November 10, 2021

TO: OPRA Multicast Data Subscribers

SUBJECT: OPRA Pillar Failover Testing to Secondary Data Center: Saturday, December 4, 2021

Test Reminder

Failover Testing

As previously announced, SIAC will be conducting OPRA Pillar failover testing with the OPRA exchanges on Saturday, December 4, 2021, from 9:00 am - 11:00 am ET. All OPRA multicast Data Subscribers are invited to participate.

2021 SIP Failover/MWCB Saturday Testing Schedule
• Sat 8/21/21: SIP Failover / MWCB Level 1/2 Test #2 - complete
• Sat 12/4/21: SIP Failover / MWCB Level 1/2 Test #3

2022 SIP Failover/MWCB Saturday Testing Schedule
• Sat 3/26/22: SIP Failover / MWCB Level 1/2 Test #1
• Sat 6/11/22: SIP Failover / MWCB Level 1/2 Test #2
• Sat 9/10/22: MWCB Level 1/2/3 Test
• Sat 12/3/22: SIP Failover / MWCB Level 1/2 Test #3

Failover Test Details

The failover to the secondary data center can occur at any time during the 9:00 am - 11:00 am ET time window, to simulate an unexpected real-time event requiring a failover. Participating exchanges will continue to generate test data which will be disseminated over the production multicast lines sourced from the secondary data center.

Upon failover to the secondary data center OPRA Data Subscribers will see:
**OPRA Failover Messaging Description**

<table>
<thead>
<tr>
<th>Category H, Type K, Reset Multicast Line Sequence Number Control messages to 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Category H, Type P, Disaster Recovery Data Center Activation Control messages</td>
</tr>
<tr>
<td>Zero quotes for all securities</td>
</tr>
<tr>
<td>OPRA trades and quotes after the exchanges fail over</td>
</tr>
</tbody>
</table>

Pillar OPRA to failover to DR site and publish following messages:
1) Reset Block Sequence Number (Category H Type K) for each OPRA output line to reset to sequence number 1
2) Disaster Recovery Data Center Activation (Category H Type P) message
3) Zero Quotes (Quote messages with Zero Price and Size) on behalf of all participants across all symbols

**Test Registration**

Each OPRA Data Subscriber participating in the test should register at CTA-OPRA-Support@siac.com.

*Data Subscribers who receive OPRA from connectivity service providers other than ICE Global Network (IGN) must contact their connectivity service providers to coordinate testing.*

*The test plan will be provided in a separate notice.*

**Documentation**

Please reference the latest OPRA Output Multicast Specifications which may be obtained from www.opraplan.com.