55

Pennsylvania Technical Advisory Committee
On Diesel Powered Equipment

Paul Borchick
(412) 736-9105 (Cell)
(724) 485-4414 (Office)
Email: paulborchick@consolenergy.com

Ron Bowersox
(724) 726-8987 (Home)
(724) 479-8692 (Office)
Email: umwarbowersox@yahoo.com

April 1, 2009

Joseph Sbaffoni, Director
Bureau of Mine Safety
Fayette County Health Center
100 New Salem Road, Room 167
Uniontown, Pa. 15401

RE: **Final TAC Recommendation** for the Bailey Mine "1 Man Diesel Fuel Transfer System" to transfer diesel fuel from the surface storage tank to the underground diesel fuel storage tank.

Dear Mr. Sbaffoni:

Article II-A of the Pennsylvania Bituminous Coal Mine Act (the act) provides for the use of diesel-powered equipment in underground bituminous coal mines. Section 224-A of the act created a Technical Advisory Committee ("TAC") for the purpose of advising the Department regarding implementation of Article II-A and evaluation of alternative technology or methods for meeting the requirements of Article II-A. Sections 205-A and 206-A provide the regulations for transfer of diesel fuel.

Background

On June 30, 2008, Bailey Mine submitted a request to the Bureau of Mine Safety requesting the TAC to visit and evaluate the proposed "1 Man Diesel Fuel Transfer System" that Bailey Mine would like to use for transferring diesel fuel from the 10,000 gallon surface storage tank to the 467 gallon underground storage tank. Bailey Mine currently uses an approved "2 Man Diesel Fuel Transfer System". Bailey believes that the proposed 1 man system, with its redundant safety features, provides at least the same level of safety as the present approved 2 man system.

On July 22, 2008 the Director requested the TAC to review the above system and advise the Department whether it meets the requirements as established in Article II-A of the Act. Additionally, the TAC should also evaluate whether the proposed plan ensures that the protection of miners is paramount and the alternate method is as safe as required by law.

On July 24, 2008 the TAC members and representatives from the Bureau of Mine Safety traveled to the Bailey Mine to evaluate Bailey's proposed "1 Man Diesel Fuel Transfer System".

On October 7, 2008 the TAC made a recommendation for temporary approval to the Director. This TAC recommendation was as follows:

The TAC recommends that the "1 Man Diesel Fuel Transfer System" for the Bailey Mine be tentatively approved for a limited 30 day trial period with all the provisions as described above and in the attachment. During the trial period the TAC and/or DEP may wish to be present during the operation to review the system operation. After the trial period the TAC and DEP should be notified of any changes or adjustments made to the equipment and procedures before consideration is given to the final recommendation.

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Investigation

On January 13, 2009 the TAC and DEP traveled to Bailey Mine to observe the "1 Man Diesel Fuel Transfer System" in operation during the 30 day trial period. The record of faults and problems encountered were reviewed with Bailey Mine personnel (Attachment 1). There were no diesel fuel storage tank overfill faults detected during the test period. Necessary adjustments were made to the calibration of the timers and level indicators during the 30 day test period.

On March 9, 2009 the TAC members visited the Bailey Mine for a final look at the system. The issue of using the system to fill cans on the surface was addressed by posting the procedure for filling cans at the surface facility and by requiring that all persons using the system to fill cans on the surface are trained in the operation of the system. Handles on surface valves not needed unless the manual mode was used were removed to avoid any confusion. The final system diagram was updated and submitted to DEP for their approval.

Recommendation

This recommendation applies specifically to the proposed Bailey Mine "1 Man Diesel Fuel Transfer System".

The TAC has reviewed the proposed "1 Man Diesel Fuel Transfer System" for the Bailey Mine. Based on the TAC's observations during the visit to the mine, information received from mine personnel, and review of the proposed operating procedures identified in the October 7, 2008 TAC recommendation for temporary approval letter, the TAC believes that the Bailey Mine proposed "1 Man Diesel Fuel Transfer System" meets the requirements of Article II-A Sections 205-A and 206-A of the Act.

The system also meets the requirements of the new Bituminous Coal Mine Safety Act, Chapter 4, Sections 405 and 406 which took effect during the TAC review process.

Additionally, the TAC believes that this 1 man system and operating procedures maintain at least the same level of safety as provided by the currently approved 2 man system.

The TAC **recommends final approval** for this site specific "1 Man Diesel Fuel Transfer System" and operating procedures for the Bailey Mine.

Paul Borchick

Paul Borchick

Ron Bowersox

Ron Bowersox

From:
Danny Elson
Bailey Mine
Electrical Foreman

To:
PA Diesel TAC Committee
PA DEP and approvals

This letter is in reference to the Bailey One Man Diesel drop system.

Since the day we started our 30 day trial the following is the faults we have seen and the amount of time the system was used in auto mode.

As of today 2/11/2009 we have used the system in auto mode 64 times so far with out any problems.

On the surface metering tank;
We have had 10 e-stop faults with 4 of them being the weekly checks. The other 6, I believe was just from were from personnel curiosity.

We had 18 high level faults 14 of these were due to manual filling, 4 were due to a calibration fault. Which we found that the 3 " line feeding metering tank held enough diesel to raise our tank level 7% after pump shut off , this we corrected with a lowering of the shut off to 64% of the tank.
We had no over fill faults at all.
We had 3 disconnect faults these were due to servicing the system.

Underground tank:

We have had zero faults here all level sensors have not been hit. But the low level sensor which is set to 25% has always worked properly.

Bottom line is that when the system is used as built it works very well without any problems and no over fills is possible in the auto mode.

Thank You
Danny Elson

ATTACHMENT 1

Pennsylvania Technical Advisory Committee
On Diesel Powered Equipment

Paul Borchick
(412) 736-9105 (Cell)
(724) 485-4414 (Office)
Email: paulborchick@consolenergy.com

Ron Bowersox
(724) 726-8987 (Home)
(724) 479-8692 (Office)
Email: umwarbowersox@yahoo.com

October 7, 2008

Joseph Sbaffoni, Director
Bureau of Mine Safety
Fayette County Health Center
100 New Salem Road, Room 167
Uniontown, Pa. 15401

RE: Bailey Mine request to evaluate a "1 Man Diesel Fuel Transfer System" to transfer diesel fuel from the surface storage tank to the underground diesel fuel storage tank.

Dear Mr. Sbaffoni:

Article II-A of the Pennsylvania Bituminous Coal Mine Act (the act) provides for the use of diesel-powered equipment in underground bituminous coal mines. Section 224-A of the act created a Technical Advisory Committee ("TAC") for the purpose of advising the Department regarding implementation of Article II-A and evaluation of alternative technology or methods for meeting the requirements of Article II-A. Sections 205-A and 206-A provide the regulations for transfer of diesel fuel.

Background

On June 30, 2008, Bailey Mine submitted a request to the Bureau of Mine Safety requesting the TAC to visit and evaluate the proposed "1 Man Diesel Fuel Transfer System" that Bailey Mine would like to use for transferring diesel fuel from the 10,000 gallon surface storage tank to the 467 gallon underground storage tank. Bailey Mine currently uses an approved "2 Man Diesel Fuel Transfer System". Bailey believes that the proposed 1 man system, with its redundant safety features, provides at least the same level of safety as the present approved 2 man system.

On July 22, 2008 the Director requested the TAC to review the above system and advise the Department whether it meets the requirements as established in Article II-A of the Act. Additionally, the TAC should also evaluate whether the proposed plan ensures that the protection of miners is paramount and the alternate method is as safe as required by law.

cc: JAS Antoon
WBB
ALM
McCaffrey

orig. TAC file

Investigation

On July 24, 2008 the TAC members and representatives from the Bureau of Mine Safety traveled to the Bailey Mine to evaluate Bailey's proposed "1 Man Diesel Fuel Transfer System". The investigation included visiting the storage tank facilities both on the surface and underground. Mine personnel demonstrated the procedures for the currently used "2 Man Diesel Fuel Transfer System" and also the proposed "1 Man Diesel Fuel Transfer System". Some of the proposed changes, new hardware and software were already installed, but not in service. This helped in the explanation of the proposed system.

There were several questions regarding electrical equipment, components and wiring methods raised by the Department investigators. The TAC feels that the TAC is not qualified to make any determinations on the electrical system, and this should be left to the Department for evaluation. The TAC will only evaluate the proposed system based on whether it complies with Article II-A Sections 205-A and 206-A of the Act, and whether the technology provides at least the same level of protection to the miners as the currently approved system.

There are several new safety features included in the proposed system:

- The installation of level indicators in both the metering tank on the surface and the storage tank underground limit the capacity of these tanks when in automatic mode to a level less than what is available with the current system.
- The underground storage tank fill valve will stay in the closed position at all times except when fuel transfer is being done by the person operating the "1 Man Diesel Fuel Transfer System". This valve can continue to be the main cutoff for fuel being dumped into the underground storage tank, giving the operator total control on transferring fuel into the underground tank.
- There are 3 level switches installed in the system to prevent overflow. These systems back up each other to provide added protection over the present system.
- The overflow of the 250 gallon surface metering tank will be piped back into the 10,000 gallon surface storage tank to prevent any chance of spilling on the surface. This is not part of the present system.
- There will be a timer in the system that limits the run time of the fill pump so that it shuts off after enough time has elapsed to fill the measuring tank. This time will be determined during the "30 day trial period".
- The position of the motorized valve that controls the fuel dump from the metering tank to the underground storage tank can be shown on the computer screen to show if it is open or closed.
- The battery in the motorized valve will be changed out on a schedule based on the manufacturer's recommendations to ensure that it will be operational.
- The proposed system will only operate if the level of the underground storage tank is low enough to accept all the fuel in the metering tank and completely empty the borehole piping to maintain a dry line system.
- The proposed fuel transfer system will only operate if it is initiated by the operator at the underground storage tank, unlike the current system where a person on the surface could fill the metering tank and dump fuel into the borehole piping.
- The system will have a timer to limit the frequency of operating the fill pump to protect against inadvertently attempting to fill the underground tank. This frequency will be determined during the "30 day trial period".

- The proposed system would be inspected weekly and the results recorded in a book to be kept at the mine.
- The operating procedures for fueling the underground tank will be posted at the controls underground. (see Attachment)
- All operators required to transfer fuel to the underground storage tank using the proposed system will be trained in the operation and procedures. The record of this training will be kept at the Mine.
- All system alarms will only be reset from the HMI screen at the storage tank on the surface.
- The proposed system would have a "30 day trial period" from the date of approval by the Director. This would allow for necessary close monitoring by qualified mine personnel and the ability to make any adjustments needed to the process for optimal performance and safety. After this time the TAC and the Department would be notified of any changes made to the system before a final recommendation is made.
- The current approved "2 Man Diesel Fuel Transfer System" would continue to be used until final approval for the "1 Man System" is granted by the Director.

Recommendation

This recommendation applies specifically to the proposed Bailey Mine "1 Man Diesel Fuel Transfer System".

The TAC has reviewed the proposed "1 Man Diesel Fuel Transfer System" for the Bailey Mine. Based on the TAC's observations during the visit to the mine, information received from mine personnel, and review of the proposed operating procedures (Attachment), the TAC believes that the Bailey Mine proposed "1 Man Diesel Fuel Transfer System" meets the requirements of Article II-A Sections 205-A and 206-A of the Act. Additionally, the TAC believes that this 1 man system and operating procedures maintain at least the same level of safety as provided by the currently approved 2 man system.

The TAC recommends that the "1 Man Diesel Fuel Transfer System" for the Bailey Mine be tentatively approved for a limited 30 day trial period with all the provisions as described above and in the attachment. During the trial period the TAC and/or DEP may wish to be present during the operation to review the system operation. After the trial period the TAC and DEP should be notified of any changes or adjustments made to the equipment and procedures before consideration is given to the final recommendation.

Paul Borchick

Ron Bowersox

Bailey Mine
One Person Diesel Fueling Station

Procedures for fueling the underground tank

1. If the UG diesel pump control panel – Tank Needs Fuel Light is on, then a fueling cycle can be performed.
2. Underground operator opens the mine borehole to tank manual valve.
3. Press the Start push button to begin the fueling cycle. The following points are what occur during a fueling cycle.

- The 10,000 gallon pump will start and fill the outside meter tank.
- Once the meter tank is filled, the pump will shut off.
- The motor operated valve will open to release the fuel to underground tank.
- During this fueling cycle the Tank Needs Fuel light will blink fast to confirm normal fueling operation.
- If during the fueling cycle the Tank Needs Fuel light blinks slow 2 second on/off intervals there is an alarm which shall cause the system to stop. Go to the procedure for recovering from an alarm section below.
- Once the fueling cycle is finished the Tank Needs Fuel light will turn off.
- Then, close the mine borehole to tank manual valve.

Procedures for recovering from an alarm

1. Call the Bunker Operator to ask him to bring up the Diesel Fueling Station Overview screen for the alarm.
2. If an alarm is active, correct the problem.
3. All alarms must be reset from the HMI screen (touch screen in diesel control panel) outside beside the 10,000 gallon tank.

ATTACHMENT