SECTION 7

GAMING SYSTEMS TESTING

A. GENERAL

A gaming system (system) is a system which captures required slot machine meters, drop and count information, and/or generates gaming forms, documents, and required statistical reports. A licensee must successfully test the gaming system and modules of the system (such as TITO, wireless handheld validation units, Electronic Promotional Credit System (EPCS), ticket redemption kiosks, pit, cage, and third party systems) before it can rely upon the system, or upon any information generated by the system, as it relates to the reporting of AGP. The licensee must test its system following the guidelines outlined later in this section. All testing requires notification to the Division.

Licensees are required to notify the Division, in writing via the Installation/Upgrade/Test Notification Form (notification form), of the intent to install, modify or upgrade any system a minimum of 30 days prior to the anticipated installation, testing and/or go-live date. The notification form is located on the Division's website. A notification form(s) must be submitted for installation, upgrade and testing of gaming systems, ticketing functionality, EPCS functionality, pit systems, cage systems, and third party systems if they capture any information as it relates to the reporting of AGP. The form must include the software version and any other versions (e.g., modules or functionality) that are a part of the host system. The licensee must include an electronic copy of the independent testing laboratory certification letter for the product, which is provided by the manufacturer, along with the notification form. Licensees are responsible for all system upgrades and system modifications, and for the accuracy and integrity of system data subsequent to any installation, upgrade or modification.

All required notifications and submittals in relation to system installation testing and/or upgrades must be submitted via email to the Division at: DOR_CCBHCasinos@state.co.us or DOR_CrippleCreekCasinos@state.co.us, as appropriate. Hereafter, any statements throughout this section which require the casino to contact the Division via email will use the appropriate email address stated above.

Licensees are required to complete the TITO device, ticket redemption kiosk, and cage/wireless handheld validation unit checklists anytime a slot machine, ticket redemption kiosk, or cage/wireless validation unit is added to the gaming floor or cage. Also, licensees must complete TITO device checklists any time slot machines are converted from one game or denomination to another game or denomination. These machines, ticket redemption kiosks and validation units must pass the checklist requirements prior to being placed into service. A checklist must be completed for every machine, ticket redemption kiosk and unit. Licensees must maintain these forms for Division review.

All testing and upgrades are subject to the document retention requirements mandated in CLGR 47.1-1607.

B. TESTING REQUIREMENTS FOR GAMING SYSTEMS (Slots, TITO, EPCS)

General

Most gaming systems are subject to two phases of testing: Phase I (independent lab certification) and Phase II (casino testing). Phase I is conducted prior to system installation. Phase II is performed by the licensee after the system has been tested by the lab and certified. System installations and upgrades cannot be performed until the approved testing laboratory has issued a Colorado Certification (certification) letter.

Upon completion of testing and certification by an independent certified testing lab, the test facility issues a certification letter to the system manufacturer and the Division. Licensees must review this letter, a copy of which may be obtained from the system manufacturer, to ascertain the significance of any inherent weaknesses and limitations in the system which were known prior to or identified during lab testing. Licensees must include any system limitations in the notification form and any report, reconciliation, or processes that do not meet the ICMP requirements. Additionally, licensees must implement compensating controls for all disclosed and/or subsequently identified system limitations. It is the licensee's responsibility to understand what the system can and cannot do.

It is important to note that Phase II testing is performed in a live environment. A live environment is not replicated in its entirety in a lab. The independent testing facility performs specified test procedures; however, due to the multitude of variables inherent in any system, the test facility may not test all variables. Many variables are specific to the age of the slot machines found in a casino and/or to the manner in which the licensee configures and uses the system. The certification letter issued by the lab certifies the system passes the lab's tests. It should not be construed to mean that the system meets all of the Division's internal control and/or statistical reporting requirements.

Once a system has been lab certified and subsequently installed in the casino, the licensee must perform Phase II testing of the system.

System test results must be maintained by the licensee and are subject to the document retention requirements mandated in CLGR 47.1-1607. These documents must be made available to the Division upon request.

Testing Objectives

The licensee's test of its system is intended to meet four main objectives:

1. The system has met the specified accuracy requirements;

2. Controls over the system are effective (e.g., physical and logical security controls, and application controls);
3. An adequate audit trail exists;
4. All required statistical reports and supporting reports are accurate, and may be used to support the revenue reporting required by the Division (e.g., tax returns); and
5. The system is configured and communicating correctly.

Testing Requirements

System meter incrementation must be compared to soft (machine) meter incrementation to ensure that system meters are incrementing at the same rate as the soft meters.

System statistical reports and gaming forms reflecting system information must be compared to the Meter Comparison Reports (MCR), supporting reports and supporting forms reflecting manually captured information to verify the accuracy of the system information.

Testing requirements are as follows:

1. A testing project plan must be submitted, reviewed and approved by the Division at least 30 days prior to the start of testing. This plan must contain sufficient detail and must include:
    a. testing procedures for slot machines, ticket redemption kiosks, cage/wireless validation units and interfaces
    b. number of drops necessary to pass all meters,
    c. the manner in which test data and results will be documented,
    d. error correction procedures,
    e. a process for verifying the mathematical accuracy of appropriate reports (e.g., MCR, statistical reports, supporting reports, etc.) will be verified,
    f. a process for the ensuring the validity, accuracy and formatting of <u>all</u> data reflected on the statistical reports required by the ICMP. This process must ensure that the required statistical reports can be generated in hard copy format as well as in an electronic database format (e.g., spreadsheet, relational database, etc.), and the type of database format,
    g. the process by which the licensee will indicate that a reconciliation of the statistical reports, MCR and supporting reports will be performed, and,
    h. a description of the reconciliation process for MTD and YTD information on the reports.

2. Soft meter readings must be recorded using the Soft Meter Reading Summary form found in the ICMP. The system meter readings must be captured upon installation of the product for all machines and for each subsequent drop until the machine meters pass testing. Once a signed System Testing Acknowledgement Letter (acknowledgement letter) and documents have been submitted to the Division, soft meter readings must be recorded at the end of the month in conjunction with the last drop of the month.

3. For *each drop* in the test period, licensees must manually read and record soft meter readings at the machine for the required meters. The licensee must also generate and save system meter readings reports. Licensees must compare the soft meters to the equivalent system meter. It is important to remember that older versions of slot machines may have different meters than the meters presently required by the Division. It is the licensee's responsibility to ensure the appropriate meters are used for each machine for ICMP reporting requirements.

4. A MCR must be completed which compares applicable soft meter incrementation to system meter incrementation for all the following required meters for each machine:
   - coin in,
   - coin out,
   - voucher in,
   - voucher out,
   - coin drop,
   - bill in,
   - cashable electronic promotion in (CEP-In),
   - non-cashable electronic promotion in (NCEP-In),
   - non-cashable electronic promotion out (NCEP-Out),
   - machine paid progressive payout,
   - attendant paid jackpots,
   - attendant paid cancelled credits,
   - attendant paid progressive payout*,
   - machine paid external bonus payout (if applicable), and,
   - attendant paid external bonus payout (if applicable).

*Attendant paid progressive payout meter testing does not follow the same testing requirement. A comparison of soft meter incrementation to system meter incrementation for a drop period is required for the attendant paid progressive payout meter the first time the progressive(s) hits and requires an attendant payout. The licensee is to submit the meter incrementation documentation to the Division within one week after the progressive win.

NOTE: For devices that are ticket enabled and do not use a hopper, coin out meter readings are not required. Additionally, a MCR must be completed for month end for the same time frame as the MTD column on the statistical reports.

5. Meter comparisons must be performed every drop period until 99% accuracy by meter by machine is attained. Voucher in, voucher out, CEP-In, NCEP-In and NCEP-Out meters must be 100% accurate by meter and by machine. Explanations that substantiate any variances must be included in the testing documentation. Differences between soft and system meter incrementation of 1% or more, by machine, must be identified. Zero meter incrementation is a failed machine. If the variance was caused by a *clerical* error, it must be corrected and supported by the appropriate documentation. If the variance was caused by a *non-clerical* error, it must be investigated and the results of the investigation

documented. The related machine/meter must continue to be tested until 99% accuracy is attained. The voucher-in, voucher-out, CEP-In, NCEP-In, and NCEP-Out meters must continue to be tested until 100% accuracy is attained. The variance explanation must state if the soft or system meter incrementation is accurate.

6. Licensees **may only change original soft meter readings or system meter incrementation** if it can be justified with adequate support.. An explanation of the adjustment and a copy of the system report (if applicable) must be included with the testing documentation.

7. Changes to any meter reading(s) (soft and/or system), must be documented and must include:
   a. the procedures used to investigate the cause of the errant meter reading,
   b. results of the investigation, and
   c. detailed action taken to correct or monitor the meter including supporting system reports (i.e., audit trail and/or exception reports) that support any adjustments made, if applicable.

8. Record soft meters and capture system meters for each drop period, the last drop of the testing month and the last drop of the previous month or whenever testing began (if after the first of the month). System reports are generated using system meters captured through the gaming system and actual information reported by the count team, jackpot/fill slips and tickets, and downloaded and uploaded credits processed through the gaming system.

9. Prepare system generated statistical reports. The system reports must be prepared on a drop-to-drop basis and must include MTD and YTD information. All reports must ensure that MTD and YTD totals are properly calculated and accurate data rolls from drop to drop. A reconciliation of the following reports must be completed. Evidence of the reconciliation must be indicated. The reconciliations must be prepared and reviewed, and variances explained as stated in item 6 above:
   a. The meter column of all applicable statistical reports must be compared to the MCR meter delta for each machine, each meter, every drop period; and the last drop of the month for the MTD meter column for each machine, and meter. Any variances must be explained. Further testing may be necessary as a result of the variance investigation(s).
   b. The amounts from the actual count documentation from the count team, the physical jackpot/fill slips, the ticket reports and the credits downloaded/uploaded activity must be compared to the actual amounts reflected on the system-generated statistical reports for each machine, each meter, and for every drop period.
   c. A reconciliation of the MTD and YTD rollover from one drop to the next, including the last drop of the month and the first drop of the next month, must be performed.

d. A reconciliation of the flow of the applicable supporting reports to the applicable statistical reports through to the MSRS must be performed. Any discrepancies must be explained.

10. Continue testing until all the accuracy requirements are met.

11. If a weigh scale interface, currency counter interface, or ticket counter interface is utilized, the licensee must perform testing and document the results to ensure that the interface is working adequately and the amounts are transferring into the gaming system accurately. Additionally, the licensee must have a written contingency plan that addresses the manner of reconstructing drop/count data in the event the interface malfunctions or fails. This plan must include procedures for the reconciliation of the interface amounts to the applicable system reports.

12. The RAMP log must be used to document ALL issues identified during testing. See the Gaming Systems section for an explanation of the RAMP log. The RAMP log must be sent via email to the Division on a weekly basis at the beginning of gaming testing until the completion of the test and submittal of the acknowledgment letter. The licensee must always maintain the RAMP log; however, after the submission of the acknowledgement letter the licensee no longer needs email it to the Division on a weekly basis.

13. Slot (coin-in, coin-out, drop (coin & currency), jackpot, fills, and cancelled credits meters) and TITO testing can be performed separately or concurrently. EPCS testing cannot be performed concurrently with slot or TITO testing.

Approval of the System

It is the licensee's responsibility to review the MCRs for all meters and the related documentation to verify the reports indicate a 99% accuracy rate for at least 95% of machines tested, (100% accuracy for TITO and EPCS) including explanations that substantiate any variances for voucher or EPCS meters if those modules are utilized. Additionally, it is the licensee's responsibility to ensure the statistical reports prepared using system information are 100% accurate. Once the licensee has determined it has met the testing and accuracy requirements, and submitted the signed acknowledgment letter, it is permitted to only take soft meters on a month end basis and the licensee may discontinue generating MCRs. The licensee must continue to record and use soft meter readings each drop period until the acknowledgment letter is submitted. For those machines/meters that did not successfully pass testing, the licensee is required to continue comparing system to soft meter incrementation, evidenced on a MCR, for each drop period and use the correct meter values for preparing the statistical reports.

Licensees are required to manually read and record required soft meters at the machine for the last drop of the month, for every machine. Licensees must continue to record the month end meter readings until the Division grants approval to rely on the system.

System approval is contingent upon the Division's review of the licensee's system test results and verification that at least 95% of tested machines are 99% accurate (100% for TITO & EPCS). This includes explanations that substantiate any variances; the statistical reports are 100% accurate; and the licensee has adequate controls in place. Upon successful completion of the Division's review of this testing, the Division will issue a written approval letter to the licensee. At that point, the licensee will be allowed to rely upon the system.

Licensees must continue to rely on soft meter information for failed machines/meters until these machines successfully pass testing. Furthermore, anytime the gaming system fails to communicate accurate meter values, licensees must revert to the manual capture and recording of soft meters and use the soft meter readings in the generation of the statistical reports.

Insufficient Testing

The licensee is ultimately responsible for the proper reporting of statistical information and if the Division determines that the licensee did not conduct sufficient testing, relied on system data prior to successful completion of its test documented by the acknowledgment letter, or improperly reported information on the gaming tax return, the licensee accepts the possibility of tax adjustments and/or administrative sanctions. The Division may also require the licensee to conduct additional testing, which may include the manual capture of soft meters and manual preparation of statistical reports using the soft meters. Examples of insufficient testing include, but are not limited to, failure to provide all required information and documents by specified deadlines, failure to maintain documentation, and failure to perform all required test procedures.

Submitting Test Results

Once the licensee determines at least 95% of tested machines have met the 99% accuracy requirement (100% accuracy for TITO or EPCS), the licensee must submit its test results to the Division. This includes:

- A written narrative documenting the results of the test, including procedures used to ensure the accuracy of the MCRs and system statistical reports. The written narrative must include:
    - a description of the reconciliation between the MCRs, actual documentation and the statistical reports,
    - number of machines tested,
    - number of machines that passed testing,
    - list of machines that did not pass testing. The licensee must state if these machines will not be able to communicate with the system; therefore, the casino will manually capture the information and update the gaming system. The written narrative must include what the casino is going to do to ensure that all reports are accurate.

- The acknowledgement letter, signed by the licensee's Chief Executive Officer and the Chief Financial Officer, stating that the licensee has met the required testing criteria. The letter is located on the Division's website.

- The MCRs for all drops of the test period including the last drop of the month and the first drop of the next month.

- Evidence of the following reconciliations:
    - A reconciliation of the meter column on the applicable statistical reports to the corresponding MCR for every machine and meter tested for each drop period.
    - A reconciliation of the "actual" column to the corresponding supporting reports for every machine and meter tested for each drop period.
    - A reconciliation of the MTD meter column on the applicable month end statistical reports to the MTD MCR for every machine and meter tested.
    - A spreadsheet supporting the accuracy of the current, MTD and YTD rollover amounts from one drop to the next for each drop period. This must include month end and the first drop of the next month.

- Soft meter readings and system meter readings for each drop in the test period including the initial readings, and end of month-end readings. In order to prepare an accurate MTD MCR the licensee must include the meter readings that support the MTD information.

- The results of the currency/ticket interface testing in the count room.

- Division checklists must be completed. The checklists address issues surrounding system security, system usage policies, training, contingency plans, data integrity controls, etc., and they must be completed in their entirety. Division Checklists will be emailed to the licensee's point of contact at the start of the licensee's testing.

- The number of machines included in the system testing. A schedule reconciling the number of machines tested to the number of machines reported on the monthly gaming tax return.

- Any system limitations or issues that impact the ICMP accounting section requirements, and the licensee's procedures regarding these issues.

- Any other documentation and information required by the Division or stated in the acknowledgement letter.

C. CONVERTING FROM ONE GAMING SYSTEM TO ANOTHER

If the licensee is changing over from one gaming system to another, the licensee must submit, at least 30 days in advance, the notification form found on the Division's website along with a

detailed test plan. The plan must be submitted, reviewed and approved by the Division prior to the start of testing. Additionally, the casino must close for the changeover and remain closed until the following requirements have been met and the Division has received written notification from the licensee that the casino is ready to open for patron play.

Minimum requirements for shutting down of the old system:

- Final drop performed.
- Audit of all statistical and supporting documentation and reports.
- Completion of variance investigations and system adjustments, if applicable.
- Final meter readings printed and/or saved.
- Any additional Division requirements.

Minimum requirements for new system installation:

- If converting data from the old system to the new system, the licensee and the manufacturer must ensure the accuracy of the data transferred into the new system.
- The licensee must document a reconciliation of the final meter readings of the old system to the new system meter readings.
- The licensee must provide documented evidence that the MTD and YTD information from the old system's statistical reports reconciles to the new system's statistical reports.
- The licensee must complete the required system log must be completed for any and all system issues during this process.
- Machine moves may not occur until the licensee has performed a minimum of two drops of the entire premises and the above requirements have been met.
- Any additional information/documents that the Division may require.

Once the casino is ready to re-open for patron play, the licensee must follow its approved test plan and follow the guidelines addressed in subsection B above.

D. TESTING REQUIREMENTS FOR PIT SYSTEMS

Licensees are required to notify the Division, in writing via the notification form, upon intent to use a pit system. The notification form must list the elements of the pit system that will be used by the licensee. For example: Opener/Closer Slips, Fill/Credit Slips, Master Game Summary Report, etc. This notice must be submitted a minimum of 30 days prior to the anticipated installation.

Prior to relying on a pit system, the licensee must test the system to ensure the system is properly communicating, functioning correctly and the information provided by the system is accurate and reliable. Testing of the system includes the following:

1. Running the system parallel to the manual process for three consecutive days, and

2. Reconciling the system generated forms to the manually generated forms for accuracy.

Once the licensee verifies the system generated information accurately reconciles, in detail and in total, to the manually generated documentation for three consecutive days, the licensee may rely on the pit system.

The licensee must ensure only approved users have access to the pit system at appropriate levels to be consistent with a manual system.

In the event the pit system goes down, the licensee must revert back to the manual process.

E. TESTING REQUIREMENTS FOR CAGE SYSTEMS

Licensees are required to notify the Division, in writing on the required notification form, upon intent to use an on-line or off-line cage system. An on-line cage system is an integrated module of a gaming system. An off-line cage system is independent of and does not directly interface with the gaming system. The notification form must list the elements of the cage system that will be used by the licensee. For example: Daily Cash Summary, Miscellaneous Receipts, on-line cage system, off-line cage system, etc.

Prior to relying on a cage system, the licensee must test the system to ensure the system is properly communicating, functioning correctly and the information provided by the system is accurate and reliable. Testing of the system includes the following:

a. Running the system parallel to the manual process for three consecutive days, and

b. Reconciling the system generated slips/forms to the manually generated slips/forms for accuracy.

Once the licensee verifies the system-generated slips/forms agree 100% to the manually generated slips for three consecutive days, the licensee can rely on the cage system.

If any slips need to be voided in the system, a cage supervisor or gaming manager is required to authorize the void in the system. If the system does not print or generate a “void” slip, the slip must be voided using the void procedures detailed in the General Section.

Once the licensee verifies the system generated information accurately reconciles, in detail and in total, to the manually generated documentation for three consecutive days, the licensee may rely on the cage system.

The licensee must ensure only approved users have access to the cage system at appropriate levels to be consistent with a manual system.

In the event the cage system goes down, the licensee must revert back to the manual process.

F. TESTING REQUIREMENTS FOR WIRELESS HANDHELD VALIDATION UNITS

A cage/wireless handheld validation unit checklist for each validation device must be completed and maintained. The checklist is available on the Division's website at www.colorado.gov/revenue/gaming.

The licensee must ensure that the validation device has been tested by the independent test lab and certified for use with the licensee's specific gaming system. The licensee must ensure that its device has been certified to the gaming system version.

The licensee must submit a letter in conjunction with the notification form, outlining any limitations indicated on the certification letter or identified by the licensee, and an explanation as to how the licensee will address or compensate for the limitations. If no limitations are indicated or identified, the letter should state so.

The tickets used to test each of the validation units must be traced to their corresponding Tickets Redeemed by Cashier Report Produced by Cashier report. Any variances must be explained and a new test performed. The checklist, copies of the tickets and the cashier report must be maintained by the licensee as evidence of the testing that was performed.

Please see the Gaming Systems ICMP section for wireless ongoing requirements.

G. TESTING REQUIREMENTS FOR JACKPOT PAYOUT/ FILL SLIP TESTING

If the gaming system generates the required meter values on the jackpot payout/fill slips, and the licensee wants to rely upon those values, some limited test procedures must be performed to ensure the accuracy of the meters prior to relying on the data.

Test procedures must be determined, performed, and documented by the licensee to provide assurance of the accuracy of the meters printed on the slips. If the licensee chooses to rely upon the validity of the meters printed on the slips, the test and results must be documented to include the machine number, type of machine, denomination, the soft meter value, system meter value, any difference between the soft and system meter incrementation, and explanations for any differences in any of the values being compared.

When the licensee has validated the required meter values on the bottom of the jackpot/fill slips are accurate for two drop periods, the licensee can rely on these meter values.

FORMS

Following is a description of the forms discussed in this section. In some cases, sample forms are provided and all of the forms are located on the Division's website. **It is the licensee's responsibility to ensure that all required forms contain the minimum required information and meet ICMP requirements.** See the General section for further clarification.

Installation/Upgrade/Test Notification (notification form)

Licensees are required to complete and notify the Division, in writing, of the intent to install, modify or upgrade any system a minimum of 30 days prior to the anticipated installation, testing and/or go-live date. The system notification form is located on the Division's website.

TITO Device Checklist

Licensees are required to complete the TITO device checklist for all TITO devices. These machines must be tested thoroughly prior to being placed into service. Licensees must maintain these forms for Division review. Any problems must be addressed prior to a TITO device being placed into service. Any issues must be logged on the RAMP Log. A copy of the TITO device checklist is located on the Division's website.

Ticket Redemption Kiosk Checklist

Licensees are required to complete the ticket redemption kiosk checklist for all TITO devices. Kiosks must be tested thoroughly prior to being placed into service. Licensees must maintain these forms for Division review. Any problems must be addressed prior to a ticket redemption kiosk being placed into service. Any issues must be logged on the RAMP Log. A copy of the ticket redemption kiosk checklist is located on the Division's website.

Cage/Wireless Handheld Validation Unit Checklist

Licensees are required to complete the Cage/Wireless Validation Unit checklist for all Cage Validation Units and Wireless Handheld Validation Units. These units must be tested thoroughly prior to being placed into service. Licensees must maintain these forms for Division review. Any problems must be addressed prior to a validation unit being placed into service. Any issues must be logged on the RAMP Log. A copy of the cage/wireless checklist is located on the Division's website.

Meter Comparison Report (MCR)

A MCR must be prepared for each drop period to document the comparison of soft meter incrementation to system meter incrementation for all required meters. A separate MCR must be prepared for each drop period, and for each meter. The header of the report must include the report name, casino name, beginning and ending dates of the entire test period, and the meter tested. The report must clearly identify meter variances by machine and is used by the licensee during the test period to investigate and resolve these variances. This report is also used to document a licensee's annual system test.

RAMP (Remote Access, Maintenance and Problems) Log

Licensees are required to document all system problems, remote access to the system, any system maintenance performed as well as any system-related issues and/or problems encountered during, and

subsequent to, the test period. If, for example, a system vendor (or other authorized user) is on the licensee's premises and logs onto the system from the licensee's terminal to perform system maintenance and/or to perform some "fix", this log is used to document this action. During the test period and until the submittal of the acknowledgment letter, this log must be emailed **to the Division at: DOR_CCBHCasinos@state.co.us or DOR_CrippleCreekCasinos@state.co.us, as appropriate** on a weekly basis.

System Testing Acknowledgement Letter (acknowledgement letter)

Licensees are required to complete and sign the System Testing Acknowledgement Letter upon completion of the required system testing. The required documentation, as stated in the System Testing Acknowledgement must accompany the signed acknowledgement letter. This letter documents the licensee's test results and compliance with the test plan. A copy of the acknowledgement letter is located on the Division's website.