ICCP Connectivity Testing Approach and ICCP Participant Guide

July 30, 2012
## Revision History

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<th>Author</th>
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1.0 Overview of ICCP Connectivity Testing

This document is intended for Southwest Power Pool (SPP) ICCP Participants and provides information for preparation and execution of ICCP Connectivity Testing. This document describes the objectives of the testing and describes the planned approach for meeting testing objectives. Each ICCP Participant will be contacted by SPP Customer Relations to schedule their testing. Tests will be verified by SPP and the testing member.

1.1 Objectives

ICCP Connectivity Testing is intended to validate that the Participant’s ICCP system communicates to all of SPP’s ICCP nodes. All Participants must modify and subsequently test their ICCP connections and data transfers.

1.2 Systems in Scope

- SPP ICCP
- ICCP Participant ICCP
- SPP Network – Firewall Rules
- Remote Network – Firewall Rules

1.3 Out of Scope

- ICCP Market Trials Testing
- EMS Market Trials Testing
- Establishing New ICCP remote connections
- Real-Time data for the SPP Balancing Authority
- AGC Integration

1.4 Environment Summary

Testing will occur in SPP’s Marketplace Production environment while SPP’s existing Production environment continues to handle day-to-day traffic. Once testing for all Participants is complete, SPP will cut over to the new ICCP architecture.

1.5 Documentation

ICCP Architecture Enhancement Member Impacting Project Overview can be found in the CWG ICCP Architecture Folder found here.
1.6 Test Schedule

Testing will be accomplished with a sub-stage approach as described in Section 2.0. The first sub-stage is scheduled to begin in September 2012, concluding in October 2012. Sub-stage two is to begin November 12, 2012 and conclude April 15, 2013. Each Participant will be contacted by SPP Customer Relations and scheduled to test by appointment during these timeframes.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Begin</th>
<th>End</th>
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<tbody>
<tr>
<td>Firewall/Network Testing</td>
<td>September</td>
<td>October 2012</td>
</tr>
<tr>
<td>Application/Dataflow Testing</td>
<td>November 2012</td>
<td>April 2013</td>
</tr>
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1.7 Assumptions

General Assumptions are noted as follows.

<table>
<thead>
<tr>
<th>ID</th>
<th>Description</th>
<th>Impact to the Test</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Remotes will be available and ready to test at scheduled time.</td>
<td>Delay in timeline.</td>
</tr>
<tr>
<td>2</td>
<td>SPP will have new architecture available for testing.</td>
<td>Test Phase will have to be rescheduled.</td>
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2.0 Test Approach

ICCP Connectivity Testing is made up the following sub-stages:
   1. Firewall and Network Testing
   2. Application and Data Flow Testing

Each sub-stage includes test preparation and test execution phases.

2.1 Firewall and Network Testing

Firewall and Network Testing verifies the configuration of Participant inbound and outbound firewall connectivity required for the communication between Participant ICCP servers and SPP ICCP servers.

2.1.1 Test Preparation

To prepare for Firewall and Network testing, a testing appointment must be scheduled for each Participant, AIEF forms must be received by Participants/returned to SPP, ICCP server configuration must be complete, and test scripts delivered to Participants from SPP. This section describes each test preparation activity.

Appointments:
ICCP liaisons will be contacted by SPP Customer Relations by 9/15/12 to schedule a testing appointment.

Association Information Exchange Forms (AIEF):
Upon scheduling a testing appointment, Participants will receive an encrypted AIEF. This form contains an IP address for which the Participant ICCP server must be configured.

Additionally, the AIEF must be completed, signed, and returned (encrypted) to SPP by 1 week prior to scheduled appointment.

Note: Due to the AIEF containing IP address information, it is critical that this form is encrypted.

ICCP Server Network and Firewall Configuration:
Participants must configure their ICCP server(s) inbound and outbound firewall connectivity in order for their ICCP servers to communicate to new SPP ICCP servers. This configuration is based on the information provided in the AIEF.

Test Scripts:
SPP will develop and provide test scripts to each Participant prior to scheduled appointment.
2.1.2 Test Execution

Firewall and Network Testing will be executed based on scheduled appointment time. During this time, each Participant will execute test scripts provided by SPP to verify successful configuration of ICCP servers.

2.2 Application and Dataflow Testing

Application and Dataflow testing verifies connectivity to all application connections and the accuracy of data transfers.

2.1.3 Test Preparation

To prepare for Application and Dataflow testing, Firewall and Network Testing must be successfully completed, testing appointment scheduled, and test scripts and test data received.

Appointments:
ICCP liaisons will be contacted by SPP Customer Relations by 11/1/12 to schedule a testing appointment.

Test Scripts and Test Data:
SPP will develop and provide test scripts and Test Data to each Participant prior to scheduled appointment.

2.1.4 Test Execution

Application and Dataflow Testing will be executed based on scheduled appointment time. During this time, each ICCP Participant will execute test scripts provided by SPP using test data provided by SPP to verify successful connectivity to applications and accurate data transfers.
3.0 Test Metrics

ICCP Connectivity Testing uses the test metrics described in this section.

3.1 Test Entry Criteria

**SPP Entry Criteria:**
- Completion of SPP ICCP Server configuration
- Deliver AIEF for each ICCP Participant
- Schedule Testing Appointment
- Complete/Publish Test Scripts and Test Data for each ICCP Participant

**ICCP Participant Entry Criteria:**
- Request testing appointment
- Configure ICCP Server Network and Firewall
- Complete/return AIEF
- Successfully complete Network and Firewall test execution (entry for Application and Dataflow Testing)

3.2 Test Exit Criteria

- 100% of Test scripts have been executed.
- 100% of Test scripts have been passed.
- 0 open Critical Defects associated to the environment associated with the test
- Fewer than five open High Defects associated to the environment associated with the test
- Test results must be reviewed and approved by SPP and signed-off by the member and verified by SPP. Upon completion of test execution, this sign-off consists of each ICCP Participant providing their signature to validate test results, scanning and sending via e-mail to SPP Customer Relations.

3.3 Test Metrics

The Program Test Team will use the following metrics to manage and report test execution. Test Metrics will are produced from SPP’s Test Management Tool.
- Assigned Tests Executed vs. Assigned Tests Planned (based on Appointment schedule)
- Assigned Tests Passed vs. Assigned Tests Planned
- Execution Plan % Complete (by ICCP Participant)
4.0 Communications Plan

This section describes communication methods in which Participants will interact throughout the ICCP Connectivity Testing Stage.

4.1 General Information and Inquiries

General inquiries should be sent to Marketplace_ICCP@spp.org. SPP will distribute information related to ICCP Connectivity Testing through the ICCP Architecture Liaison distribution list.

4.2 Appointment Scheduling

A Customer Relations Representative will contact participants to set testing appointments.

4.3 Issue Reporting

Defects discovered during ICCP Connectivity Testing will follow the established SPP Defect Management Process. An ICCP Participant may discover and report defects; however only SPP resources may log a defect in the SPP Issue Management Tool.

Any issues discovered outside of a testing appointment should be reported to Customer Relations via phone or e-mail.

4.4 Status Reporting

The SPP Project manager will report testing progress via monthly CWG status reports.