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**PLAINTIFF'S
EXHIBIT**

TPI-130

December 30, 1991

Tyler Pipe
P.O. Box 2027
Tyler, TX 75710

Attention: Mr. Charles Kuenemann

Re: Environmental Engineering Review

Gentlemen:

On November 12, 13 and 14, 1991, Martha Guimond of Joseph A. Guimond & Associates, Inc. visited the Tyler Pipe facilities in Tyler, Texas. The purpose of the visit was to review the operations and programs at this plant for compliance with applicable OSHA regulations and to compare the conditions with those seen in the 1990 plant review.

The review of the facility included discussions with managers, department heads, and superintendents and a tour of the manufacturing areas followed by a review of findings with management. As a part of the visit, each department head was asked what he perceived as the major problems for his area and what he needed to respond to these concerns.

In nearly all cases, management was positive about developing and implementing programs. If given a clearly outlined program and the directives and tools to implement the program, there was assurances that the plan would be successfully established.

However, we did note that in many cases there was a need for basic training in what exactly should be included in such programs. For example, in designing or laying out production lines, engineering should consider means of getting into and out of the work area as an integral part of the layout.

Production personnel should have a clear understanding of EXACTLY what type of safety equipment is required and why.

Safety and environmental concerns should become a part of production decisions so that ergonomic concerns will also be a part of the layout of more efficient systems--a benefit to both workers and the company.

M. Guimond

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In each department, interest in developing better health and safety programs was expressed by management. Based upon past experience with other facilities of this type, it is our opinion that the major concerns will now be to maintain this interest through successful programs that will reduce worker injuries and provide a better workplace.

This type of program must result from a marriage of the efforts of the safety departments with production and engineering. By training production and engineering personnel in the elements of effective programs, safety and environmental issues will become an integral part of plans for the present and the future.

Our visit to each department was not directed toward finding all potential citable problems. We did, however, attempt to determine those areas of change and concern and have outlined these findings below.

IMPACT MILL ROOM: CASTING PROCESSING

Mr. Dee Arthur Jackson accompanied Guimond and Kuenemann on their tour of this area.

It was noted that the operators were wearing safety equipment throughout the department in a uniform manner. This is certainly an improvement. One area of concern here was the need to wear metatarsal foot protection. It is our understanding that this type of protection is required, but is not being worn in all areas at the present time where required.

It was also noted that the alloy steel chain slings did not have identification tags (id, capacity and reach). These tags are a problem in most plants since they are easily broken off. However, this is another problem that is very commonly cited by OSHA.

We would note that if there are a number of slings in a department and only one or a small percentage are not tagged, OSHA will usually see this as a minor problem. However, if ALL of the slings are not tagged, it is difficult to argue that there is an effective program that merely has minor problems.

In addition, the regulations require that these slings have a full annual inspection as well as "periodic" inspections. It is again difficult to argue that there is an effective inspection program if one can not identify the slings against the inspection records. This is one reason for the need for id tags.

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One future area of concern that may affect this department is the increasing emphasis on ergonomics. In the present layout of the casting cleaning line, the worker must manually pick up the casting and turn to place it on pallets that are stacked. Study of this handling may show more efficient methods of moving these castings so that the castings remain at a more uniform height (for example, waist high), and then be moved more easily out of the area for staging or machining.

Another area of lifting concern is the movement of steel shot in fifty pound bags. In some areas, these bags must be hand carried and more efficient methods could prove a benefit by reducing possible employee injuries and reducing the time needed to service the blast machines.

PRODUCTION FINISHING

Housekeeping, as in a number of other areas, is a major concern in this area. Blocked fire extinguishers, hanging electrical outlets, improper selection of storage cabinet for flammables, and the lack of exit signs were noted.

Exit signs were a recurring problem. This is probably a training area since the clear understanding of what an exit is and is not and how they must be marked did not appear to be clearly understood throughout the facility.

We would suggest that a simple training program to familiarize engineering, safety and supervisory personnel as to the exit door requirements would be beneficial. Signs should be in place as soon as is possible since this is another area of great concern to OSHA, especially in light of the terrible loss of life in a recent industrial fire where exit doors were improperly locked.

This area also had a number of electrical problems which indicated a basic lack of understanding of the OSHA requirements for electrical systems. These problem areas included the use of flexible wiring where fixed conduit would be required, open wires, openings in electrical boxes, and hanging fixtures.

This type of wiring should never be installed and therefore never require replacement. Only acceptable wiring and methods should be used. If employees and supervisors responsible for these areas are not aware of the OSHA and National Electrical Code requirements, again training in these requirements should be a good investment to avoid costly replacement and repair.

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The handling of flammables in this department, as in others, also reflected a lack of understanding of the strict OSHA regulations on this physical hazard.

Flammable paint cans were kept in a standard steel locker. This type of locker is not acceptable. There are commercially available flammable lockers that will meet the OSHA and NFPA codes, and ONLY this type of locker may be used for storing flammable paint containers of this type.

In addition, a fifty-five gallon drum of flammable paint was also stored in the work area. Special flammable storage cabinets for this type of drum are also available.

In addition, special dispensing nozzles (self closing), grounding, and drip containers are also required whenever flammables of this type are dispensed.

Again, this appears to be an area where training in the basic requirements for handling flammables is needed. We saw similar problems with flammables in other departments, and in most cases, it appeared that the persons responsible for handling the flammables were not fully aware of the special needs and did not have the necessary flammable handling equipment (such as cabinets and self closing valves) readily available.

In addition, no smoking signs are needed in these areas, and some evaluation of the vapor path of flammables should be made by safety personnel to determine if any changes in the electrical system may be necessary.

Finally, it was noted that there were numerous portable, man cooling fans in this area, as was the case throughout most departments visited, that needed repairs to guards. It appears that the wire mesh guards used to protect workers from putting fingers into the blade area of the fans pull away quite easily from the frame of the fans. Some modification of the method of installing these mesh guards might be investigated to avoid the constant repair problems.

MOLD BORING; BUILD UP SHOP

In the Machine Shop, there is limited space, and housekeeping must be of constant concern.

Fire extinguishers were blocked but access to this equipment must be kept clear. In addition, there must be a clear pathway to

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electrical control boxes and three feet clear in front of control boxes. Blockage of electrical boxes was a problem in this department as well as in others where space and housekeeping are a problem.

The sling program described above must also be extended to this area as well.

In these areas, as in other areas of the plant, there is a need to label all cranes as to their capacity. These signs must be on both sides of the cranes. We understand the problems encountered in rating some of the older cranes, but it is vital that they be evaluated in a timely manner.

Cranes and their inspection requirements are a complex part of the OSHA regulations. Since these cranes must be annually inspected in a very thorough manner as well as periodically (monthly) inspected as well, it would be difficult to argue that they were being adequately inspected if there is no knowledge of their basic design.

In the area of the Construction Shop, it was noted that there are a number of machines in use that are difficult or impractical to guard. Among these are the rolls. Since workers must have open access to these rolls, which could cause injury to these workers, Standard Operating Procedures (SOP) the safe operation of this equipment needs to be established.

This SOP should be in writing and all affected employees be trained in these procedures. Supervision must then rigorously enforce these procedures. Here again, establishing clearly what must be done and then communicating these requirements is perhaps the most important step that needs to be taken.

There is also a shear in use in this area which could be guarded more effectively. A barrier guard that would extend outwards so that hands or other body parts can not be inserted into the work area would be effective or a light curtain that would shut down the machine when the beam is broken by a body part inserted where it does not belong would also be acceptable.

Exit signs are needed here, as elsewhere in the plant, and the electrical control boxes must be kept clear.

Extension cords were in wide usage in this area. Extension cords are only to be used where necessary for temporary wiring. Too many times at the plant we have seen flexible wiring and

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extension cords used where permanent wiring and conduit are required by the regulations.

Finally, it was noted that there should be some investigation of the type of hand protection necessary for welders. Welders require hand, arm and upper body protection, at the least. Welders should never do their jobs in anything except gloves and arm protection approved for this job.

Here is another area where the acceptable types of protection available and required for this job needs to be made clear to supervision and workers.

A method for workers and supervision to comment on the type or style of protection may be of great benefit. For example, sometimes the welders glove chosen by management is thought to be too stiff or clumsy to allow the welder to do his or her job effectively. If so, there are alternatives that will provide protection and give the necessary freedom for the welder.

However, it is essential that the method or responsibility for selecting protective equipment be clearly established and maintained. If there is no method of oversight on the selection of protective equipment, there is the danger that inadequate and potentially dangerous equipment will be used because of lack of understanding.

SOUTH PLANT

The implementation of a Personal Protective Equipment Program at this plant was a marked improvement over the last visit. Employees were wearing eye, ear, and foot protection as well as hardhats in nearly all cases.

Workers in the Core Room were all wearing respiratory protection and the area was clearly posted to alert anyone entering of the potential hazard.

Supervision in this plant expressed commitment to the program and agreed that the two areas of future concern are:

- a) Uniform selection of equipment for all departments and plants. For example, metal pourers in the South and North Plants would be required to wear the same level of protection.

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b) Proper use of the equipment. It is essential that the equipment, such as hearing protection, not only be worn, it must be worn properly or it is of little or no benefit to the wearer.

An area of concern that we believe reflects the need for basic understanding of access, aisleway, and exit requirements is the Conveyor Mill Room grinder layout. In this area, there is no way for the grinder operators to leave their work stations by an aisleway or unobstructed means of egress.

These grinder operators must go under the overhead conveyor system or squeeze by equipment that is much tighter than the aisleway standards require. It is essential that those personnel responsible for laying out this type of area be aware of the OSHA and any other agency (such as your local fire laws) requirements.

Too many times it is assumed that engineering personnel are acquainted with these requirements, but in general this is not the case. We feel it is important that this type of knowledge be a part of the layout and decision making in the beginning of the project. If the layout does not meet standards, it must be modified or redone, and this is a waste of time and effort that surely should be avoided if possible.

Again, these requirements should be clearly available to those engineering or production people, and they in turn must be aware of the need to meet these standards and regulations.

On the day of our visit, conditions in the South Plant reflected the need for a general program of repair of hand rails, ladders, and damaged guards. The purpose of this report is not to enumerate all of the specific items seen, but to present the overall concerns for each area.

This area showed more of the general "wear and tear" that needed constant attention. The movement of the fork lift trucks throughout the departments and the damage that they have caused to ladders and columns is evident. We were informed that there are problems with space and access, but the level of damage was higher here than in the other areas of the facility which we visited.

Exit signs are needed, again, throughout the entire South Foundry. Another factor in the need for these signs is that their lack indicates that the company can not have an adequate Emergency Evacuation Program to meet OSHA or EPA requirements

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since the means of egress are not clearly marked.

Open electrical control boxes were also noted in this area. Electrical control boxes must be kept closed except for maintenance.

Non standard stairs were also noted in the Match Master Area. This is a more and more frequently cited standard in the foundry industry. Again, regulations and standards for types of ladders and stairs should be readily available and those responsible for selection and approval of design and installation must be aware of these regulations.

In the Mold Master Area, the levels of airborne dust in the shakeout area appeared to be high. This should be evaluated as a respirator area. Of the three workers at this location, one was wearing a respirator correctly, one had a respirator on but only one strap was in place, and one was smoking and without a respirator.

In the Impact Molding area, again the shakeout area appeared to have relatively high airborne dust levels on the day of our visit. No respirators are worn in this area. We would recommend that these workers be tested for dust and silica exposure.

In the Core area, it was noted that the core wash is flammable, and the liquid is sometimes transported in an open bucket. Only specially designed enclosed containers may be used for this purpose. Storage of flammable materials must also be in accordance with regulations as described in earlier portions of this report.

Frayed electrical cords were also seen on the floor in this area. This is another electrical hazard.

NORTH FOUNDRY

Employees in the North Foundry also were wearing their Protective Equipment throughout the facility. It was noted, however, that the pouring operations here were on a level above workers assigned to other tasks. We have recommended that this area be evaluated to determine if protective equipment should be extended to those in the area of the pouring as well.

We have also recommended that the Protective Equipment required in ALL pouring areas be consistent. The requirements for the

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North and the South Foundries must be consistent since the hazards are the same in each of these areas.

Compressed gas cylinders, for the most part, were properly handled. However, it was noted that here, as from time to time seen in other areas, one cylinder was not chained upright.

It was also noted that the discharge on the reclaimer required repair and was dusting, but we were assured that this repair was already scheduled.

Finally, it was noted that the grinder area should be evaluated to determine compliance with respirable dust and silica standards. If more dust controls are needed in this area, a respiratory protection program should be immediately implemented.

In addition, this is another area where a review of the ergonomics might be of use since the handling of the castings in this area appears to require workers to lift and move the castings manually from floor to waist level.

SUMMARY

In all areas of the facility we reviewed on this visit, there was co-operation from all levels of management. With the exception of one area, the superintendent or manager of the plant or department accompanied us on our tour. Unfortunately, in one area, a previously scheduled meeting precluded this.

We saw great improvements in the Personal Protective Equipment Programs in all areas. The next step in this program is to insure that it is uniformly and consistently enforced in all departments and that the equipment is not only worn, but is properly worn and maintained.

Other remaining areas of concern may require more training and awareness of those responsible for the day-to-day operation of the plants. For example, exits, flammables, slings, and electrical wiring are common problem areas that do not appear to be recognized everywhere.

In addition, more training for planning and layout personnel, whether from engineering or production, will avoid basic problems such as means of entry and exit and load ratings of cranes.

The attention and interest of Tyler's people appears to be

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focusing on the safety and health issues, but this attention now needs focusing on how to develop and implement appropriate programs.

If you should have any questions concerning this review, please do not hesitate to contact us.

Sincerely yours,
JOSEPH A. GUIMOND & ASSOCIATES, INC.

Martha Guimond

cc: Mr. James Milstead