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Mr. David A. Stawick  
Secretary  
Commodity Futures Trading Commission  
1155 21<sup>st</sup> Street, NW  
Washington, DC 20581

Re: Concept Release on Risk Controls and System Safeguards for Automated Trading Environments

Dear Mr. Stawick:

As an active participant in our global financial markets, KCG appreciates the opportunity to provide its views on practices that market participants can use to reduce the likelihood, and minimize the magnitude, of errors and trading disruptions from the application of trading technology. Technology plays a central role in virtually every aspect of risk transfer, or the trading life-cycle, as it does in every aspect of our modern-day market structure. We believe that all market participants have a responsibility – as well as a strong commercial interest – to minimize, manage, and monitor operational and other risks.

## **I. Background**

KCG is a global financial services firm employing more than 1400 people worldwide and offering investors a range of services designed to address trading needs across asset classes, product types and time zones. As an independent, electronic market maker, KCG combines advanced technology with exceptional client service to deliver greater liquidity, lower transaction costs, improve pricing, and provide execution choices.

KCG trades on various U.S. and foreign futures exchanges, including the Chicago Mercantile Exchange (“CME”) and ICE Futures US (“ICE”). KCG is a market maker – posting two-sided markets. In addition, KCG operates KCG Futures, a registered Futures Commission Merchant, which provides executions services for its clients on the world’s major futures exchanges, as well as clearing and custody services



## **II. Discussion**

### **A. Potential Pre-Trade Risk Controls, Post-Trade Reports, System Safeguards, and Other Protections**

KCG fully supports the goal of reducing risk in the futures markets and believes that risk controls and monitoring requirements are an important mechanism for furthering that goal. We believe that risk management is most effective when it is multi-layered and overlapping, and that all market participants, including clearing firms, exchanges, and Derivative Clearing Organizations (DCOs), play a role in minimizing and mitigating errors and risk.

An important tool in limiting risk to the financial markets is appropriate supervision of all market access. KCG believes that market participants with market access – of any type – should not be able to enter orders without those orders being subjected to effective pre-trade risk management controls. Moreover, it is important that any pre-trade risk control requirements be applied so as to not permit market participants to avoid their application based on the manner in which the participant accesses the market (i.e., directly as a member of the market, through sponsored access, or otherwise).

Nevertheless, KCG emphasizes that the type of pre-trade controls that will be effective at managing a market participant's risks will vary depending on the trading strategy and type of access a market participant has to the market. Allowing variation is critical to robust risk management. Importantly, however, when pre-trade risk controls are provided by an exchange, all orders should be subjected to the same additional latency regardless of whether a participant uses such controls. This equivalency is critical to avoid any disincentive for market participants to use exchange-provided risk controls.

Post-trade risk measures complement pre-trade risk controls and are essential to market participant's ability to monitor and control their financial risks. Finally, real-time monitoring by personnel at a market participant is essential.

As a registered broker-dealer, KCG is subject to SEC Rule 15c3-5, which requires broker-dealers with market access or that provide a customer or any other person



with access to an exchange or ATS, to establish, document, and maintain a system of risk management controls and supervisory procedures reasonably designed to manage the financial, regulatory and other risks, such as legal and operational risks, related to market access. This rule creates common expectations for all firms to police themselves to limit potential market impacting events.

KCG believes the futures market would benefit from the application of similar principles. These principles can be applied in a variety of ways and the Commission should not consider the direct application to registrants as the sole means of accomplishing its goals. It is critical that any new standards be tailored to the unique market structure and industry practices of the US futures market, which has successfully relied on the self-regulatory role of exchanges to supervise market participants and maintain the integrity of the futures markets. Below KCG provides its views on the specific pre- and post-trade risk controls on which the Commission requests comment in its Concept Release.

1. Message throttles

There are two distinct purposes for monitoring and throttling messaging rates. First, monitoring messaging rates are an important component of a market participant's overall risk management procedures. KCG believes that a market participant using automated trading strategies should understand and monitor the expected messaging rates for each trading strategy it uses. The market participant's risk management procedures should monitor whether message rates are higher or lower than expected for a particular strategy and have mechanisms for taking appropriate action when unusual message rates are detected. For FCM clients, it is similarly important to monitor for messaging rates.

Unusual messaging rates may indicate that a participant's automated systems are not operating as intended. In addition, messages that result in open order interest on a market that exceeds a firm's financial and credit limits can create financial risk to a firm. For this reason, message monitoring is an important component of a firm's overall risk management procedures. Because monitoring messaging rates is only one component of a comprehensive risk management strategy, only that market participant can determine the specific levels at which messaging rates provide a warning of possible problems and the level at which throttles should automatically



stop all messaging. It is important to recognize that automatic throttles can increase a participant's risk by prohibiting the participant from cancelling orders or unwinding or hedging position risk and, thus, should be set by the participant as part of its overall risk management program.

Messaging rates are also monitored by exchanges in real time. Exchanges monitor messaging rates to protect the integrity of their market and notify participants when excessive messaging is detected through particular ports. If excess messaging continues, an exchange will shut down the port, which would prevent a participant from sending messages at all.

Second, trading platforms have an interest in maintaining the integrity of their market by ensuring that their users do not send more messages than a platform's systems can process efficiently. Many trading platforms already establish messaging throttles and penalties when certain messaging thresholds are exceeded. These limits are designed to protect the integrity of the trading platform and are best established by each platform. Appropriate messaging rates will vary depending on the role of a participant in the market, the type of product, and the capacity of a particular trading platform to handle message volume.

The CFTC asks for comment on the potential benefits of maximum message rate throttles. As the CFTC is aware, exchanges often impose messaging limits on their members. These limits vary across products and vary depending on the role of a member on the platform. For example, exchanges often exclude market makers from messaging limits because their role as providers of continuous quotes requires market makers to frequently modify the prices and sizes displayed to reflect current market conditions. When these limits are exceeded, the market participant may be assessed a penalty by the exchange. KCG believes this is the best approach to providing incentives for market participants to efficiently send messages to exchanges and monitor their own messaging rates.

Finally, KCG does not believe that message rate limits can be used to mitigate the risk of manipulative or disruptive activities. Excessive message rates are a poor indicator of whether a particular firm is engaging in manipulation or other illegal trading activities. Accordingly, limiting messaging rates will not prevent or minimize such illegal practices.



## 2. Execution throttles

Executions can impact the financial risk of a firm and closely monitoring executions (and the rate of executions) should be a critical element of an overall risk management program for firms trading as principal. In most cases, however, total exposure – not total number of executions – is a better measure of risk and is therefore more useful to monitor.

Because each participant's trading activity, risk appetite, and financial and credit resources is unique, the expected execution rates on a particular market will also be unique. For this reason, establishing limits, monitoring execution rates and throttling must be done by the market participant in conjunction with its clearing firm and other creditors, such as the DCO. Moreover, many participants' trading strategies include trading activity on multiple markets, and thus the responsibility for establishing limits on executions must reside with the market participant and its clearing firm. For this reason, a trading platform's role in execution throttles should be limited to providing tools to market participants to enable participants to mitigate their own risk.

Any risk management tools used by market participants ultimately reduces risk to DCOs. Over-reliance on execution throttles, or any other single risk management tool, could be problematic, however. Because DCOs are concerned about their overall exposure, the number or rate of executions by a particular participant is not a good measure of the risk to a DCO. Because executions can be risk reducing, as well as risk increasing, execution throttles must be intelligently applied by market participants as part of a comprehensive risk management process.

## 3. Volatility awareness alerts

The CFTC asks for comment on volatility awareness alerts that inform firm personnel about changes in market conditions that may disrupt the parameters within which their ATs and algorithms were programmed to operate. KCG believes that such an alert would be of limited value to a firm. Instead, pre-trade risk controls that limit the positions and monitor the profit/losses of particular trading strategies would detect when market conditions change or present conditions different from those under



which an algorithm is designed to perform. Similarly, the risk department of KCG's FCM monitors client exposure as volatility and prices change in the market. Though different from a volatility alert as described by the CFTC, KCG monitors for unusual or erroneous information coming from markets on which it trades. This unusual information may be in the form of a one-sided quote, wider than expected spreads, or other anomalies in market data. When unusual market information is detected, it generates an alert and provides supervisors, traders and other key personnel that monitor trading activity with information to inform their trading decisions and manage any potential risk.

While this type of alert can be valuable to managing the risks associated with some trading strategies, it will not be for all trading strategies. For this reason, KCG believes that market participants should be able to choose whether particular types of alerts are helpful or not to their risk management needs. Any regulatory mandate to generate particular types of alerts will likely not fit the needs of any market participant as well as alerts tailored by that participant to its own, unique strategy and organizational and operational structure. More worrying, such "cookie-cutter" alerts can be distracting to market participants who may be less able to focus on developing and monitoring alerts that are appropriate to their needs.

#### 4. Self-trade controls

KCG believes that market participants should have reasonable self-trade controls in place and policies to review their trading activity for self-trading. However, it is important to recognize that not all self-trading can, nor need, be prevented. In many situations, orders that originate from the same firm, but from separate or distinct trading strategies have different – and sometimes competing – objectives. These distinct trading strategies, in the form of separate desks or algorithms, do not interact or coordinate with each other prior to generating and sending orders to a market.

Participants can, and should be permitted to, implement self-trade controls in a variety of ways. While mandatory use of exchange-provided self-trade controls at the individual trader level are acceptable, self-trade controls at a wider firm level that are offered at the trading platform level, should be optional. Instead, KCG believes firms should be permitted to develop their own self-trade prevention mechanisms.



KCG also asks the CFTC to recognize that not all self-trading can be prevented, nor does KCG believe it is necessary to prevent all such self-trading to preserve the integrity of the market. Firms often employ multiple, unrelated trading strategies that may inadvertently trade with each other on an exchange and should not be required to use exchange-provided self-trade prevention controls to prevent trading between such completely unrelated strategies at a firm. KCG does not believe the CFTC needs to prohibit all self-trading, but that market participants must be able to demonstrate, through information barriers or other effective policies and procedures, that any self-trading is between unrelated strategies and not designed with a manipulative intent.

In addition, KCG believes it is critical that use by a market participant of exchange-provided self-trade controls not be a disadvantage, for example in terms of latency. Any such disadvantage would discourage participants from using exchange-provided self-trade controls. For example, ICE's Self Trade Prevention Functionality does not create any delay while checking for potentially matching orders and thus does not impact latency whether the functionality is active or not.

Finally, KCG asks the CFTC to clearly articulate what it expects regarding self-trade prevention. This issue is one about which market participants, exchanges, and regulators around the world have different and evolving approaches. Clarity around self-trade prevention regulatory requirements is critical to market participants' ability to establish a compliance program consistent with the CFTC's expectations.

##### 5. Price collars

In general, KCG believes the futures markets' price collars work well. They allow for the market to recover quickly if the limit price does not reflect the true price. In addition, they reduce the potential for erroneous trades because there are no trades outside the limit price. In this way, price collars are one of the mechanisms to limit credit exposure by trading firms, clearing firms, and DCOs.

The Commission requests comment on whether price collars should apply to all contracts and to all market participants. KCG supports requiring exchanges to establish price collars on all contracts they list. These collars need to be established



at the exchange level and applied to all market participants. However, because it is important to calibrate price collars based on the product and market conditions, we believe it is critical that the exchanges have discretion and flexibility in establishing these collars. For example, price collars that are too narrow, and are thus triggered frequently, can create disorderly markets, uncertainty and risk. Similarly, exchanges need the flexibility to establish wider price collars for their more illiquid products. In addition, KCG believes that when an instrument that is traded on a market is fungible with an instrument traded on another market, it is critical that price collars are uniform. This issue is not relevant for futures market, which do not trade fungible products, but should be taken into consideration if swap execution facilities (SEFs) and designated contract markets (DCMs) apply price collars to swaps that are also traded on other SEFs or DCMs.

#### 6. Maximum order sizes

KCG believes market participants should use exchange-provided maximum order size controls as part of their overall pre-trade risk control measures, both for client orders and principal orders. We also believe that exchange-provided maximum order size controls should complement similar controls applied by a market participant and a clearing firm or prime broker. The maximum order size controls set by a market participant would depend on a particular trading strategy, product, or client and should be tailored to the financial and credit risk presented. For this reason, in KCG's view, additional standardization of maximum order size technology or more uniform application would not improve the effectiveness of such controls.

In addition, KCG would support further refinements of exchange-provided maximum order size controls to allow a market participant more flexibility in setting different maximum order size levels for different users within a firm, such as based on a trader ID or customer. In the absence of such flexibility in the exchange-provided control, a market participant would set the control at the highest limit required by any user subject to the control and then rely on tighter, more specific controls applied internally.





## 7. Trading pauses

The Commission asks for comment on the existing trading pauses, such as stop-logic functionality and interval price limits, used by trading platforms. Trading pauses can be used, in conjunction with other automated mechanisms, to limit the problem of sharp, destabilizing price swings. Trading pauses or halts should be a last resort, however.

As discussed above, a comprehensive and multi-layered approach to pre-trade risk controls can be an effective way to reduce the likelihood of erroneous trades. In addition, price collars, which are less disruptive than trading pauses, should be used in all products to prevent trading outside certain price limits but allow the market to continue trading with those limits. In conjunction with these other measures, trading pauses can be useful when there are momentary liquidity gaps and provide market participants an opportunity to reassess market conditions. In most cases, very short pauses are sufficient to allow market participants to assimilate information and resume orderly trading.

The Commission asks for comment on the factors that should be used in establishing trading pauses. In this regard, KCG believes trading pause mechanisms need to be adjustable as market conditions and product characteristics change. For this reason, trading platforms are in the best position to establish trading pauses thresholds and mechanics. When the same product is traded on multiple markets, such as may be the case for swaps, it is critical that the same trading pauses to be used by all markets.

The Commission asks how the market should re-open after a trading pause. KCG believes that the opening (and re-opening) auction process in cash equity markets works well. This process allows orders to be collected during a specified pre-opening period, with dissemination of a market clearing price to facilitate price discovery. The market then opens (or re-opens) by crossing orders at the market clearing price.

## 8. Credit risk limits

KCG believes that credit risk screens should be applied to orders and positions of a particular client or ATS and to the positions of the firm overall. Credit checks should be applied by the clearing member that is ultimately responsible to the DCO for the



trades. However, execution-only FCMs and clearing firms should have screening agreements that set out the relative responsibilities of each firm for applying credit limits to a particular client. As credit limits are approached, automated alerts can warn participants and be part of an overall escalation policy.

We note that credit risk screens are a critical component of any risk management program and are not merely designed to protect a firm against “malfunctioning ATs.” Algorithms that operate exactly as designed create credit exposure, which must be monitored to ensure such exposure stays within appropriate limits.

Finally, the CFTC asks for comment on the “hub” model for applying credit controls. KCG believes such a model would itself create new risks that would be difficult to manage. Specifically, a “hub” model would require futures market participants to be overly reliant on a “single-point-of-failure” system. The consequences of any breakdown or error in such a credit hub would be multiplied across the industry with potentially disastrous consequences. Instead, KCG is a strong proponent of distributed risk controls that are redundant and of minimizing reliance on interconnected systems.

#### 9. Order, trade, and position drop copy

KCG believes that market participants should be required to use drop copies that provide a real-time confirmation of executions. These independent drop copies should be incorporated into a market participant’s real time risk management system to ensure that it has a clear view of its positions and the positions of any clients’ for which it clears.

To facilitate this risk management, trading venues should be required to make available to participants independent drop copies that report, on a real-time basis, a participant’s trading activity on a trading venue.<sup>1</sup> In addition, we believe trading

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<sup>1</sup> KCG supports the recommendation made by the FIA in its September 2013 White Paper that the value of Drop Copies can be enhanced by additional functionality and standardization across trading venues Futures Industry Association, [Drop Copy Recommendations](http://www.futuresindustry.org/downloads/FIA-Drop_Copy(FINAL).pdf) (September 2013), [http://www.futuresindustry.org/downloads/FIA-Drop\\_Copy\(FINAL\).pdf](http://www.futuresindustry.org/downloads/FIA-Drop_Copy(FINAL).pdf)



venues should offer drop copies that provide order information. Market participants should be permitted to choose to use this additional information to manage open orders and monitor for usual or unexpected activity.

The Commission also inquires about the potential advantages of increased standardization of real-time order, trade, and position reports for use by clearing firms and market participants. KCG also supports greater standardization of real-time trade drop copy reports. Standardization of the protocol, message type and fields would make it easier and less costly for firms to incorporate drop copies into their risk management systems.

#### 10. Trade cancellation or adjustment policies

The Commission states that it is exploring whether to require exchanges to develop more uniform and objective trade cancellation and adjustment policies. KCG believes that it is critical that each exchange have clear and objective policies regarding the time lines in which decisions on trade cancellation and adjustment policies will be made and the price bands outside of which trades will be cancelled or adjusted. This clarity is particularly critical to liquidity providers. Unless liquidity providers can be confident that already executed trades will not be broken, prudent risk management policies by those liquidity providers will not permit them to continue to provide liquidity. This unwillingness to provide liquidity may occur precisely during market conditions where liquidity is most needed.

Another benefit of exchange policies that are clear and objective, is that it should reduce the amount of time it takes exchanges to make error trade decisions. Moreover, objective standards allow market participants to determine themselves whether a particular trade will be cancelled or adjusted.

KCG believes that, in general, exchange policies should favor price adjustment of erroneous trades over cancellation of such trades. Adjustments of price, rather than cancellation of trades entirely, are more likely to encourage continued liquidity provision during an uncertain trading environment. To be clear, however, we believe that participants should not be permitted to decide whether to cancel or adjust a particular trade because it will add uncertainty. Instead, exchange rules,



prospectively, should set out the circumstances in which trades would be cancelled or adjusted.

Finally, while KCG believes strongly that each futures exchange should have clear and objective error trade policies, we believe it is unnecessary for all futures exchanges to have the same cancellation and adjustment policies. Requiring uniformity across exchanges that do not trade fungible instruments would require a loss of individual exchange flexibility that is not needed when products are traded on only one exchange. However, to the extent that swaps are traded on more than 1 SEF or DCM, KCG believes that all market trading the same swap should have the same error trade policy with respect to such instruments.

#### 11. System safeguards

The Commission asks for comment about a range of specific system safeguards for trading platforms, clearing firms, and market participants (including automated trading systems). Below KCG provides its views on the systems safeguards that can protect market participants and markets.

##### *a. Controls related to order placement*

- Cancel on disconnect. KCG believes that exchanges should all offer their members a “cancel on disconnect” risk management tool. This exchange-provided risk management tool is separate from, and complements, market participants’ risk control measures that cancel open orders when the risk of those orders is determined by the participant to be too high.
- Kill-switches. The CFTC asks whether it is effective to have kill switches across exchanges, trading and clearing firms, and DCOs. Each of these types of entities is concerned with and monitoring different risks.

In particular, at a clearing firm and DCO, a market participant’s margin and funding level risk is being monitored. A market participant may reach a funding threshold at a particular clearing firm or DCO, even though the



participant views its portfolio risk as low. These different perspectives on risk can occur because a participant's trading strategy include positions in instruments across markets and clearing platforms that offset the portfolio risk, but exceed the funding or credit risk set by a clearing firm or DCO for a portion of that portfolio. To address these risks, clearing firms and DCOs should establish clear and transparent notification procedures for market participants, where automated notifications are sent as risk limits are approached (e.g., at 50%, 75% and 90% of a risk limit).

Unlike clearing firms and DCOs, an exchange is most concerned that trading on its market is fair and orderly and is conducted in a manner that has integrity. Price collars and circuit breakers are better measures to mitigate these risks than are "kill switches."

However, exchanges can play a role in providing tools to market participants to aid them in reducing such market participants' risk. In particular, KCG would support trading platforms' providing participants with tools that would allow each participant to establish exposure limits and automatically block entry of any new orders upon breach of these limits.

The securities exchanges are in the process of implementing these types of "kill switch" tools. These tools will allow exchange members to establish their own exposure limits and update these limits intraday. The exchange would then send an alert as the exposure limit is approached and when it is breached.

KCG believes it is critical that the thresholds for any kill switches be exclusively established by market participants. This approach is the only way to ensure that risk reducing orders are not cancelled. Only a market participant can know its own open positions and total exposure across all markets and, thus, only that market participant can establish the thresholds for any one market.



Separately, market participants trading for their own account should monitor their overall portfolio risk on a group level. If the total risk of the portfolio exceeds pre-established thresholds, then firm systems should automatically send only risk reducing orders. Supervisors should also be enabled, when notified that thresholds are breached, to stop trading entirely. This type of “kill switch” supplements the myriad of other risk controls, discussed above. For this reason, market participants use and would be expected to be set “kill switches” at a level that is triggered infrequently, if ever. The myriad of other pre-trade risk controls, such as maximum loss thresholds and maximum open positions should, in most cases, prevent a participant from ever reaching a point where its “kill switch” thresholds are breached.

- Quote risk mitigation. KCG supports the development of exchange-based risk mitigation tools that assist liquidity providers in effectively managing their open order risk. These tools, which are commonly deployed by equity options markets, all options market makers with obligations to provide two-sided quotes to establish a maximum number of contracts in an options class executed against such market maker’s quotes over a specified interval of time. Once the market maker has traded more than this specified number of contracts, its quotes in the options class are cancelled. This tool allows market maker’s to limit its exposure during extreme market event and thus to be confident in continuing to provide quotations across all series in multiple options classes. KCG believes similar tools would be useful to electronic providers in the futures markets.

*b. Policies and procedures for the design, testing and supervision of ATSS*

All market participants have a strong interest in ensuring that their technical infrastructure and trading software work as intended. They need to be able to achieve these goals in an environment that encourages, and often requires, change and innovation. Changes need to be made, not only for competitive reasons, but also to respond to the behavior of other market participants and



new exchange, DCO and clearing firm requirements. Therefore, technological change must be not only accepted, but encouraged at every level of an organization. It is in this context, that KCG believes that it is important that systems and procedures not limit change or establish barriers that discourage it.

KCG strongly believes that market participants should have reasonable policies and procedures related to the design, testing, and supervision of ATSs, but cautions the Commission to avoid policies that would discourage or needlessly impede changes within a market participant's own systems because it could create the risk of deterring market participants from improving, adapting, and fixing software.

As a general matter, a market participant's procedures for development, testing, and deployment of new systems or changes to such systems should take into account the scope of the potential impact on other market participants. An ATS operated by an FCM that connects with its customers are interconnected. Changes to these types of interconnected systems may, in turn, require changes or testing by another participant, and development, testing, and deployment procedures should reflect this potential, including adequate notice and testing opportunities for others potentially impacted.

The Commission requests input on the necessary elements of an effective ATS testing regime. The discussion below provides more specifics on the way in which KCG thinks about managing the risks associated with systems development and changes management. KCG believes that development, testing, deployment, and monitoring should all be part of a continuous cycle within a firm. Each element reinforces the other and helps to create a stable and sustainable change cycle.

- Code Development and Testing. All firms should have well-defined, internal procedures and controls for the development, testing and deployment of trading software. Development and testing should reinforce each other; continuous building and testing gives developers a strong feedback loop. In the development cycle, there are some common



approaches to software testing that we believe are best practices all firms should follow:

Unit testing: These are tests of discrete, generally small, specific and functional, components of the system.

Regression testing: These are tests built to detect that any (usually unrelated) change has not had an unintended effect on the software.

Integration testing: These are system tests designed to test the interaction of applications with each other or outside parties. In this regard, KCG strongly supports the availability and use of test symbols that allow market participants to send orders in a production environment without executing real trades.

Good testing protocols increase the likelihood that errors are identified and corrected. There is not a specific testing discipline that is appropriate for all firms. Instead, the specific procedures will vary depending on the size, scope, trading strategies and business lines of that firm.<sup>2</sup> With regard to testing, the Commission asks whether exchanges should provide a test environment. KCG believes that exchange test environments would only improve the opportunities for market participants to test their own systems changes, which would reduce the likelihood of problems as software changes are migrated to the production environment.

Finally, a common element of effective testing and change management at a firm is that there is a culture that encourages making changes that improve the operation and reliability of a firm's systems and that these changes are easily testable. A testing process that creates too many frictions can discourage making changes that improve a system.

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<sup>2</sup> The Futures Industry Association's ("FIA") Principal Trading Group and European Principal Trading Association developed recommendations for software development and change management to assist trading firms in development their own procedures related to software development. See [www.futuresindustry.org/downloads/Software\\_Change\\_Management.pdf](http://www.futuresindustry.org/downloads/Software_Change_Management.pdf).





- Deployment. Appropriate deployment policies provide another line of defense in minimizing the scope of failures and correcting any failures before they can become widespread. No amount of systems testing will catch all problems. With this recognition, deployment policies should be designed to catch any problems undetected through testing in a way that minimizes the magnitude of an error:

Staged deployment: Deploy new software in phases, starting with implementation on a small scale. If there is success in this initial deployment, further deployments continue on a phased basis. At every stage of deployment, explicit rollback procedures should be made and well-understood by operations personnel.

Validation: At all stages in deployment, validation serves to evaluate whether a change is successful. Validation can be done on an automated or manual basis, or some combination of both. Automation in the validation process allows reviews and checks to be done in a repeatable and consistent way. People also have an important role in the validation process, but should focus on interpreting automated alerts.

*c. Monitoring and Alerts*

Once a change is deployed, unexpected errors can be exposed. Latent bugs, scaling issues, and second order effects of changes elsewhere in the environment can reveal themselves as errors in large, complex systems. These errors can arise within a single market participant's systems and within the larger market.

For these reasons, KCG believes a robust system includes several elements:

- Broad monitoring that identifies or highlights unusual or abnormal behaviors – so called “smoke signals;”
- Rich data to allow rapid investigation of potential issues identified by these “smoke signals;” and



- Once it is determined whether a “smoke signal” was an error or a false positive, create a more specific, discrete alert that incorporates this information and, thus, contributes to a more robust alert system.

The monitoring and alert process of a market participant will find issues that necessitate additional development work. KCG believes that this iterative cycle of development, testing, deployment, and monitoring is an essential part of an overall, layered risk management policy that helps insulate a market participant from significant system errors.

#### **B. Registration of Firms Operating ATSS**

The Commission requests comment on a registration requirement for firms operating ATSS and not otherwise registered with the Commission. The Commission also asks for comment on the firm characteristics, trading practices, or technologies that would trigger a registration requirement. KCG strongly supports well-regulated markets, which include a comprehensive audit trail for surveillance purposes and adherence by key market participants to high standards of integrity and risk control. These objectives may be achieved, in part, through a registration requirement. However, they can also be achieved through other means, such as exchange-level requirements on market participants.

KCG believes that further work needs to be done before responding to the Commission’s questions regarding registration, including considering the comments to the Concept Release. We recommend that the Commission evaluate the need for a registration requirement and appropriate triggering characteristics for such registration by:

- Evaluating the information it needs to carry out its responsibilities, but to which it does not current have access; and



- Determining the regulatory requirements or standards, such as risk controls, that market participants should be, but are not otherwise directly by exchange rules or indirectly as clients of FCMs, subject.

The appropriate scope of any registration requirement depends on such determination. Only after this analysis will the Commission know the market participants from which it needs information or to which additional regulatory requirements or standards need to be imposed.

As part of this evaluation, we ask the Commission to consider the information that is already available to it as part of current exchange audit trails. For example, each message that KCG sends to a futures exchange, and thus is part of the exchange's audit trail, includes a unique operator registration number. This registration number identifies the firm, head trader, traders or systems administered under the head trader, and contact information for the firm and head trader. In addition, the audit trail includes all detailed information about the order, such as whether the order was generated manually or by automated means, the type of message (e.g., new order, modify, cancel, execution, mass quote, quote request), and whether it is for a customer or firm account. Exchanges also require market participants to meet certain standards based on their activity and means of access. KCG asks the Commission to consider how any registration requirement it may implement would supplement – rather than duplicate – the requirements to which market participants are already subject under exchange rules.

Sincerely,

Elizabeth K. King  
Global Head of Regulatory Affairs