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Governor

STATE OF NEVADA

## GAMING CONTROL BOARD

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## NOTICE TO LICENSEES

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Notice # 2012-51

Issuing Division: Technology

**DATE:** May 24, 2012  
**TO:** All Licensed Manufacturers and Other Interested Persons  
**FROM:** Mark A. Lipparelli, Chairman  
**SUBJECT:** Technology Division Technical Policies

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The Technology Division creates technical policies from time to time providing clarification and guidance in areas not explicitly covered in the current Technical Standards or Regulations. It is the intent of the Board to keep the industry up to date with any new technical policies as they are created, changed or removed. Changes in this document can be found in Regulation 14.020(2)(b) and Technical Standard 4.020.

The enclosed document is a list of all current technical policies as they pertain to the operation of gaming devices and gaming associated equipment. As policies are created, removed or changed, they will be posted as Industry Notices and on the State Gaming Control Board Website. We encourage interested parties to visit our website to stay current.

Please contact Technology Division Lab Manager Jason Elison at (702) 486-3932 or Chief Jim Barbee at (702) 486-2240 with any questions regarding these policies.

Enclosure: Current Technical Policies

**Technical Policies of the Nevada Gaming Control Board and Gaming Commission**  
**as They Relate to Gaming Devices and Gaming Associated Equipment**  
**Updated 5-24-2012**

**Regulation 5.110(5)**

Gaming devices or associated equipment that allow for the use of progressive functionality must be equipped with a mechanism to manually enter a progressive amount in the event of a memory loss or other loss of the progressive value. This functionality must require the use of restricted personnel or supervisory access in order to set the progressive value.

**Regulation 14.040**

The following policies apply to games that incorporate agility, dexterity, or any other physical skill:

1. The manual/physical skill component shall only affect the amount of the bonus award and shall not affect the amount of the base game payouts.
2. The combined base game payouts plus bonus awards, assuming no skill is used in the bonus round, shall satisfy the minimum payout required by NGC Regulation 14.040(1).
3. If a patron achieves the bonus award, there must be some bonus payout to the patron.
4. It shall be noted on the exterior of the gaming device that a player's skill will affect the amount of the bonus awarded.
5. The gaming device must be able to maintain and display information used to determine the contribution of the manual/physical skill component to the overall payback of the game.
6. Gaming devices that utilize peripherals, or other equipment to interact with the gaming device for the purposes of skill based gaming must employ a mechanism to detect any failure of that peripheral/equipment, and prevent gaming activity if a failure is detected.

**Regulation 14.040(2)**

This regulation sets forth the requirement that all gaming devices must use a random selection process to determine the game outcome. The random selection process includes all processes between the time a game is initiated and the outcome is displayed to the patron. Typically this process includes a request for random numbers, the modification of the random numbers into usable values, the mapping of the usable values to game elements, the evaluation of the selected game elements and finally the display of the outcome to the patron. The following policies further clarify this

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requirement. Any software random number generator (RNG) used as part of the random selection process must:

1. Not use static seeds upon initialization. The RNG must be seeded using a sufficiently unpredictable value. If a value representing a time or date is used, the value must both be represented in milliseconds or smaller, and must not be viewable anywhere on the gaming device;
2. Continue to cycle when not in use. The RNG must cycle at a minimum of 100Hz (100 calls per second on average);
3. Only produce outcomes for a single game.
4. Gaming devices such as system based games or Interactive Gaming Systems that offer multiple simultaneous games or tables must use a separate RNG and separate initial seed for each RNG; and
5. Games that offer RNGs for purposes other than determination of game outcome (e.g. Keno Quick Pick) must use a separate RNG that that used as part of the game random selection process.

Gaming devices that use a software random number generator (RNG) as part of the random selection process to produce a predetermined set of outcomes (i.e. a shuffled deck of cards) must:

1. Sufficiently encrypt or otherwise protect this information from being accessible to anyone. In addition, video poker games must not determine replacement cards prior to the player selecting hold cards and initiating a draw.
2. Prevent the use of this information for the purposes of tracking deck composition and "count" that would otherwise result in a violation of NRS 465.075.

Gaming devices that use a hardware random number generator (RNG) as part of the random selection process must be able to do the following:

1. Determine if the RNG meets a 95 percent confidence limit using a chi-squared test for goodness of fit. Calculation must be made based on the following criteria:
  - a. 10,000 outcomes have been generated;
  - b. A new calculation must be made for each 10,000 subsequent outcomes;
  - c. The calculation must consider only the most recent 10,000 outcomes.
2. Display a visual notification, clearable by an attendant, if at any time the wheel has failed the chi-squared test for goodness of fit.
3. Disable play in the event that the wheel has failed to meet to the 95 percent confidence limit goodness of fit test for two consecutive testing periods. Attendant interaction is required before enabling the table for play.

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4. Provide a report that shows the results of the last chi-squared test as well as the previous 9 chi-squared tests. The report must contain the following:
  - a. The time and date that the test was performed;
  - b. The table ID or any comparable identifier;
  - c. The number of games used to perform the test; and
  - d. The outcome of the test.

**Regulation 14.040(2)(a)**

This provision requires that each possible combination must be available at the beginning of each play. This provision is intended to ensure that each player has the same opportunity to obtain all winning or losing combinations. If a symbol or element is displayed it must be available for random selection and inclusion into a game outcome. A reel symbol must not have a weight of zero.

**Regulation 14.040(2)(b)**

Gaming devices which do not utilize elements commonly used in live games may alter the probability of game elements appearing in a winning or losing combination in a bonus game if it is clear to the patron that a change has been made. In the case of a video reel game where reel element weightings are changed due to free or bonus spins the gaming device must explicitly state in the help or award screens that different reels are used during the free or bonus spins, and do at least one of the following (this is a change from prior policy where both of the following was required):

1. Alter the appearance of the reels (i.e. change the appearance of the symbol or change the background color of the reel strip); or
2. Explicitly state on the game screen that "bonus reels are in play".

In the case where multiple video reel games are offered simultaneously the gaming device must:

1. Uniquely identify each game;
2. Indicate in the help or award screens which games use different reels.

**Regulation 14.040(3)**

Gaming devices that utilize multiple paylines must show players all winning paylines that were achieved in a game outcome and must give the player a reasonable amount of time to understand the outcome and pay for each line before additional games can be initiated. Gaming devices may allow the player to interact with the gaming device to skip or speed up the display of this information.

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Gaming devices that show the result of a patron selection process during a bonus or other multi-event game may not display a non-winning outcome that the patron had no opportunity to receive through the patron selection process.

#### **Technical Standard 1.050 Logging for System Games**

The Technical Standards for system based and system supported games include several logging requirements for certain types of actions conducted on these systems. These logging requirements require that certain information be logged on the server component and remotely on a logging device (remote logger). The following information summarizes the requirements for the remote logger:

1. The remote logger must reside outside the secure area which houses the server and system components of a system based or system supported game and may not be accessible to the individual accessing the secure area. For the purpose of this policy "outside the secure area" is defined as a separate room or a physically separated area where access is restricted to all individuals that are responsible for controlling access to the server or system components of the system based or system supported game.
2. The information must be stored on the remote logger for a minimum of 90 days. The logger must not simply rely on the size of the log for compliance with this requirement.
3. Any of the actions that are required to be recorded on the remote logger may not be initiated if the logger is not available to record such action. However, if the remote logger is unavailable it is acceptable to allow logical access to the system based or system supported game for the purposes of troubleshooting. Any logical access to the system must be properly reported to the remote logger once it again becomes available.
4. If an action required to be logged has already been initiated and the remote logger is not available to record additional information about the action the on-going action may be completed. No additional action may be initiated if a completed action has not been logged on the remote logger. For example, if the initiation of a game download has been reported to the remote logger and during the download the remote logger becomes unavailable the download may complete (verification and authentication are considered part of the download process). The game may not be made available to the conventional gaming

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device or client until the verification and authentication information has been reported to the remote logger.

System based and system supported games are not required to support a remote logging device if the information required of the remote logger is capable of being rendered unalterable on the server or system part of the gaming device.

### **Technical Standard 1.080 (2)**

Gaming device software that incorporates functionality for the purposes of diagnostics, debugging, or other non-production uses must employ a mechanism to detect that the gaming device is being operated in a non-production manner. Upon detection, the gaming device must prominently display a notification on the primary display of the gaming device to indicate that the gaming device is currently in a non-production mode.

### **Technical Standard 1.080(7)**

“...game outcome (or representative equivalent), ...” for multi-line video reel gaming devices and multi-line spinning reel devices which represent game outcome on a video display must include the following information:

1. Winning payline(s);
2. Amount won per winning payline.

### **Technical Standard 1.080(8)**

Gaming devices must prevent the validation number of all slot machine wagering instruments issued by the gaming device from being displayed in its entirety in any operator or attendant mode of the gaming device.

### **Technical Standard 1.090(3)**

To further clarify the text in Technical Standard 1.090 subsection 3, the following policies will apply to all games offering bonus or extended features as part of community play that involves two or more patrons and where the delay of an offered selection or game initiation will directly impact the ability for other patrons to continue or initiate their bonus or extended feature:

1. Community play bonus or extended features that involve a strategy (i.e. Blackjack) or player skill must provide the player with at least 20 seconds to make their decision prior to automatically making a selection for the player. Automatic selections made by the gaming device must employ a reasonable strategy.

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2. Community play bonus or extended features that do not involve a strategy or player skill (i.e. Pick 1 of 5 items) must provide the player with at least 10 seconds to make their decision prior to automatically making a selection for the player. Automatic selections made by the gaming device must make a random selection.

**Technical Standard 1.100**

Gaming devices that utilize physical or virtual reel strips must arrange the weightings of the reel symbols such that the combined weighting of non winning symbols adjacent to a top award symbol must not exceed a ratio of 12:1.

**Technical Standard 1.140**

“Door closed” conditions referenced in Technical Standard 1.070(1)(c) are considered an error condition that would prevent a system based or system supported gaming device from changing active game content on a conventional gaming device. Gaming devices may employ an override mechanism to prevent “door closed” conditions from preventing this change, as long as that mechanism requires manual intervention.

**Technical Standard 2.010**

Gaming devices that utilize a bonus or feature, such that players are able to achieve a status, rank or other similar standing that differentiates themselves from other players, must maintain an equivalent expected return regardless of status or rank.

**Technical Standard 2.040**

Gaming device controllers or top boxes that communicate with conventional gaming devices and award mystery, progressive, or other types of bonus awards such that the awards are calculated into the theoretical payback percentage of the conventional gaming device must be able to report the contribution of the controller to the connected conventional gaming device.

Conventional gaming devices that communicate with gaming device controllers or top boxes and receive mystery, progressive, or other types of bonus awards such that the award is calculated into the theoretical payback percentage of the conventional gaming device must be able to do the following:

1. Prevent any play if communication to the controller is disrupted or lost.
2. Report the combined theoretical payback percentage of the conventional gaming device and the controller to an on-line slot metering system.

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3. Meter all awards that are calculated into the theoretical payback percentage of the conventional gaming device as standard payable win (Coin Out).

**Technical Standard 2.060**

Gaming devices that support the display of game rules and help information in multiple languages must have the option for a player to display this information in English. All game rules and help information between languages must be consistent.

Gaming devices must not use language that suggests the probability of a particular outcome is more likely to happen than its actual probability. Examples include the use of the terms "Due", "Overdue", "Ready", and "Ready to Hit".

**Technical Standard 3.150(4) - User Authentication**

Gaming devices or associated equipment that utilize wagering accounts and permit patrons to withdrawal funds without interacting with the operator must authenticate users using multifactor authentication. For wagering accounts where users have to interact with operator personnel to obtain cash from their wagering account, strong authentication is acceptable.

**Technical Standard 4.010**

The following policies apply to mobile gaming systems that employ a mechanism of verifying that the mobile communications devices are being operated by an authorized person:

1. All systems must support and employ strong user authentication.
2. Strong user authentication shall require that a minimum of two factors of authentication are verified. Factors of authentication may include the following.
  - a. A password or PIN associated with a username;
  - b. A physical token;
  - c. A biometric measurement; or
  - d. Other factors approved by the Chairman.

\*Username is not considered a factor for authentication.

The following policies apply to mobile gaming systems that employ a mechanism of verifying that the mobile communications device are being operated by an authorized person:

1. Users must be verified at random time increments not to exceed 30 minutes with at least one factor of authentication.
2. A session is considered closed under the following conditions:



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- a. User authentication has not been successfully completed within a 30 minute timeframe;
- b. No game activity has occurred within 5 minutes;
- c. The mobile unit has been disabled due to the mobile unit entering a non-gaming area;
- d. The user or system has terminated the session.

The following policy applies to mobile gaming system components that isolate mobile communication devices from the server portion of the mobile gaming system:

1. A firewall or equivalent hardware appliance with best practice policies in place must exist between any wireless access points or like device and the gaming server(s).
2. The Chairman or his designee may waive the hardware requirement of Policy 4.020(2)(1) if it can be demonstrated that an alternative solution adequately isolates the mobile communications devices from the server portion of the mobile gaming system.

**Technical Standard 4.020**

In furtherance of Technical Standard 4.020(1), the following policies apply to mobile gaming systems that communicate with a mobile communications device:

1. Communications between the server(s) and the mobile client must use appropriate authentication and cryptographic protocols to provide mutual authentication of the mobile unit and the server, integrity of the data communicated, and for confidentiality by encrypting the data communicated. Examples of appropriate protocols include but are not limited to SSL, TLS, IPsec, Kerberos, EAP, and 802.1x.
2. All mobile devices must be successfully authenticated prior to accessing any resources of the mobile gaming system.
3. For wireless communications the system must:
  - a. Employ a public, peer reviewed encryption algorithm such as 3DES, AES, or another algorithm approved by the Chairman.
  - b. ~~Not broadcast the network identifier (i.e. SSID).~~ (amended to allow for the broadcasting of SSID)
  - c. The network identifier must be changed from the factory default and must not be made up of information related to the operator (e.g. abccasino) or the type of transactions occurring over the network (e.g. gamingap).
  - d. Provide physical security for access points or equivalent hardware.
  - e. Access points should implement hardware identifier (MAC) filtering.

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- f. Mobile devices must not communicate to or through another mobile device. Communication must only occur between the mobile device and the mobile gaming system via authorized access points and other required network hardware.
4. The system must maintain an authorized list of devices which it may communicate with, which must include the device name, a unique device ID and the device's hardware identifier.
5. The system must provide a log of all failed attempts at network access which includes the device name and hardware identifier. This log must be stored for a minimum of 90 days.

#### **Technical Standard 4.030**

1. Systems must be capable of immediately detecting if a mobile device has entered a non-gaming area.
2. Gaming area coverage may not extend into prohibited areas.
3. If a patron enters a non-gaming area the system must:
  - a. Suspend gaming transactions following the completion of any current transaction; and
  - b. Notify the patron that gaming transactions have been suspended until the patron reenters a gaming area and is reauthorized.
4. Upon reentry into a gaming area the patron must be authenticated (Policy 4.010(2)) and the device must return to the last known state prior to gaming activity suspension.

#### **Operation of a Mobile Gaming System**

Operators of a mobile gaming system must be able to provide the following:

1. Mobile gaming operation information to patrons such as gaming area maps, rules of operation, and how to operate; and
2. In the case of a system based mobile gaming system, a readily accessible terminal for authorized personnel that will allow for the reconciliation of game activity (play history, etc.) on any mobile unit in case of mobile device failure or disputed games.

#### **Advertising on an EGM display**

The following policies apply to gaming devices that use the entire gaming device primary display for non game related activities. This policy does not apply to software or hardware that mixes video signals for the purposes of providing ancillary windows on the gaming device.

1. The gaming device must be in the idle mode with no errors or tilts, no play and no credits on the machine in order to utilize the primary display. If the use of the

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display is the direct result of a player request, the idle mode and no credit requirements of this section may be ignored;

2. At all times a patron must be able to cancel any non gaming related activities being displayed on the primary display.
3. Activities such as the acceptance of currency must automatically result in the cancellation of any non gaming activities on the primary display.

#### **Gaming Device Display Transformation Technology**

Gaming devices that contain technology to allow multiple windows to be displayed and/or resized on the primary display(s) for gaming or non gaming activities must be able to do the following:

1. Allow the player or operator to close any window on demand that is not pertinent to the primary game;
2. Allow the operator to perform routine operations on the gaming device at any time; and
3. Maintain the proper operation and legibility of the main game and related game information if the window of the main game has been resized or otherwise modified in any way.

#### **Demo and Attract Modes**

Gaming devices that use demo or attract modes must not allow activation of the demo or attract mode if there are credits on the gaming device.

#### **Auto Play Functionality**

Gaming devices that utilize an auto play functionality to automatically place wagers on behalf of the player must do the following:

1. Disable the auto play functionality by default upon game initialization and require the operator to manually activate the functionality using a method approved by the Chairman;
2. Require a 2-stage process for players to initiate any auto play functionality. One of the stages must involve player acknowledgement that they will auto play the game;
3. Maintain the same game speed during the auto play mode such that game play does not occur faster than that of manual game play; and
4. Allow a reasonable amount of time for a player to view their game outcome and/or stop the auto play functionality.

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Gaming devices that utilize physical or touch screen buttons to initiate a wager must implement edge triggered activation of all buttons used to initiate game play or commit wagers. (i.e. buttons cannot be held down to auto initiate wagers).

### **Multi Terminal Gaming Devices**

Gaming devices that utilize multiple player terminals or devices for the purposes of playing a common game must employ a mechanism to ensure that all connected terminals use a compatible version of software and compatible configurations.

### **Mystery Awards**

Gaming devices that utilize a mystery progressive or other type of mystery bonus such that weighted tables are used in the determination of the winner or winning value must ensure that:

1. Table segment weightings do not exceed a 6 to 1 ratio between the minimum weight and the maximum weight;
2. Adjacent segment weightings in each table do not exceed a decrease or increase greater than 1.5 times the minimum weight of the table from each other; and
3. The progressive functionality meets the requirements of Regulation 14.045 if the gaming device is an inter-casino linked system.

### **Default Positions of Symbols or Other Game Elements**

Gaming devices must be configured or programmed such that the "home" or "default" positions of game elements do not display a winning outcome.