Gary Hanson, Chair
Steve Kolbeck, Vice Chair
Dustin Johnson, Commissioner

SOUTH DAKOTA PUBLIC UTILITIES COMMISSION

500 East Capitol Avenue
Pierre, South Dakota 57501-5070
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Capitol Office
(605) 773-3201
1-866-757-6031 fax

Warehouse
(605) 773-5280
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Consumer Hotline
1-800-332-1782

December 3, 2008

Mr. Jeffrey D. Wiese
Associate Administrator of Pipeline Safety
U.S. DOT / PHMSA / PHP-01
1200 New Jersey Avenue, SE East Room E22-330
Washington, DC 20590

Dear Mr. Wiese:

The South Dakota Public Utilities Commission approved a permanent partial waiver of South Dakota Codified Law 49-34B-3 which adopts 49 CFR 192.481 (a) for Montana-Dakota Utilities Company's natural gas operations in South Dakota. This approval is noted in the attached order in South Dakota Docket PS07-001. Please accept this letter as the required notification to PHMSA for its 60 day waiver review process.

The required information for a waiver notice is given below:

1. Name, address and telephone number of applicant.

   ATTN: Scott Besmer
   Montana-Dakota Utilities Company
   400 North 4th Street
   Bismarck, ND 58501
   701-222-7883

2. Safety regulation involved: 49 CFR 192.481 (a)
3. Pipeline facilities involved: All of Montana-Dakota Utilities' South Dakota natural gas operations

4. Justification for the waiver: Please see attached Request for Waiver
5. PUC Order and incorporated Request for Waiver is attached.

If you have any questions, please do not hesitate to contact me.

Sincerely,

Nathan D. Solem

Nathan D. Solem
Acting Pipeline Safety Program Manager
605-773-4210
Nathan.solem@state.sd.us

Cc: Ivan Huntoon, Office of Pipeline Safety Central Region
Scott Besmer, Montana-Dakota Utilities Company

BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF SOUTH DAKOTA

IN THE MATTER OF THE FILING BY MONTANA-DAKOTA UTILITIES CO., A DIVISION OF MDU RESOURCES GROUP, INC. FOR APPROVAL OF A WAIVER	))))	**ORDER APPROVING PARTIAL WAIVER** **PS07-001**

On January 18, 2007, the Public Utilities Commission (Commission) received a filing from Montana-Dakota Utilities Company (MDU) for approval of a waiver of a portion of 49 C.F.R. Part 192.479 and 192.481(a). MDU requests a specific waiver of Part 192.481(a) to allow atmospheric corrosion inspection frequency at least once every four calendar years, but with intervals not to exceed 51 months. Section 192.481 subsection (a) requires inspection of onshore pipe exposed to atmosphere for evidence of corrosion at least once every three calendar years, but with intervals not exceeding 39 months. This waiver would apply to exposed natural gas pipelines according to Part 192.479.

At its regularly scheduled meeting on November 12, 2008, the Commission considered this matter. Commission Staff recommended approving a partial waiver of SDCL 49-34B-3, adopting 49 CFR 192.481(a), regarding the frequency of atmospheric corrosion inspection, conditioned on PHMSA's review and consent. Commission Staff also recommended that the following conditions be imposed: (1) that the four year interval be applied outside of business districts while a one year interval apply inside business districts; (2) that regulator stations and emergency valves be monitored for atmospheric corrosion when maintained or patrolled; and (3) that the operator notify the Commission of hot spots where there are greater corrosion rates requiring monitoring more frequently than once every three years.

The Commission finds that it has jurisdiction over this matter pursuant to SDCL 49-34B. The Commission further finds that the filing is just and reasonable and shall be approved. As the Commission's final decision in this matter, it is therefore

ORDERED, that a partial waiver of SDCL 49-34B-3, adopting 49 CFR 192.481(a), regarding the frequency of atmospheric corrosion inspection, is hereby approved to allow atmospheric corrosion inspection frequency of at least once every four calendar years, but with intervals not to exceed 51 months, conditioned upon PHMSA's review and consent. This waiver is further conditioned upon the following: (1) that the four year interval be applied outside of business districts while a one year interval apply inside business districts; (2) that regulator stations and emergency valves be monitored for atmospheric corrosion when maintained or patrolled; and (3) that the operator notify the Commission of hot spots where there are greater corrosion rates requiring monitoring more frequently than once every three years.

Dated at Pierre, South Dakota, this 25th day of November, 2008.

CERTIFICATE OF SERVICE

The undersigned hereby certifies that this document has been served today upon all parties of record in this docket, as listed on the docket service list, electronically.

By: Delaine Kolbo

Date: 11/26/08

(OFFICIAL SEAL)

BY ORDER OF THE COMMISSION:

GARY HANSON, Chairman

STEVE KOLBECK, Commissioner

DUSTIN M. JOHNSON, Commissioner

MONTANA-DAKOTA
UTILITIES CO.
A Division of MDU Resources Group, Inc.

400 North Fourth Street
Bismarck, ND 58501
(701) 222-7900

January 12, 2007

Mr. Martin Bettman
South Dakota Public Utilities Commission
500 East Capitol Avenue
Pierre, SD 57501

Re: Request for Waiver of a portion of 49 CFR, Part 192.479, 192.4.81(a)

Dear Mr. Bettman:

This letter defines certain existing conditions as they relate to the gas pipeline safety regulations, and requests a specific Waiver of Part 192.481 to allow atmospheric corrosion inspection frequency at least once every 4 calendars years, but with intervals not to exceed 51 months. Section 192.481 subsection (a) requires inspection of onshore pipe exposed to the atmosphere for evidence of atmospheric corrosion at least once every three calendar years not to exceed 39 months. This waiver would allow for the atmospheric corrosion survey to be conducted concurrent with our current 4 year leak survey interval without jeopardizing the integrity of the pipeline or public safety.

This waiver will apply to exposed natural gas pipelines according to Part 192.479 for Montana-Dakota Utilities; operating in North Dakota, South Dakota, Montana, and Wyoming, and Great Plains Natural Gas Co.; operating in Minnesota and North Dakota.

As stated in the attached, Illinois Commerce Commission Order, Docket 05-0113, Corrosion rates in the Midwest are low relative to other areas of the country. Research shows extending the atmospheric corrosion survey requirements to four years does not jeopardize the integrity of the pipeline nor public safety. In 2005 Montana-Dakota's corrosion leaks accounted for less than four percents of all jurisdictional leaks whereas Great Plains' corrosion leaks accounted for less than three percent of all jurisdictional leaks. Historically Montana-Dakota corrosion leak frequency is four percent or less for years 2003 and 2004. Great Plains' historical corrosion leak frequency for years 2003 and 2004 is less than two percent.

To insure pipeline integrity and public safety, Montana-Dakota and Great Plains current leak survey frequency is conducted once every four years exceeding the frequency interval requirement as stated in Part192.723 (2). Accordingly, conducting the atmospheric corrosion survey in conjunction with the leak survey, benefits pipeline integrity and public safety due to increased leak survey frequency and locates potential leaks by conducting visual inspections to identify problem areas before leaks occur. Additionally, by using a leak survey technician, the operator qualification program requirements focus on below ground facilities in addition to visual inspections of above ground facilities.

Thank you for your time and consideration.

Sincerely,

Scott Besmer
Sr. Staff Engineer

C: Doug Lee – General Office
Dave Goodin – General Office
Tamie Aberle – General Office

STATE OF ILLINOIS

ILLINOIS COMMERCE COMMISSION

Central Illinois Public Service Company d/b/a AmerenCIPS, Central Illinois Light Company d/b/a AmerenCILCO and Illinois Power Company d/b/a AmerenIP	:	**05-0113**
Application for a Partial Waiver of 49 CFR Sections 192.481 and 192.723.	:	

ORDER

By the Commission:

On February 24, 2005, Union Electric Company d/b/a AmerenUE,[1] Central Illinois Public Service Company d/b/a AmerenCIPS, Central Illinois Light Company d/b/a AmerenCILCO, and Illinois Power Company d/b/a AmerenIP (collectively "Petitioners") filed with the Illinois Commerce Commission ("Commission") an Application for Waiver ("Application") seeking approval of a partial waiver of Sections 192.481 and 192.723 of Title 49 of the Code of Federal Regulations ("CFR"). Section 192.481 concerns atmospheric corrosion control and monitoring. Subsection (a) provides that each natural gas pipeline operator must inspect each onshore pipeline or portion of pipeline that is exposed to the atmosphere for evidence of atmospheric corrosion at least once every three calendar years, but with intervals not exceeding 39 months. Petitioners propose to extend the frequency of atmospheric corrosion inspections to at least once every four calendar years, but with intervals not exceeding 51 months. Section 192.723 pertains to a leakage survey with leak detector equipment in areas outside of business districts as frequently as necessary, but at least once every five calendar years at intervals not exceeding 63 months. If a partial waiver of Section 192.481 is granted, Petitioners will increase the frequency of leak survey inspections to at least once every four calendar years at intervals not exceeding 51 months.

After considering evidence offered by Petitioners and Commission Staff ("Staff"), on July 13, 2005, the Commission entered an Interim Order granting Petitioners the requested relief subject to the requested concurrence as discussed below. Enforcement of these and other minimum federal safety standards is granted to the Commission under an agreement with the Office of Pipeline Safety within the United States Department of Transportation ("DOT") Pipeline and Hazardous Materials Safety Administration ("PHMSA"), entered into pursuant to Section 60106 of Title 49 of the United States Code ("USC"). The Commission may grant waivers of the safety

[1] On or about May 2, 2005, the AmerenUE Illinois service territory was transferred to AmerenCIPS in accordance with the Commission's Order on Reopening in Docket No. 03-0657. As such, AmerenUE is no longer a party to this docket.

standards in accordance with 49 USC 60118(d). The federal standards codified under 49 CFR Sections 191.23, 192, 193, and 199 have been adopted by the Commission in 83 Ill. Adm. Code 590, "Minimum Safety Standards for Transportation of Gas and for Gas Pipeline Facilities."

In the Interim Order the Commission found that any impact associated with the lessened frequencies of the atmospheric corrosion inspections is outweighed by the benefits associated with the increased distribution leakage surveys. The Commission made other related findings which supported its conclusion that the request for the partial waiver should be granted, subject to the condition that Petitioners continue to train qualified meter readers to report atmospheric corrosion as well as any abnormal operating conditions discovered when reading gas meters.

The Commission directed the Office of the Clerk to forward the Interim Order to DOT, specifically PHMSA, as this agency has enforcement authority with regard to the subject rules. In a letter dated September 19, 2005, DOT notified the Commission that PHMSA objected to the waiver, staying the waiver pursuant to 49 USC 60118(d). The September 19, 2005 letter, however, also informed the Commission that it may appeal the matter by providing any new information from the Petitioners as justification to show granting the partial waiver provided an equivalent level of safety.

Thereafter, a status hearing was convened on October 27, 2005, whereupon a schedule was developed for the submission of additional testimony and evidence by Petitioners in support of the partial waiver. A second evidentiary hearing was held on January 18, 2006. Jerome Themig, Manager of Gas Compliance and Training, Gas Operations Support, Ken Davis, Pipeline Integrity Coordinator, and Scott Black, Gas Engineer, Gas Operations Support, offered additional testimony on behalf of Petitioners. Rex Evans, Program Manager of the Pipeline Safety Program within the Energy Division of the Commission's Public Utilities Bureau, offered additional testimony on behalf of Staff.

Mr. Davis' testimony provided additional justification as to why the waiver should be granted to extend the atmospheric corrosion survey. He explained that the rate of atmospheric corrosion in the Midwest is extremely low and extending the survey beyond three calendar years will not impact the integrity of the above ground facilities. Mr. Davis added that the rate of atmospheric corrosion in the Midwest is low relative to other areas in the country, particularly the coastal areas. He relied upon studies performed by the American Society for Testing Materials in support for his position. He also provided other support for the low Midwest corrosion rate, relying upon information provided by the National Association of Corrosion Engineers. Mr. Davis testified that by utilizing the most aggressive corrosion rates in the Midwest for each study cited, projections can be made to determine the number of years until there is a 70% wall loss, if pipeline steel becomes exposed to atmosphere, which then requires remediation actions per the CFR. Using this information, he concluded the minimum life expectancy of distribution pipe, if left uncoated, is 24 years before replacement is required. Therefore, Petitioners assert, extending the frequency of the atmospheric corrosion study beyond three years will provide sufficient opportunity to ensure that the integrity of the above ground facilities remains in tact.

Mr. Black testified that the atmospheric corrosion survey will benefit from the use of leak survey technicians due to Petitioner's operator qualification programs, quality assurance program, and a focus on the inspection of above ground facilities. In this regard, Mr. Black explained the operator qualification program and the oversight provided for contract leak survey technicians. He stated that a benefit of using leak survey technicians to perform the atmospheric corrosion survey is that they primarily focus not only on the survey of below ground facilities, but also conduct a detailed visual inspection of above ground facilities while performing the survey. The leak survey technicians' training enables them to pay particular attention to the above ground piping at the soil-to-air interfaces, in splash zones, at deck penetrations, under disbonded coatings, and around pipe supports or any other location where atmospheric corrosion may occur.

Mr. Themig testified that if PHMSA has any reservation about the partial waiver of Section 192.481, Petitioners are agreeable to inspect for atmospheric corrosion on a four year interval and in each of the fifth, sixth, seventh, and eighth years, report the results of inspections to PHMSA and Staff, with a comparison to the previous survey. He indicated that this would allow PHMSA to evaluate the effectiveness of the atmospheric corrosion survey and improve the remediation program during the second cycle of the survey. If the results are not favorable to the second cycle, then PHMSA may call into question the waiver to extend atmospheric corrosion inspections beyond the present three year requirement. Mr. Themig noted further that the request to move the atmospheric corrosion inspection to four years does not provide a positive cash benefit to Petitioners. He stated that moving to a four year leak survey will increase operation and maintenance costs. However, the importance of having a more effective atmospheric corrosion survey and remediation program outweighs the increased cost. Finally, Mr. Themig addressed a concern he learned from PHMSA regarding the inspection of facilities that may experience sweating due to pressure drop. He stated that such facilities are normally the large customer metering facilities and pressure control stations of which all are visited at least once annually for calibration or inspection, which includes inspection for atmospheric corrosion. In addition, Mr. Themig stated that Petitioners would continue their practice of atmospheric corrosion monitoring as part of the annual inspections of regulator stations, metering correctors, and above ground emergency drops.

In response to the additional evidence offered by Petitioners, Mr. Evans agreed that atmospheric corrosion surveys can be extended beyond the current three year requirement without jeopardizing the integrity of the pipeline. He also agreed with Mr. Black that the leak survey technician is the best individual to conduct a detailed visual inspection of above ground piping without the distraction of completing other duties, such as meter reading. Mr. Evans was also of the opinion that if PHMSA reviews the previously filed testimony, along with the supplemental testimony provided by Petitioners, it should find the partial waiver consistent with pipeline safety and, in fact, enhances the safety of Petitioners' natural gas distribution pipeline system. With regard to the September 19, 2005 PHMSA letter, specifically the statement therein that operators should maintain their preventive measures to identify potential leaks by conducting visual inspections for atmospheric corrosion and find problem areas before

leaks occur, rather than rely on discovering leaks after they occur, Mr. Evans offered that the statement should not be construed to imply that Petitioners are abandoning their visual inspections. He noted that meter readers will continue to be trained and qualified to recognize and report atmospheric corrosion abnormalities when found.

On February 23, 2006, the Commission entered a Second Interim Order finding that in light of the additional evidence, any negative impact associated with the lessened frequencies of the atmospheric corrosion inspections is outweighed by the benefits associated with increased distribution surveys. The supplemental testimony offered by Petitioners and Staff support the conclusion in the Second Interim Order that extending the atmospheric corrosion inspections from three years to four years will not affect the integrity of Petitioners' natural gas distribution system. The Commission further found convincing the studies and other evidence put forth by Petitioners indicating that corrosion rates in the Midwest are low relative to other areas of the country and given even the most aggressive corrosion rate, a four year inspection period is adequate to ensure detection of any abnormalities in above ground gas pipelines. Additionally, the Commission supported the use of the more qualified leak survey technicians as the appropriate personnel to not only confirm the leak survey but also to provide detailed inspections of above ground facilities for atmospheric corrosion. This is due to the training and qualification testing they receive, the quality assurance inspections administered by Ameren Services Company, and the other monitoring activities performed by Ameren Services Company as detailed in this record.

With regard to Petitioners' offer to inspect for atmospheric corrosion on a four year interval and in each of the fifth, sixth, seventh, and eighth years, as explained by Mr. Themig and supported by Mr. Evans, the Commission concluded in the Second Interim Order that implementing this proposal will provide valuable information on the effectiveness of Petitioners' alternative inspection program. In the event that any unanticipated results are observed, Staff can recommend to the Commission that it reconsider the partial waiver of Section 192.481(a).

As required by 49 USC 60118(d), the Commission directed the Office of the Clerk to forward the Second Interim Order to the PHMSA. PHMSA advised via letter dated October 3, 2006, that after evaluation of the Commission's Second Interim Order, it does not object to the waiver with the following conditions imposed:

1. Outside of business districts, atmospheric corrosion control monitoring must be conducted at least once every four calendar years at intervals not exceeding 51 months.

2. Inside of business districts, atmospheric corrosion control monitoring must be conducted at least once every calendar year at intervals not exceeding 15 months.

3. Operators must identify, inspect, and notify the Commission of those areas requiring atmospheric corrosion control monitoring more frequently than once every three calendar years. These

areas include "hot spots" where there are greater atmospheric corrosion rates.

a. Above ground pipelines where there is greater exposure to road salts and chemicals;

b. Areas where pipelines could have accelerated atmospheric corrosion due to industrial chemicals in the atmosphere;

c. Pipelines that may experience sweating due to pressure drop, such as regulator stations, metering correctors, and large customer's regulator/meter sets;

d. Inside regulator/meter sets that are subject to corrosive environments; and

e. Other areas that show accelerated atmospheric corrosion.

Upon review of PHMSA's October 3, 2006 letter, Petitioners agreed to abide by the conditions as stated therein and enumerated herein. Such agreement was reflected on the record by counsel for Petitioners at a hearing held on October 26, 2006. Staff affirmed its agreement with the aforesaid conditions at that same hearing.

The Commission, having considered the entire record and being fully advised in the premises, is of the opinion and finds that:

(1) Petitioners are engaged in the transmission, distribution, transportation, and sale of natural gas to customers at retail in Illinois, and as such are public utilities within the meaning of the Public Utilities Act, 220 ILCS 5/1-101, et seq.;

(2) the Commission has jurisdiction over Petitioners and the subject matter herein;

(3) the recitals of facts and conclusions reached in the prefatory portion of this Order are supported by the evidence of record and are hereby adopted as findings of facts;

(4) the request for a partial waiver of 49 CFR 192.481(a) should be granted subject to the conditions that (1) Petitioners continue to train and qualify Meter Readers to report atmospheric corrosion as well as any abnormal operating conditions discovered when reading gas meters, (2) Petitioners increase the frequency by which they conduct distribution leakage surveys governed by Section 192.723(b)(2) as described in the prefatory portion of this Order, and (3) Petitioners conduct the inspections and report the results to Staff as described by Mr. Themig in his supplemental testimony and at the hearing;

(5) the request for partial waiver of 49 CFR 192.481(a) should be granted subject to the conditions set forth in PHMSA's October 3, 2006 letter, and enumerated herein;

(6) this partial waiver of 49 CFR 192.481(a) does not lengthen or change any other required leak survey interval; e.g., for business districts or cathodically unprotected service lines;

(7) the partial waiver of 49 CFR 192.481(a) should become effective upon entry of this Order;

(8) the Office of the Clerk should be directed to serve this Order on the Secretary of DOT, the Regional Director of the Central Region of the PHMSA, and the Associate Administrator of the Office of Pipeline Safety within the PHMSA.

IT IS THEREFORE ORDERED by the Illinois Commerce Commission that the partial waiver of 49 CFR 192.481(a) requested by Central Illinois Public Service Company d/b/a AmerenCIPS, Central Illinois Light Company d/b/a AmerenCILCO, and Illinois Power d/b/a AmerenIP is hereby granted; said waiver to be effective upon entry of this Order.

IT IS FURTHER ORDERED that the partial waiver of 49 CFR 192.481(a) is subject to the conditions identified in Findings (4) and (5).

IT IS FURTHER ORDERED that the Office of the Clerk shall serve this Order on those individuals identified in Finding (8).

IT IS FURTHER ORDERED that subject to the provisions of 83 Ill. Adm. Code 200.880, this Order is final; it is not subject to the Administrative Review Law.

By order of the Commission this 29th day of November, 2006.

(SIGNED) CHARLES E. BOX

Chairman

MONTANA-DAKOTA
UTILITIES CO.
A Division of MDU Resources Group, Inc.

400 North Fourth Street
Bismarck, ND 58501
(701) 222-7900

October 9, 2008

Ms. Patricia Van Gerpen
Executive Director
South Dakota Public Utilities
Commission
State Capitol Building
500 East Capitol
Pierre, SD 57501

Re: Request for partial Waiver of
49 CFR, Part 192.479, 192.481(a)
Docket No. PS07-001

Dear Ms. Van Gerpen:

Montana-Dakota Utilities Co. (Montana-Dakota), a Division of MDU Resources Group, Inc., herewith submits additional information in support of its request for a partial Waiver of Part 192.481 to allow atmospheric corrosion inspection frequency at least once every 4 calendars years, but with intervals not to exceed 51 months as submitted on January 12, 2007 in the above referenced Docket.

As noted in the Company's request, Section 192.481 subsection (a) requires inspection of onshore pipe exposed to the atmosphere for evidence of atmospheric corrosion at least once every three calendar years not to exceed 39 months. Montana-Dakota's request for a waiver would allow the atmospheric corrosion survey to be conducted concurrent with the Company's current 4 year leak survey without jeopardizing the integrity of the pipeline or public safety.

Scott Besmer, Senior Staff Engineer, in Montana-Dakota's gas distribution department worked with Martin Bettmann, the Commission's Pipeline Safety Program Manager, in regard to this request for a waiver. Mr. Bettmann provided his recommendation regarding the Company's request to the Commission on October 18, 2007. As noted therein, Mr. Bettmann recommended approval with certain conditions as referenced below. Montana-Dakota does not oppose the addition of the conditions recommended by Mr. Bettmann.

Mr. Bettmann's recommended conditions to approval of Montana-Dakota's request:

Atmospheric corrosion control monitoring will be conducted in conjunction with distribution system leakage surveys:

a. Outside of business districts, atmospheric corrosion control monitoring and leakage surveys must be conducted at least once every four calendar years at intervals not exceeding 51 months.
b. Inside of business districts, atmospheric corrosion control monitoring and leakage surveys must be conducted at least once every calendar year at intervals not exceeding 15 months.

Atmospheric corrosion control monitoring of regulator stations, essential and emergency valves, and other above ground piping that may be monitored pursuant to the 49 CFR, Part 192.721, will be conducted at the same time that those facilities are maintained or patrolled.

In addition, the operator must identify, inspect, and notify SDPUC of those areas requiring atmospheric corrosion control monitoring more frequently than once every three calendar years. These areas include "hot spots" where there are greater atmospheric corrosion rates such as areas subject to road salts and chemicals, industrial chemicals in the atmosphere, inside regulator/meter sets that are subject to corrosive environments; and other areas that show accelerated atmospheric corrosion.

Montana-Dakota does not track atmospheric corrosion survey costs as a separate cost item as field employees perform this task in conjunction with the leak survey test. It is estimated that the incremental cost of performing the atmospheric corrosion survey along with the leak survey test to be approximately $2,200. Montana-Dakota estimates the cost of conducting the atmospheric corrosion survey separately from the leak survey test to be approximately $41,140. The proposal to conduct the atmospheric corrosion survey along with leak surveys will continue to provide efficiencies without compromising pipeline integrity.

This partial waiver will apply to exposed natural gas pipelines according to CFR 49 Part 192.479. Accordingly, in maintaining conformance to CFR 49 Part 192.479(c) which states; "Except portions of pipelines in offshore splash zones or soil to air surfaces, the operator need not protect from atmospheric corrosion any pipeline for which the operator demonstrates by test, investigation, or experience appropriate to the environment of the pipeline that corrosion will – (1) only be a light surface oxide; or (2) not affect the safe operation of the pipeline before the next scheduled inspection." Montana-Dakota reviewed Bridges/ Exposed Mains, District Station Inspections, Isolated Valve Inspections, Miscellaneous Customer/Employee Inspection and FI Leak Survey records from 1998-2006 to identify any instances of atmospheric corrosion.

Those records identify 6 instances of atmospheric corrosion in the state of South Dakota as indicted in the below table:

SD Corrosion

Year	Instances of Corrosion	Total Leaks	Corrosion Instances as % of Leaks
2006	1	218	0.46%
2005	1	229	0.44%
2004	1	214	0.47%
2003	1	157	0.64%
2002	1	456	0.22%
2001	0	245	0.00%
2000	1	276	0.36%
1999	0	203	0.00%
1998	0	174	0.00%

Montana-Dakota's research shows extending the atmospheric corrosion survey requirements by 1 year (from three years to four years) does not jeopardize the integrity of a pipeline nor public safety. As identified in the table above, Montana-Dakota reported 218 jurisdictional leaks in 2006, with corrosion leaks accounting for less than 0.46% of all jurisdictional leaks on Montana-Dakota's natural gas system in South Dakota. Additionally, Montana-Dakota's South Dakota's natural gas system annual corrosion leak frequency is 0.64% or less of all jurisdictional leaks for the years 1998 through 2006 supporting the Company's position that atmospheric corrosion is minimal.

As noted in the response to Staff's Data Request No. 1-2, Montana-Dakota also reviewed information filed by Ameren Services Company in a similar case before the Illinois Commerce Commission regarding studies performed by the American Society for Testing and Material (ASTM) of atmospheric corrosion that typically consist of exposing bare test specimens to a wide variety of conditions at sites scattered across the United States using standard test panels. The study indicates an extremely low atmospheric corrosion rate in the Midwest.

To insure pipeline integrity and public safety, Montana-Dakota's current leak survey frequency is conducted once every four years; exceeding the frequency interval requirement as stated in Part192.723 (2). Accordingly, the benefits to conducting the atmospheric corrosion survey in conjunction with the leak survey include pipeline integrity and public safety as hazardous leaks will be detected sooner. Additionally, the increased leak survey frequency more effectively focuses efforts on leak detection in

conjunction with visual inspections of above ground piping to identify problem areas before hazardous leaks occur to insure a safe natural gas system and public safety. Additionally, by using leak survey technicians, the operator qualification leak detection program requirements focus on below ground facilities in addition to visual inspections of above ground facilities identifying areas of concern before they become hazards.

Therefore, granting this partial waiver that will allow extending the survey interval frequency one year for atmospheric corrosion inspection will not affect the safe operation of the system.

Also attached are the responses provided to Staff's data request submitted to Mr. Martin Bettmann on September 7, 2007. Montana-Dakota's similar requests for a partial waiver have been approved by the North Dakota Public Service Commission and the Montana Public Service Commission with conditions similar to those recommended by the South Dakota Commission Staff. The U.S. Department of Transportation, Pipeline and Hazardous Materials Safety Administration subsequently concurred with the partial waiver requests authorized in Montana and North Dakota.

Montana-Dakota requests that the Commission accept Staff's recommendation to allow the waiver with the conditions noted above.

Sincerely,

Donald R. Ball

Donald R. Ball
Vice President-Regulatory Affairs

Attachments
cc: D. Gerdes

September 7, 2007

Mr. Martin Bettman
South Dakota Public Utilities Commission
500 East Capitol Avenue
Pierre, SD 57501

Re: MDU Docket No. PS07-001 Data Request No. 1

Dear Mr. Bettman:

Attached are responses to SD Public Utilities Commission's questions regarding Montana-Dakota Utilities Co.'s request for a partial atmospheric corrosion waiver. If after review, there are additional questions, please do not hesitate to contact me.

Thank you for your time and consideration.

Sincerely,

Scott Besmer
Sr. Staff Engineer

C: Frank Morehouse – General Office
Doug Lee – General Office
Tamie Aberle – General Office
Jim Mann – Rapid City
Pat Darras - Bismarck

Montana-Dakota Utilities Co.

August 2007

MDU Docket No. PS07-001
Data Request No. 1

1-1. Provide a written report of all atmospheric corrosion discovered by various MDU personnel within SD since January 1, 1998. The report should contain the following information: Date Discovered, Location (to include town and type of facility, i.e. meter set, regulator station, valve, etc.) Discovered By (job title only), Date Repaired, and any appropriate comments.

Date Discovered	Repair Date	Address	Town	Detected By	Facility
4-5-07	4-5-07	908 Leblanc	Rapid City	Serviceperson	Service Riser
9-15-06	5-11-07	Dunlap Ave Bridge	Deadwood	Serviceperson	Main-Bridge Crossing
8-26-05	8-26-05	827 Franklin Street	Rapid City	Serviceperson	Service Riser
8-26-04	9-16-04	311 Custer Lot 120	Belle Fourche	MDU Contractor	Service Riser
12-4-03	12-4-03	200 Charles St. Lot 28	Deadwood	Working Foreman	Service Riser
8-23-02	8-23-02	430 D. Main	Lead	MDU Contractor	Service Riser
2001	None Reported				
6-14-00	6-14-00	421 Summit	Belle Fourche	MDU Contractor	Service Riser
1999	None Reported				
1998	None Reported				

1-2. In paragraph 3 of the waiver request reference is made to "Research" shows that extending the corrosion survey requirements to four years does not jeopardize the integrity of the pipeline nor public safety. Please provide a copy of the referenced research material.

See attached Illinois Commerce Commission, Docket No. 05-0113, Supplemental Direct Testimony of Ken Davis. "The American Society for Testing and Material (ASTM) has performed studies of atmospheric corrosion that typically consist of exposing bare test specimens to a wide variety of conditions at sites scattered across the United States using standard test panels. The weight loss and penetration of the specimens is recorded and used to predict average corrosion rates for various atmospheres. Many of these results indicate an average loss of metal in mils per year (1 mil = .001") and are displayed in tables and graphs that will be referred to later...The results of the referenced ASTM studies indicate that the corrosion rates of industrial and rural atmospheres in the Midwest are low compared to areas near the coasts...All of the cited studies indicate an extremely low atmospheric corrosion rate in the Midwest in which carbon steel typically deteriorated at 3 mils (.003") or less per year...Using the most aggressive atmospheric corrosion rate cited, the minimum life expectancy of distribution pipe, it if were left uncoated, is 24 years...The ASTM studies also demonstrate that with appropriate survey and remediation programs, the atmospheric corrosion survey interval can be safely and reasonably extended beyond 3 years without impacting the integrity of above ground facilities."

1-3. Provide by year for the last five full years the number of atmospheric corrosion leaks compared to all other categories of above ground leaks.

Year	Atmospheric Corrosion	All Other Categories of Above Ground Leaks
2006	0	9
2005	1	2
2004	1	5
2003	1	3
2002	1	5

1-4. Provide a comparison of the number of leak per mile of distribution pipe found during routine annual business district leak surveys compared to non-business district leak surveys by year for the last ten calendar years (1998-2007).

Year	Business District	Non-Business District
2007	Data not complete	
2006	2% of leaks discovered	10% of leaks discovered
2005	Not identifiable in records.	
2004	Not identifiable in records.	
2003	Not identifiable in records.	
2002	Not identifiable in records.	
2001	Not identifiable in records.	
2000	Not identifiable in records.	
1999	Not identifiable in records.	
1998	Not identifiable in records.	

Ameren Exhibit 4.0

ILLINOIS COMMERCE COMMISSION

DOCKET NO. 05-0113

SUPPLEMENTAL DIRECT TESTIMONY

OF

KEN DAVIS

Submitted On Behalf

Of

UNION ELECTRIC COMPANY d/b/a AmerenUE,
CENTRAL ILLINOIS LIGHT COMPANY d/b/a AmerenCILCO,
CENTRAL ILLINOIS PUBLIC SERVICE COMPANY d/b/a AmerenCIPS and
ILLINOIS POWER COMPANY d/b/a AmerenIP

December 7, 2005

ILLINOIS COMMERCE COMMISSION

DOCKET NO. 05-0113

SUPPLEMENTAL DIRECT TESTIMONY

OF

KEN DAVIS

Q. Please state your name, title, and business address.

A. My name is Ken Davis. My title is Pipeline Integrity Coordinator. My business address is 607 E. Adams St. Springfield, IL 62739. I am employed by Ameren Services Company, which provides technical, advisory and financial services to the Ameren Companies, among others.

Q. Please state your education and experience as it relates to corrosion of distribution piping and related matters.

A. I received my Bachelor of Arts in Management from the University of Illinois-Springfield, and my Masters in Business Administration from Millikin University. I belong to the National Association of Corrosion Engineers (NACE), and I am a NACE certified Senior Corrosion Technologist #4433 as well as a NACE certified Cathodic Protection Specialist #4433. I have over 14 years of corrosion related experience and have attended numerous NACE education courses that include Basic Corrosion, Cathodic Protection Data Interpretation, Internal Corrosion, and Cathodic Protection Design I.

Q. What is the purpose of your testimony?

A. My testimony will provide additional support for the waiver sought by the Ameren Companies, and more specifically provide justification as to why the waiver should be granted to extend the atmospheric corrosion survey. I will demonstrate the rate of atmospheric corrosion in the Midwest is extremely low and that extending the survey beyond three calendar years will not impact the integrity of the above ground facilities.

Q. What is atmospheric corrosion?

A. Atmospheric corrosion is defined as the gradual degradation or alteration of a material by contact with substances in the atmosphere, such as oxygen, carbon dioxide, water vapor, and sulfur and chlorine compounds (ASM International, Metals Handbook- Volume 13, (ASM International 1987), p. 2.). Atmospheric corrosion of above grade gas piping is affected primarily by two factors: the atmosphere and the material. The material at above grade gas facilities is primarily carbon steel pipe and is subject to corrosion in most atmospheres if left un-coated. If coated properly, atmospheric corrosion can be readily controlled in most environments. Ameren Services' Gas Policy 09 requires all new above ground gas facilities are coated and that the coatings on existing facilities are maintained.

Q. What types of atmospheric corrosion occur in the Ameren Companies service territories?

A. There are primarily four types of corrosive atmospheres: industrial, marine, rural, and indoor. In the Ameren Companies' service territories, industrial, rural, and indoor atmospheres can be found. An industrial atmosphere is characterized by

pollution in the form of sulfur compounds, various forms of chlorides, and nitrogen oxides that combine with rain, fog, or dew to create a corrosive film on exposed steel (National Association of Corrosion Engineers, Basic Corrosion, (National Association of Corrosion Engineers 1984), p. 222.). A rural atmosphere contains organic and inorganic dusts instead of chemical contaminants which combine with the various forms of moisture to create a corrosive atmosphere that is typically milder than the industrial atmosphere (National Association of Corrosion Engineers, Basic Corrosion, (National Association of Corrosion Engineers 1984), p. 222.). An indoor atmosphere will be found inside a business or home that is frequented by people and has an environment that could be moist but contains no strong or concentrated chemical contaminants.

Q. **What is the rate of atmospheric corrosion on the Ameren Companies' above grade natural gas facilities?**

A. Low relative to other areas of the country, particularly in comparison to the coastal areas. The American Society for Testing and Materials (ASTM) has performed studies of atmospheric corrosion that typically consist of exposing bare test specimens to a wide variety of conditions at sites scattered across the United States using standard test panels. The weight loss and penetration of the specimens is recorded and used to predict average corrosion rates for various atmospheres. Many of these results indicate an average loss of metal in mils per year (1 mil = .001") and are displayed in tables and graphs that will be referred to later.

While the Ameren Companies service territories are largely rural, due to the concentration of factories in certain areas, the following areas in Illinois could be considered to have industrial atmospheres: Decatur, Danville, Peoria, Tuscola, Champaign-Urbana, LaSalle-Peru, Quincy, and St. Louis metro east (Illinois side). Conservatively, the balance of the service territories can be considered rural or semi-industrial. The results of the referenced ASTM studies indicate that the corrosion rates of industrial and rural atmospheres in the Midwest are low compared to areas near the coasts. This can be observed in the following table summarized from the attachment Table 1. (1 mil = .001"):

Location	Environment Type	Corrosion Rate mpy *
Detroit, MI	Industrial	0.57
Morenci, MI	Suburban	0.77
Potter County, PA	Rural	0.8
Columbus, OH	Industrial	1.5
Cleveland, OH	Industrial	1.5
East Chicago, IN	Industrial	3.3
Middletown, OH	Semi-Industrial	1.1
Bethlehem, PA	Industrial	1.5
Cape Kennedy, FL	Marine	5.2 - 42
Point Reyes, CA	Marine	19.7

* mpy = mils per year

Note: The complete table from which the above data was taken is attached as "Table 1" (National Association of Corrosion Engineers, NACE Corrosion Engineer's Reference Book, (National Association of Corrosion Engineers 1991), p. 81.). Ameren Ex. 4.1.

Additional support for this low Midwest corrosion rate is found in the following attachments:

Table 2; the most aggressive metal loss was 7.3 mils (.0073") in 15.5 years in Monroeville, PA, or 0.5 mils (.0005") per year (National Association of Corrosion Engineers, NACE Corrosion Engineer's Reference Book, (National Association of Corrosion Engineers 1991), p. 82,). Ameren Ex 4.2.

Chart 1; the calculated average reduction of thickness is 8 to 10 mils (.008" to .010") in 10 years or 1.6 to 2 mils (.0016" to .002") per year (National Association of Corrosion Engineers, NACE Corrosion Engineer's Reference Book, (National Association of Corrosion Engineers 1991), p. 80,). Ameren Ex. 4.3.

Chart 2; the calculated average reduction in thickness is 8 mils (.008") for 16 years or .5 mils (.0005") per year (National Association of Corrosion Engineers, Basic Corrosion, (National Association of Corrosion Engineers 1984), p. 227). Ameren Ex. 4.4.

All of the cited studies indicate an extremely low atmospheric corrosion rate in the Midwest in which carbon steel typically deteriorates at 3 mils (.003") or less per year. While it can be noted that Midwest corrosion rates vary widely, the most aggressive rate cited in the studies reviewed for bare carbon steel is 3.3 mils (.0033") per year.

Q. **What is the potential impact of this rate of atmospheric corrosion on the Ameren Companies distribution piping facilities?**

A. Utilizing the most aggressive corrosion rates in the Midwest for each study cited, projections can be made to determine the number of years until there is a 70% wall loss, if pipeline steel becomes exposed to the atmosphere, which then

requires remedial action per the Code of Federal Regulations. The distribution piping facilities with the thinnest wall subject to atmospheric corrosion at an Ameren Company are facilities constructed of ¾" diameter piping with a nominal wall thickness of 113 mils (.113"). Wall losses for this piping are projected at the most aggressive corrosion rates cited in the studies above and summarized in the table below:

Three Quarter Inch Diameter Piping Wall Loss Projections

	Midwest Industrial, Most Aggressive Rate * mpy	% of Wall Loss in One Year	Years until 70% of Wall is Lost**
Table 1	3.3 (.0033")	2.92%	24
Table 2	0.49 (.00049")	0.43%	161
Chart 1	0.5 (.0005")	0.44%	158
Chart 2	0.5 (.0005")	0.44%	158

* mpy is mils per year

** Based on the following code, 70% was used as the maximum wall loss. CFR 49 192.487 (a) states "...each segment of generally corroded distribution line pipe with a remaining wall thickness less than that required for the maximum allowable operating pressure of the pipeline, or a remaining wall thickness less than 30% of the nominal wall thickness, must be replaced" (Code of Federal Regulations, Title 49 - Transportation, Part 192.487, 2004.).

Using the most aggressive corrosion rate cited above, the minimum life expectancy of distribution pipe, if it were left uncoated, is 24 years before replacement is required.

Q. What conclusions can you draw from the above studies and information?

A. In the Ameren Companies' service territories, ASTM studies indicate that atmospheric corrosion rates for bare carbon steel are extremely low. Using the most aggressive atmospheric corrosion rate cited, the minimum life expectancy of distribution pipe, if it were left uncoated, is 24 years. The studies referenced indicate that a three-year atmospheric survey, while it may be appropriate for the coastal regions, is extremely conservative for the Midwest. The ASTM studies also demonstrate that with appropriate survey and remediation programs, the atmospheric corrosion survey interval can be safely and reasonably extended beyond 3 years without impacting the integrity of above ground facilities.

Q. Does this conclude your testimony?

A. Yes.

Ameren Exhibit 4.1

CORROSION RATES OF CARBON STEEL CALIBRATING SPECIMENS AT VARIOUS LOCATIONS

TABLE 1

Location	Type of environment	Corrosion rate (a) µm/y	mpy
Norman Wells, NWT, Canada	Polar	0.76	0.03
Phoenix, AZ	Rural arid	4.6	0.18
Esquimalt, Vancouver Island BC, Canada	Rural marine	13	0.5
Detroit, MI	Industrial	14.5	0.57
Fort Amidor Pier, CZ	Marine	14.5	0.57
Morenci, MI	Urban	19.5	0.77
Potter County, PA	Rural	20	0.8
Waterbury, CT	Industrial	22.8	0.89
State College, PA	Rural	23	0.9
Montreal, Que. Canada	Urban	23	0.9
Durham, NH	Rural	28	1.1
Middletown, OH	Semi-industrial	28	1.1
Pittsburgh, PA	Industrial	30	1.2
Columbus, OH	Industrial	33	1.3
Trail, BC, Canada	Industrial	33	1.3
Cleveland, OH	Industrial	38	1.5
Bethlehem, PA	Industrial	38	1.5
London, Battersea, England	Industrial	46	1.8
Monroeville, PA	Semi-industrial	48	1.9
Newark, NJ	Industrial	51	2.0
Manila, Philippine Islands	Tropical marine	51	2.0
Limon Bay, Panama, CZ	Tropical marine	61	2.4
Bayonne, NJ	Industrial	79	3.1
East Chicago, IN	Industrial	84	3.3
Brazos River, TX	Industrial marine	94	3.7
Cape Kennedy, FL (60 ft elev., 60 yd from ocean)	Marine	132	5.2
Kure Beach, NC (800 ft from ocean)	Marine	147	5.8
Cape Kennedy, FL (30 ft elev., 60 yd from ocean)	Marine	165	6.5
Daytona Beach, FL	Marine	295	11.6
Cape Kennedy, FL (ground level, 60 yd from ocean)	Marine	442	17.4
Point Reyes, CA	Marine	500	19.7
Kure Beach, NC (80 ft from ocean)	Marine	533	21.0
Galeta Point Beach, Panama, CZ	Marine	686	27.0
Cape Kennedy, FL (beach)	Marine	1070	42.0

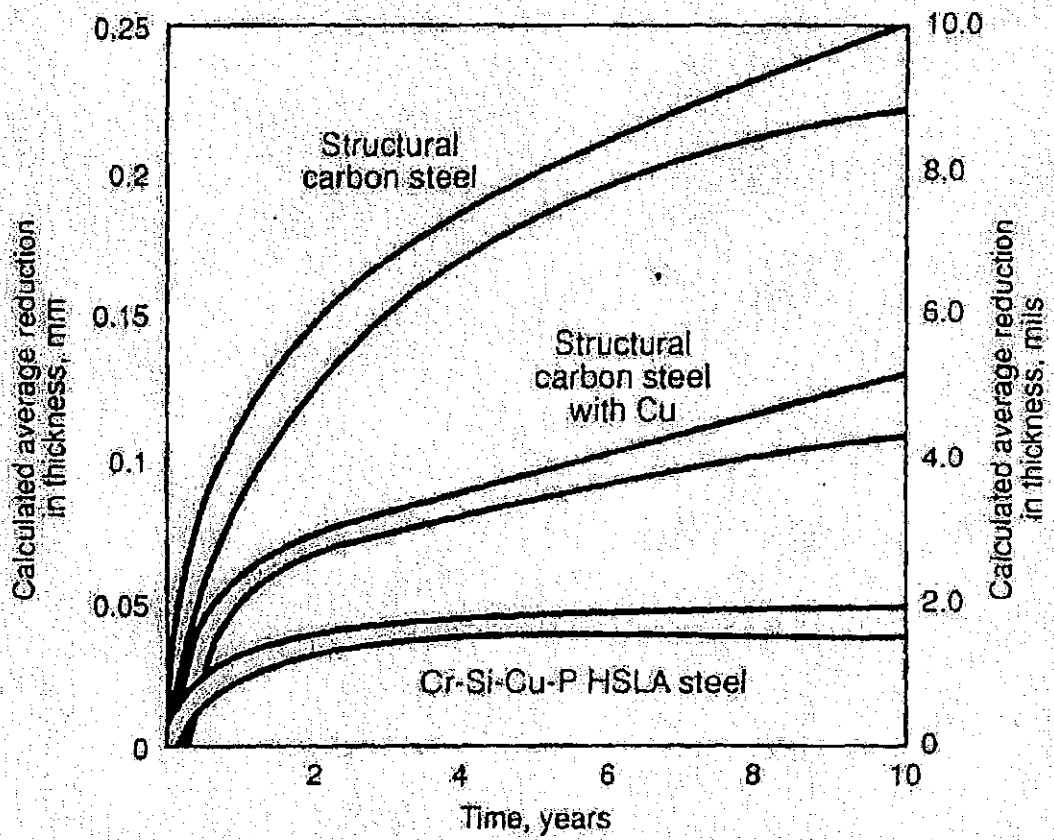
(a) Two-year average.

Ameren Source: NACE Corrosion Engineer's Reference Book, 1991, p. 81

Source: Metals Handbook, 9th ed., Volume 1, p. 720, ASM 1978.

Ameren Exhibit 4.3

ATMOSPHERIC CORROSION OF STEEL vs TIME IN AN INDUSTRIAL ATMOSPHERE



Corrosion of three types of steels in an industrial atmosphere.
Source: Metals Handbook, 9th ed., Volume 13, p. 1304, ASM 1987

Ameren Source: NACE Corrosion Engineer's Reference Book, 1991, p. 80

TABLE 2

CORROSION OF STRUCTURAL STEEL IN VARIOUS ENVIRONMENTS

Type of Atmosphere	Time, Yr.	Average Reduction in Thickness, Mils[a] Structural Carbon Steel	Structural Copper Steel	UNS K11510[b]	UNS K11430[c]	UNS K11630[d]	UNS K11576[e]
Industrial	3.5	3.3	2.6	1.3	1.8	1.4	2.2
(Newark, NJ)	7.5	4.1	3.2	1.5	2.1	1.7	—
	15.5	5.3	4.0	1.8	—	2.1	—
Semi-industrial	1.5	2.2	1.7	1.1	1.4	1.2	1.6
(Monroeville, PA)	3.5	3.7	2.5	1.2	2.1	1.4	2.4
	7.5	5.1	3.2	1.4	2.4	1.7	—
	15.5	7.3	4.7	1.8	—	1.8	—
Semi-industrial	1.5	1.8	1.4	1.0	1.3	1.0	1.5
(South Bend, PA)	3.5	2.9	2.2	1.3	1.9	1.5	2.4
	7.5	4.6	3.2	1.8	2.7	1.9	—
	15.5	7.0	4.8	2.2	—	2.5	—
Rural	2.5	—	1.3	0.8	1.2	—	—
(Potter County, PA)	3.5	2.0	1.7	1.1	1.4	1.2	1.8
	7.5	3.0	2.5	1.3	1.5	1.5	—
	15.5	4.7	3.8	1.4	—	2.0	—
Moderate marine	0.5	0.9	0.8	0.6	0.8	0.7	1.0
(Kure Beach, NC,	1.5	2.3	1.9	1.1	1.7	1.2	1.7
800 ft from ocean)	3.5	4.9	3.3	1.8	2.5	1.9	2.2
	7.5	5.6	4.5	2.5	3.7	2.9	—
Severe marine	0.5	7.2	4.3	2.2	3.8	1.1	0.7
(Kure Beach, NC,	2.0	36.0	19.0	3.3	12.2	—	2.1
80 ft from ocean)	3.5	57.0	38.0	—	28.7	3.9	3.9
	5.0	f	f	19.4	38.8	5.0	—

a) To obtain equivalent values in μm, multiply listed value by 25. b) ASTM A242 (type 1). c) ASTM A588 (grade A). d) ASTM A514 (type B) and A517 (grade B). e) ASTM A514 (type F) and A517 (grade F). f) Specimen corroded completely away.

Source: Metals Handbook, 9th ed., Volume 1, p. 723, ASM 1978.

Ameren Source: NACE Corrosion Engineer's Reference Book, 1991, p. 82