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

SOUTH DAKOTA PUBLIC UTILITIES COMMISSION

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September 3, 2008

Ms. Patricia Van Gerpen
SD Public Utilities Commission
500 E. Capitol
Pierre, SD 57501

Re: PS08-001 – Report Addendum

Dear Ms. Van Gerpen

Enclosed for filing please find an addendum to staff's initial report in the above referenced docket. The parties will be available to have this docket heard by the Commission at its regularly scheduled meeting on September 23rd, 2008. Please contact me with questions.

Thankyou,

Kara Semmler

South Dakota Public Utilities Commission

Memo

To: Chairman Hanson, Vice-Chairman Kolbeck and Commissioner Johnson

From: Nathan Solem

CC: Patricia Van Gerpen, Kara Semmler and Stacy Splittstoesser

Date: September 3, 2008

Re: Addendum to Staff Report in the MDU Pierre Town Border Station Fire Incident in Docket PS08-001

The South Dakota Public Utilities Commission pipeline safety staff reviewed company responses to the staff report filed May 22, 2008. In addition, the pipeline safety staff conducted field investigations unrelated to the incident that yielded additional information pertinent to prevention of recurrence of this incident.

Based on the pipeline safety staff's research, the following four methods are available to prevent reoccurrence. The staff recommends the Commission order one or a combination of such prevention methods and will address each option in more detail below.

1. Scheduled arrival of the second pig to minimize the chance of an incident by having personnel readily available

2. Proper assembly and torquing of all flanges to minimize the risk of another flange gasket failure due to transient pressures from pigging

3. Removal of the ignition source (building heater). MDU agrees to make this change.

4. Better debris handling to prevent any sandblast effect on flange gaskets

SCHEDULED ARRIVAL OF THE PIGGING DEVICE

Based on the SDIP response to Staff's report and its response to discovery requests, only two viable options remain for a scheduled pig arrival:

- Insert another pig to bump the current pig. Risks include the possibility of sticking a third pig and the low gas flow will still not draw in the pigs

- Release gas to draw in the pig. This option may result in the release of as much as 670,000 to 4 million cubic feet of gas per eight hour day with an uncertain estimate of up to eight hours of blowing gas to draw in the pig. The cost of lost gas would be in the range of $9,200 to $55,000. Although the high draw on February 20, 2008 drew in the first pig there is no guarantee that releasing gas will draw in the second pig

SDIP has gone to other means to meet their integrity management commitments under 49 CFR 192 Subpart O so no additional pigs are planned for insertion into this pipeline in the foreseeable future.

PROPER ASSEMBLY AND TORQUING OF ALL FLANGES

If Staff's expert is correct and transient pressure (which is an increase in pressure with time) due to the pigging operation was the cause of the incident, proper flange assembly and torquing would help minimize the risk of failure. Please note the following:

- Inspection of the Pierre Town Border Station revealed a number of flange studs not extending the full way through the nut. This could result in reduced holding force and could contribute to a flange leak. MDU has already agreed to fix these problem stud bolts at other stations inspected this year

- Inspections of the T strainers at the other MDU town border stations on this pipeline revealed that in almost every case at least one stud on the T strainer flange was not extended fully through the nut. By extension, it is plausible that the same condition existed at the Pierre town border station and may have contributed to the T strainer flange gasket failure

- It is a relatively low cost simple procedure to fix all flange studs that do not extend all the way through the nut and retighten all flanges per each company's procedure

IMPROVED DEBRIS HANDLING

Staff expects debris loading ahead of the second pig to be substantially less than ahead of the first pig. The first pig, received on February 20, 2008, was the first pig in the line since the line was dewatered post-installation in the early 1990's. The majority of the accumulated debris since installation is expected to have been ahead of the first pig. Although an improved filter system is a possible prevention method, it is capital intensive and raises the issue of cost versus benefit. It is difficult to predict whether the debris loading risk ahead of the second pig would be reduced to the point where filter collapse and resulting sandblast effects can no longer arguably cause an incident.

STAFF'S REVISED RECOMMENDATIONS

1. Scheduled retrieval of the pig via gas release, although desirable, may have an undesirable cost benefit ratio. Staff does not recommend the Commission order this prevention method.

2. Proper assembly and torquing of all flanges should be ordered as it is a cost effective way to minimize risk. Accordingly, Staff recommends both MDU and SDIP be ordered to fix any flange stud bolts not extending all the way through the nut and to retighten all flanges at their respective Pierre stations.

3. Removal of the ignition source of the incident, as agreed by MDU, is recommended as part of the Commission's order to MDU.

4. Improved debris handling through an improved filter system may also have an undesirable cost benefit ratio and is not recommended by the pipeline safety staff.