid pipeline infrastructure.

Issued in Washington, D.C., on February 18, 1998.

Richard B. Felder,

Associate Administrator for Pipeline Safety.

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DEPARTMENT OF TRANSPORTATION

Surface Transportation Board

[STB Ex Parte No. 575]

Review of Rail Access and Competition Issues

AGENCY: Surface Transportation Board.

ACTION: Request for comments.

SUMMARY: At the request of Congress, the Surface Transportation Board (Board) is commencing a review of access and competition issues in the rail industry. The Board is requesting comments on these matters. One or more oral hearings will also be held.

DATES: An oral hearing will be held beginning on April 2, 1998. Written notices of intent to participate as parties of record and requests to speak at the oral hearing are due by March 3, 1998. Shortly thereafter, we will issue a preliminary service list and will request written corrections to the list by letter or FAX. We will issue a corrected service list if necessary. Written comments are due by March 26, 1998. By March 27, 1998, a scheduling order for the hearing will be served and published on our web page (www.stb.dot.gov). To facilitate our communication with the parties, we encourage everyone to submit FAX and E-mail addresses in their notices of intent to participate.

ADDRESSES: Send an original and 10 copies of notices of intent to participate and comments, referring to "STB Ex Parte No. 575," to: Surface Transportation Board, Office of the Secretary, Case Control Unit, 1925 K Street, N.W., Washington, D.C. 20423. The comments must be served on the persons identified as "parties of record" on the service list.

FOR FURTHER INFORMATION CONTACT: Joseph H. Dettmar, (202) 565-1600. [TDD for the hearing impaired: (202) 565-1695.]

SUPPLEMENTARY INFORMATION: The Chairman of the Senate Committee on Commerce and the Chairman of the Subcommittee on Surface Transportation and Merchant Marine