

GOVERNOR'S COMMISSION RE: KLEEN ENERGY EXPLOSION
Final Report

I. Introduction and Executive Summary

This Commission has been charged with determining the origin and cause of the February 7, 2010, explosion at the Kleen Energy construction site in Middletown, Connecticut. That explosion took the lives of six men and injured more than thirty other people. The goal of this Commission is to provide information necessary for a second Commission, to be chaired by Mr. James Thomas (the "Thomas Commission") to carry out a separate assignment. The Thomas Commission has been tasked with recommending any necessary specific legislative or regulatory changes.

These two Commissions, working interdependently, have the mission of ensuring that the events of February 7, 2010, are never repeated in the State of Connecticut. It is hoped, further, that the recommendations of these two Commissions will be of value to federal regulatory authorities and to regulatory authorities in other states.

After this Commission began its work, the complexion of the ongoing investigation of the Kleen Energy explosion underwent a significant change when, on February 23, 2010, a judge of the Connecticut Superior Court signed a search and seizure warrant applicable to the site of the explosion. This Commission recognizes that the criminal option must be explored to the fullest, out of respect for the six men who died, their families, and those who were injured in the explosion. It is incumbent on this Commission to complete its assignment without compromising the ongoing criminal investigation. The members of the

Commission have concluded that they can accomplish their task by making the following determinations:

1. The Commission finds that the February 7, 2010 explosion was the product of a process used to clean a natural gas pipeline using large quantities of natural gas that came into contact with an ignition source known in the industry as a “gas blow;”
2. The Commission finds that, although the Kleen Energy construction project was heavily regulated by a variety of agencies, no agency regulated the process used – or any process that might be used such as gas purging – to clean the natural gas pipeline that was the source of the explosion; and
3. The Commission finds, and recommends to the Thomas Commission, that there are significant regulatory steps that should be taken to ensure that the events of February 7, 2010 are not repeated.

The Explosion

Kleen Energy Systems, LLC has been constructing a natural gas and oil-fired power plant in Middletown, Connecticut since 2008. Kleen Energy expected that construction of its plant would be complete sufficiently in advance of November 2010, in accordance with its capacity contract with Connecticut Light & Power. Kleen Energy’s source for natural gas was via a pipeline servicing the Northeast. On February 7, 2010, at approximately 11:15 a.m., a large explosion occurred at Kleen Energy’s plant. At 11:19 a.m., first responders in Middletown learned of the explosion and received reports of multiple casualties.

The Commission has heard presentations from Middletown South District Fire Chief Edward Badamo, who was the incident commander at the site and whose Deputy Chief/Fire Marshal, Steve Krol, was statutorily charged with determining the origin and cause of the explosion. He was aided in his investigation by the Middletown Police Department, and the Office of the State Fire Marshal which, in turn, was aided by the Connecticut State Police Central District Major Crime Squad.

Although the investigation is ongoing, significant resources and efforts have been devoted to the investigation, including the collection of more than 115 items of evidence and the completion of more than 100 interviews, as well as twenty days of on-site investigation by multiple investigative entities, including but not limited to the South District Fire Department, the Office of the State Fire Marshal, the Middletown Police Department, the Connecticut Department of Environmental Protection, the Office of the Chief State Medical Examiner, The United States Occupational Safety and Health Administration, and the United States Chemical Safety Board.

The investigation to date, although incomplete, has established without question that the explosion resulted from a process known as “cleaning” or “blowing” a natural gas pipeline for the purpose of removing debris from the pipeline, i.e., a “gas blow.” In this case, the “blowing” was effected through the use of large quantities of natural gas, propelled outside the Kleen Energy power block under very high pressure, where it accumulated and ignited from a source near or in the Kleen Energy power block.

Although the investigation is ongoing, and will focus on the precise mechanisms and procedures that led to the use of natural gas for the cleaning

process, as well as the manner and means in which the gas was used, dispersed, and ignited, it is sufficient for the purposes of this Commission to know that it was the process of cleaning the natural gas pipeline in the manner described that led to the explosion. Armed with this information, this Commission will identify the regulatory structure applicable to the cleaning process. Further, this Commission will recommend possible revisions to the regulatory structure relative to gas blows for consideration by the Thomas Commission.

The Existing Regulatory Structure

The Commission finds that the construction of the Kleen Energy plant was heavily regulated and supervised by a variety of agencies, including federal OSHA, the local building inspector, the local fire marshal (both of whom were supported by the Office of the State Fire Marshal and the Office of the State Building Inspector), the Department of Public Utility Control, the Department of Environmental Protection, the Connecticut Department of Labor, the Connecticut Department of Consumer Protection, and the Connecticut Siting Council. However, no agency had oversight with regard to that part of the construction process known as “cleaning” or “blowing” the natural gas pipeline, a process that is a necessary step in the construction of any natural gas-fueled power plant.

Changes to the Regulatory Structure

It is for the successor Commission to determine what regulatory changes should be recommended. However, in an effort to assist that Commission with its work, this Commission suggests a variety of areas that should be pursued. They are as follows:

1. Determine whether any other state or federal agency has developed a regulatory structure applicable to natural gas pipeline cleaning (hereinafter, "gas blowing" or a "gas blow").
2. Consult with industry experts to determine which methods of gas blowing are used and/or recommended, and identify the advantages and disadvantages of each method.
3. Identify the agency, or agencies, best suited to regulate the gas blow process.
4. Recommend the level of training and expertise necessary for that agency to effectively establish and enforce necessary cleaning regulations.
5. Consider recommending that the Connecticut Siting Council impose safety conditions upon any entity constructing a power plant that will employ the gas blow cleaning process.
6. Consider recommending that the Connecticut Department of Consumer Protection and/or the Connecticut Department of Labor identify, if appropriate, special licensing, credentials and/or training for those assigned to effect power plant gas blows in Connecticut. Further, consider recommending that the latter agencies address whether work schedule limitations are appropriate for those assigned to perform power plant gas blows in Connecticut.
7. Consider recommending the establishment of regulations in the following areas:

- a. For every method of gas blowing, the qualifications, training, credentials and/or licensing needed for the staff involved in the gas blow process;
- b. Determine which and/or whether any of the gas blow agents now in use should be permitted in the future;
- c. Identify acceptable practices for each permissible gas blow agent;
- d. Identify the type and level of notice that must be given by the contractor to the regulatory agency, or agencies, prior to any gas blowing operation;
- e. The establishment of design specifications for the materials to be used in the gas blowing process;
- f. The establishment of site requirements and limitations (e.g., identify the personnel who may be on site before and during the gas blow; set the qualifications for those individuals; identify the roles of individuals permitted to be on site; set appropriate perimeter security; consult with appropriate authorities as to the propriety of drafting regulations intended to prevent worker fatigue).
- g. The establishment of gas blow procedures (e.g., identify what other activities, if any, may take place on site prior to, during, and after the cleaning process; identify, if appropriate, weather conditions that will preclude the cleaning operation; establish limitations for the periods of cleaning; establish appropriate site monitoring, both in terms of personnel and detection equipment, before, during and after the cleaning).

8. Recommend an agency or entity responsible for serving as a “clearinghouse” to coordinate the efforts of every regulatory agency with responsibilities associated with the construction of a power plant. The agency or entity recommended would serve to track and record the work of all other regulatory agencies. The Department of Emergency Management and Homeland Security has expressed a willingness to identify models of the latter form of operating structure.

Statement by the Chairman

First, I want to thank Governor Rell for her wisdom and compassion in dealing with the terrible events that occurred in Middletown on February 7, 2010. The findings and recommendations of this Commission and subsequently the Thomas Commission will hopefully prevent such a tragedy from occurring in the future.

I also want to thank the members of this Commission and their staffs for all of their hard work in preparing for our hearings and for their most important contributions to our final findings and recommendations. I would like to thank John Danaher and his staff for their work in the drafting of this report and Kevin DelGobbo and his staff for providing the venue for our hearings and administrative support. I want to express my appreciation to attorney Brian Spears of Levett Rockwood P.C. in Westport for his invaluable assistance and input in the preparation of the final report.

In addition to the points set forth above and in the attached agency reports, let me add an additional suggestion to Derek Phelps and the Connecticut Siting Council. Hopefully, the Thomas Commission will develop specific proposed

statutory and regulatory recommendations as quickly as they can. However, the adoption of their recommendations will in all likelihood have to await the next session of the General Assembly.

The current permit for the Middletown Kleen Energy facility expires on November 30, 2010, and it must apply for a renewal and/or extension of that permit. If the Thomas Commission has made its recommendations by the time the Siting Council is prepared to act, I would strongly urge the Council to attach as conditions to any permit it issues, language that addresses the findings of this Commission and the adoption of the specific recommendations of the Thomas Commission.

It has also been suggested that a "coordination council" consisting of pertinent state agencies be assembled to share information during the course of construction of a large power facility. The Siting Council might serve as the coordinating entity using its "changed conditions" authority if concerns arise that there is a pattern of violations during construction. The Siting Council should review this report and ultimately the Thomas Commission report to determine whether its "changed conditions" authority would enable it to review all power plants within its jurisdiction to determine whether such plants warrant further attention.

It is suggested further that the Thomas Commission solicit comments and input from the Siting Council as to how the Siting Council might address concerns relative to gas-fired baseload power plant facilities that have been permitted in the past and the records of which are now closed.

STATEMENT OF THE CHAIRMAN

Background

On February 7, 2010, at approximately 11:15 a.m., a large explosion occurred at a power plant in Middletown, Connecticut, which was being constructed by Kleen Energy Systems, LLC. At 11:19 a.m., first responders in Middletown learned of the explosion and received reports of multiple casualties. The explosion took the lives of six men and injured more than thirty other people. The power plant in Middletown was intended to be a natural gas and oil-fired facility. Kleen Energy's source for natural gas was via a pipeline servicing the Northeast.

On February 8, 2010, Governor Jodi Rell assembled this Commission to consist of representatives from certain state agencies in order to identify the cause and origin of the Kleen Energy power plant explosion. Governor Rell also formed a second group of state agencies, local officials and subject-matter experts to review the disaster and the findings of this Commission and other investigations. The second panel, chaired by Mr. James Thomas, will determine whether any changes should be made to Connecticut laws, state and local regulations or building and fire codes to protect both workers and residents living in the areas surrounding construction projects.

Nature of the Commission's Investigation

This Commission has met on several occasions since February 8. In addition, significant resources and efforts have been devoted to the investigation, including the collection of more than 115 items of evidence and the completion of more than 100

interviews, as well as twenty days of on-site investigation by multiple investigative entities.

Findings

This Commission recognizes that there is an ongoing criminal investigation concerning the explosion and that the criminal option must be explored to the fullest, out of respect for the six men who died, their families, and those who were injured in the explosion. It was incumbent on this Commission to complete its assignment without compromising the ongoing criminal investigation. Nevertheless, the members of the Commission are able to make the following findings.

First, the explosion resulted from a process known as "cleaning" or "blowing" a natural gas pipeline for the purpose of removing debris from the pipeline. In this case, the "blowing" was effected through the use of large quantities of natural gas, propelled outside the Kleen Energy power block under very high pressure, where it accumulated and ignited from a source near or in the Kleen Energy power block. This process is known in the industry as a "gas blow."

Second, the construction of the Kleen Energy plant was heavily regulated and supervised by a variety of federal and state agencies. However, no agency had oversight with regard to "cleaning" or "blowing" the natural gas pipeline, a process that is a necessary step in the construction of any natural gas-fueled power plant.

Changes to the Regulatory Structure

It is for the Thomas Commission to determine what regulatory changes should be recommended. However, in an effort to assist that Commission with its work, this Commission

suggests a variety of areas that should be pursued. They are as follows:

1. Determine whether any other state or federal agency has developed a regulatory structure applicable to natural gas pipeline cleaning.
2. Consult with industry experts to determine which methods of gas blowing are used and/or recommended, and identify the advantages and disadvantages of each method.
3. Identify the agency, or agencies, best suited to regulate the gas blow process.
4. Recommend the level of training and expertise necessary for that agency to effectively establish and enforce necessary cleaning regulations.
5. Consider recommending that the Connecticut Siting Council impose safety conditions upon any entity constructing a power plant that will employ the gas blow cleaning process.
6. Consider recommending that the Connecticut Department of Consumer Protection and/or the Connecticut Department of Labor identify, if appropriate, special licensing, credentials and/or training for those assigned to effect power plant gas blows in Connecticut. Further, consider recommending that the latter agencies address whether work schedule limitations are appropriate for those assigned to perform power plant gas blows in Connecticut.
7. Consider recommending the establishment of regulations in the following areas:
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- b. Determine which and/or whether any of the gas blow agents now in use should be permitted in the future;
 - c. Identify acceptable practices for each permissible gas blow agent;
 - d. Identify the type and level of notice that must be given by the contractor to the regulatory agency, or agencies, prior to any gas blowing operation;
 - e. The establishment of design specifications for the materials to be used in the gas blowing process;
 - f. The establishment of site requirements and limitations (e.g., identify the personnel who may be on site before and during the gas blow; set the qualifications for those individuals; identify the roles of individuals permitted to be on site; set appropriate perimeter security; consult with appropriate authorities as to the propriety of drafting regulations intended to prevent worker fatigue).
 - g. The establishment of gas blow procedures (e.g., identify what other activities, if any, may take place on site prior to, during, and after the cleaning process; identify, if appropriate, weather conditions that will preclude the cleaning operation; establish limitations for the periods of cleaning; establish appropriate site monitoring, both in terms of personnel and detection equipment, before, during and after the cleaning).
8. Recommend an agency or entity responsible for serving as a "clearinghouse" to coordinate the efforts of every regulatory agency with responsibilities associated with the construction of a power plant. The agency or entity recommended would serve to track and record the work of all other regulatory agencies.

Role of the Siting Council

In addition to the points set forth above, let me add an additional suggestion to Derek Phelps and the Connecticut Siting Council. Hopefully, the Thomas Commission will develop specific proposed statutory and regulatory recommendations as quickly as they can. However, the adoption of their recommendations will in all likelihood have to await the next session of the General Assembly.

The current permit for the Middletown Kleen Energy facility expires on November 30, 2010, and it must apply for a renewal and/or extension of that permit. If the Thomas Commission has made its recommendations by the time the Siting Council is prepared to act, I would strongly urge the Council to attach as conditions to any permit it issues, language that addresses the findings of this Commission and the adoption of the specific recommendations of the Thomas Commission.

It has also been suggested that a "coordination council" consisting of pertinent state agencies be assembled to share information during the course of construction of a large power facility. The Siting Council might serve as the coordinating entity using its "changed conditions" authority if concerns arise that there is a pattern of violations during construction. The Siting Council should review this report and ultimately the Thomas Commission report to determine whether its "changed conditions" authority would enable it to review all power plants within its jurisdiction to determine whether such plants warrant further attention.

It is suggested further that the Thomas Commission solicit comments and input from the Siting Council as to how the Siting Council might address concerns relative to gas-fired baseload

power plant facilities that have been permitted in the past and the records of which are now closed.

Concluding Remarks

In closing, I want to thank Governor Rell for her wisdom and compassion in dealing with the terrible events that occurred in Middletown on February 7, 2010. The findings and recommendations of this Commission and subsequently the Thomas Commission will hopefully prevent such a tragedy from occurring in the future.

I also want to thank the members of this Commission and their staffs for all of their hard work in preparing for our hearings and for their most important contributions to our final findings and recommendations. I would like to thank John Danaher and his staff for their work in the drafting of this report and Kevin DelGobbo and his staff for providing the venue for our hearings and administrative support. I want to express my appreciation to attorney Brian Spears of Levett Rockwood P.C. in Westport for his invaluable assistance and input in the preparation of the final report.

I would now like to invite representatives from the state agencies represented on this Commission to summarize their respective reviews and findings.