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June 1, 2004

VIA HAND DELIVERY

FILED

JUN 01 2004

Mr. Dale Hardy Roberts
Secretary/Chief Regulatory Judge
Missouri Public Service Commission
PO Box 360
Jefferson City, MO 65102

**Missouri Public
Service Commission**

Re: *GS Technologies Operating Co., Inc. d/b/a GST Steel Company v Kansas
City Power & Light Company*, Case No. EC-99-553

Dear Mr. Roberts:

Enclosed for filing in the above case is an original and eight copies of the **Reply Brief of GST Steel Company to KCPL's Initial Brief on Remand**.

Also enclosed is the original and eight copies of **Corrected Proposed Findings of Fact and Conclusions of Law of GST Steel Company**.

If you have any questions, please feel free to contact me.

Very truly yours,

LATHROP & GAGE L.C.

By:

Paul S. DeFord

PSD/jf
Enclosures
cc: All counsel of record
(w/enclosures)

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BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

FILED

JUN 01 2004

GS Technologies Operating Co. Inc.)
d/b/a GST Steel Company,)

Complainant)

v.)

Kansas City Power & Light Company,)

Respondent)

Missouri Public
Service Commission

Case No. EC-99-553

REPLY BRIEF OF GST STEEL COMPANY
TO KCPL'S INITIAL BRIEF ON REMAND

I. INTRODUCTION

GST Steel Company ("GST") hereby submits its Reply Brief in response to arguments made by Kansas City Power & Light Company ("KCPL") in its Initial Brief on Remand ("I.B.R.") filed on April 16, 2004.

II. OVERVIEW

GST introduced substantial, highly probative and uncontroverted evidence reconstructing the sequence of events leading up to the boiler explosion in February 1999. This evidence consisted largely of KCPL's own records: statements of control operators and other employees that were at Hawthorn on February 15, 16, and 17, plant drawings, plant procedures and manuals, alarm records, records of equipment "holds," KCPL correspondence with other parties, reports of equipment found in the debris after the boiler explosion, etc. This record documents a compelling chain of KCPL imprudent actions and failures to act that precipitated the boiler explosion. There was no single or sudden equipment failure or operational glitch at fault. At any point over a nearly 10-hour period, KCPL could have taken basic steps, required by its own

safety procedures, to place the plant in a safe condition. Instead, through carelessness and a consistent failure to follow its own procedures, KCPL created and perpetuated the unsafe conditions that led to the explosion.

As a highly qualified expert in the design, construction, operation and management of fossil-fired generation plant, GST Witness Jerry N. Ward established that prudent utility managers would have taken steps, required by KCPL's operating procedures as well as common sense, to place the plant in a safe condition while water damage to the electronic components of the Hawthorn burner management system were being repaired. Although it had ample opportunity, KCPL did not offer any witnesses to challenge Mr. Ward's testimony that KCPL's failure to follow its own procedures and other unreasonable actions and failures to act caused that unsafe conditions to occur. In its Initial Brief on Remand, KCPL snipes at Mr. Ward's investigative methods and techniques, but the utility neither attempts to challenge the authenticity of the KCPL documents on which Mr. Ward relied nor the veracity of the facts contained therein. Ultimately, of course, it does not matter whether Mr. Ward assembled the materials that support his expert testimony in six hours or six months,¹ as long as those materials are probative to the facts and issue.

Reduced to its essentials, KCPL is left to argue that there was no need to place a hold on its main gas valve because repair work was not being performed on the gas line system during the outage [KCPL Initial Brief at 12-13]. In the same breath, the utility admits that "KCPL's hold procedures are . . . designed for worker protection when a system could become unexpectedly "alive" and place workers in a zone of danger." *Id.* (citing Tr. 266-67). This, of course, is

¹ Indeed, the efficiency of Mr. Ward's document requests at Hawthorn is simply evidence of his experience and expertise in this field and the patently obvious causative factors concerning the explosion.

exactly the circumstances that developed because KCPL did not prevent potential gas flow to the boiler while the system that controlled both the movement of gas valves and operation of the boiler igniters was disabled by water damage from the sewage flood. KCPL's attempt to excuse its malfeasance by splitting hairs between repair of the pipes and valves of the gas system and the effort to repair the damaged BMS system that controlled most of those valves is not credible. The considerable and substantive evidence of the facts contained in the KCPL documents on which Mr. Ward based his expert opinion are the uncontested facts of this case. They demonstrate that Mr. Ward correctly assessed that KCPL acted and failed to act in a reasonable and prudent manner in its management of the Hawthorn facility leading up to the explosion.

III. ARGUMENT

KCPL asserts that GST has "utterly failed to support its case with the evidence required by law" (KCPL I.B.R. at 1-2). Yet, GST's expert witness Jerry N. Ward provided overwhelming and unchallenged evidence on the record, principally in the form of contemporaneous documents penned by KCPL employees or created in the normal course of KCPL's business, that KCPL acted in an unreasonable and imprudent manner with respect to the Hawthorn explosion that occurred on February 17, 1999. Mr. Ward documented that KCPL opened the main gas valve to Hawthorn in preparation of heat-up of the boiler, that KCPL halted the heat-up, and that the main gas valve to Hawthorn was not again red tagged and closed prior to the explosion that destroyed the boiler building. Mr. Ward documented, using contemporaneous KCPL documents and plant records, that waste water flooded the Hawthorn control room and drained down several floors to the computer room. Mr. Ward documented, without challenge from KCPL, that waste water damaged the Burner Management System ("BMS") that monitors and controls the introduction of

natural gas into the Hawthorn boiler. He documented that the BMS system began to malfunction. With the BMS issuing both real alarms and spurious signals, Mr. Ward established that KCPL was operating in a virtually blind state, and that the utility was unaware of the gas entering into the boiler through the open main valve while BMS components were being dried, checked, replaced and re-tested.

KCPL has not disputed that the BMS system normally controls the operation of gas valves and igniters in the Hawthorn boilers. PSC staff witness Lissik agreed with GST that the water damage to the BMS electrical components made it impossible to predict the type of malfunctions, shorts, or system errors that the water damage could cause. Tr. 348. KCPL does not dispute that it could not predict those events while repairing the BMS. Nor does it even challenge Mr. Ward's core conclusion that closing the main gas valve was the only way to ensure plant safety under the conditions. Thus, GST established by clear, competent, and compelling evidence that KCPL's continued reliance on the damaged BMS system to maintain plant safety was unreasonable, and that KCPL carelessness and failure to follow its own safety procedure created and perpetuated the unsafe and dangerous conditions that precipitated the explosion. By any measure, GST has demonstrated that KCPL's actions were unreasonable and imprudent.

A. GST's Mr. Ward Is Highly Qualified to Address Whether KCPL's Management of Hawthorn was Reasonable and Prudent

KCPL asserts that the Commission should disregard Mr. Ward's expert testimony because he is not a power plant explosion investigator (KCPL I.B.R. at 11-12). In fact, Mr. Ward is eminently qualified as an expert on the subject matter at issue in this proceeding, *i.e.*, KCPL's management of the Hawthorn facility. Mr. Ward has over thirty years of experience in the energy industry (*see* Exhibit 5, Schedule No. 1). He has been involved in all aspects of electrical

generation, including engineering, construction, operation and/or financing of essentially every major type power plant, including coal, gas, nuclear and waste fueled facilities (*id.*; *see* Tr. 280). Moreover, Mr. Ward has direct experience in the design and day-to-day operation and maintenance of fossil generation plants similar to KCPL's Hawthorn facility (*see* Tr. 280-81; Exhibit 5, Schedule No. 1, at 2-3).

The basic question here concerns what KCPL did, or failed to do, to allow a hazardous condition to develop and go undetected at Hawthorn. Mr. Ward is more than qualified to provide his expert opinion as to the circumstances that existed at Hawthorn and whether KCPL under the circumstances at issue properly followed express safety procedures and otherwise managed the Hawthorn facility in a reasonable and prudent manner leading up the explosion. Testimony concerning KCPL's mismanagement of this event did not require expertise in the forensics of power plant explosions, and KCPL does not in any event challenge the essential facts Mr. Ward presented concerning the flow of gas through the open main valve to the boiler, KCPL's failure to close the main gas valve, and KCPL's unreasonable reliance on the water damaged BMS system. Mr. Ward's concise recounting of the explosion chain of evidence by reference to the very documents that any experienced plant operator would look to first (i.e., the control room operator logs, Hawthorn's safety manual, engineering diagrams, etc.) is testament itself of his expertise and experience in this field.

B. GST's Expert Testimony and Record Evidence Supports GST's Case and Is Undisputed

KCPL faults Mr. Ward's for relying upon contemporaneous statements of KCPL employees without interviewing those KCPL employees (*see* I.B.R. at 8-9). This criticism is groundless. As the Court of Appeals noted, and KCPL itself directly quotes: "the acts that

supported Mr. Ward's theory were contained in all of the other statements and documents attached to Mr. Ward's testimony to which KCPL raised no objection.'" I.B.R. at 7 (quoting *State ex rel. GS Technologies Operating Co., Inc. d/b/a GST Steel Co. v. Public Service Commission*, 116 S.W.3d 680, at 690 (Mo. App. 2003)). Mr. Ward documented each point he raised using KCPL sources. If KCPL considered any of those statements, or Mr. Ward's use of those statements or documents, to be inaccurate in any way, the company could have produced a witness to challenge a particular statement or Mr. Ward's interpretation of a particular document. KCPL choose not to do so.

Rather than offer a substantive response, KCPL criticizes Mr. Ward's investigative process, *i.e.*, reviewing thousands of pages of documents that KCPL assembled in its Master File Index related to the Hawthorn investigation, as well as maps and other records related to the Hawthorn plant, and relied upon those KCPL documents to support his expert opinion (I.B.R. at 9). The Court of Appeals, however, determined that Mr. Ward's testimony and documentary materials were substantive evidence to be considered, and that the Commission must also consider Mr. Ward's assertion that KCPL's failure to act to close the main gas valve during the roughly 10 hours between the onset of the sewage flood and the explosion was imprudent. KCPL concedes that the boiler explosion was caused by an accumulation of natural gas in the Hawthorn boiler (Exh. 12, p. 19). That criticism does not counter or diminish the probative value of the following basic facts established by KCPL's own documentation:

- KCPL released the red hold on the main gas valve on February 16 to begin the Hawthorn re-start (Exh. 6, p. 10, Sch. No. 13).
- KCPL failed to reestablish the hold on the main gas valve after KCPL's operators became aware of water damage to the BMS system, and began receiving spurious signals from that system (Exh. 6, pp. 19-20, Sch. No. 17).

- KCPL employees spent nearly 10 hours drying, cleaning and repairing damaged and shorted BMS components without taking steps to prevent the accidental flow of gas to the boiler (Exh. 6, Sch. Nos. 5, 6, 7, 8, 10).
- Throughout this period, KCPL did not de-energize the BMS system or tag close the main gas valve to the Hawthorn boiler, but continued to rely on the damaged BMS system to maintain plant safety (Exh. 6, p. 10, Sch. No. 13).
- Gas flow began around 9:30 pm on February 16, shortly after operators received an apparently spurious master fuel trip and reset, and while repairs continued on the BMS system. (Exh. 5, p. 15, App. 12; Exh. 5, p. 16).
- There was a gas flow pathway of open valves from the main valve to the boiler (Exh. 6, pp. 19-20; Sch. Nos. 17, 22).

Mr. Ward correctly relied upon this record evidence, the authenticity and veracity of which is unchallenged.

Finally, KCPL claims that Mr. Ward misunderstood the KCPL Safety Manual and its hold procedures and the reasons why KCPL did not place holds on the gas lines to the Hawthorn boiler (KCPL I.B.R. at 12-13). KCPL claims that Mr. Ward did not know if work was being performed on the gas lines on February 16 and 17, in an apparent attempt to imply that equipment holds on the main gas valve were unnecessary (*see* KCPL I.B.R. at 13). Mr. Ward explained, however, that KCPL employees were working on repairs to the water damaged BMS system that controlled gas flow to the boiler, as well as operation of the boiler igniters, throughout the afternoon and evening of February 16 and on February 17 up to the point of the explosion.

A. (By Mr. Ward): You take out whatever you need to do to establish safe working conditions.

Q. (By Mr. Fischer): Even when no one is working on those systems?

A. (By Mr. Ward): But someone was working on the fuel gas system and the BMS system.

Q. (By Mr. Fischer): You were told that someone was working on the gas lines?

A. (By Mr. Ward): On the system that controls valves in the gas line.

Q. (By Mr. Fischer): And you were talking there about the BMS system, not the gas lines?

A. (By Mr. Ward): The BMS controls the valves in the fuel gas system.

(Tr. 274-276). If KCPL operators in fact applied the hold procedures as literally and irrationally as the company's brief intimates, the Commission should find that there was imprudence *per se*. As Mr. Ward explained, failure to employ holds for necessary equipment protection as well as for worker safety was imprudent on its face (Tr. Vol. 5, p. 283). Indeed, the notion that KCPL managers consciously chose to keep the main gas valve open while BMS components were checked, repaired and tested using the logic described in the company's brief, is not in any way exculpatory since it suggests ignorance and incompetence rather than inattentiveness. Either way, KCPL offered no witness to challenge Mr. Ward's evidence showing that KCPL normally used its "red hold" procedure to tag the main gas valve closed during shutdown, (Tr. 284-285), and that the company failed to reestablish this hold when water damaged the BMS system (Exh. 6, p. 10, app. 13). KCPL offered no witness or evidence to challenge Mr. Ward's assessment that reasonable and prudent management required that KCPL close the main gas valve to make the plant safe under those conditions.

In sum, KCPL endeavors to make the prudence issues seem complicated, but they are not. Plant safety should always be a plant manager's top priority. The KCPL Safety Manual was designed to ensure it, and the BMS system was designed under normal operation to ensure that this happened automatically. The BMS, however, was not designed to operate with water damaged components. If malfunctioning, the BMS manual called for the system to be repaired, not operated in a dangerously damaged condition. Both the Safety Manual and the computerized

fuel management system are supposed to be implemented by managers that apply common sense. This did not occur here, and the result was a spectacular, but fortunately not deadly, explosion. There is nothing incomplete or inadequate about the record concerning KCPL's management failure. There is competent, largely contemporaneous evidence of management's failures.

C. Commission Staff Do Not Dispute Mr. Ward's Evidence

KCPL clings to a statement by Staff witness Lissik that she still had questions concerning the incident (KCPL I.B.R at 10-11). KCPL's reliance on Dr. Lissik's uncertainty is a desperate effort to use Staff as a shield, and it is clear that Staff does not intend to be used in that fashion. Staff stated that it took no position at all regarding the prudence or imprudence of KCPL's Hawthorn-related actions (Staff I.B. at 9). Dr. Lissik clearly stated as well that she had no position on this issue (Tr. 308). Dr. Lissik noted only that other Staff members were assigned to the separate Hawthorn explosion docket, Case No. ES-99-581, and that Staff had no opinion because it had not completed its review in that docket (Exh. 9, p.12).

Moreover, Dr. Lissik did not disagree with any of the facts offered by GST concerning the chain of events on February 16 and 17 at Hawthorn. She did not find any of the material facts contained in Mr. Ward's testimony to be inaccurate or incomplete (Tr. 341-360). She further testified that it would be unreasonable for KCPL to create an unsafe condition at Hawthorn (Tr. Vol. 342). Significantly, she also did not dispute or disagree with GST's finding that KCPL failed to close the main gas valve, that the Hawthorn BMS was damaged by the sewage overflow, that the type of damage water causes to electronic components can be unpredictable, and that the damaged BMS sent alarms and spurious signals. (Tr. 341-360). In short, Staff had no different facts to offer, and it did not disagree with any facts that GST offered in the record.

CONCLUSION

For the reasons stated herein, as well as in GST's Initial Brief on Remand, GST respectfully requests that the Commission determine that Kansas City Power & Light Company acted in an unreasonable and imprudent manner concerning the matters addressed in this case, that KCPL's imprudent actions resulted in unjust and unreasonable charges to GST, and that KCPL's overcharges of GST amounted to at least \$4.5 million following the Hawthorn boiler explosion that occurred in February 1999.

Respectfully submitted,



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CERTIFICATE OF SERVICE

I hereby certify that copies of the foregoing document were served upon the following parties by hand delivery on June 1, 2004.

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