CHAPTER 810a. INTERACTIVE GAMING TESTING AND CONTROLS

Authority

The provisions of this Chapter 810a added under 4 Pa.C.S. §§ 1202(b)(30) and 13B02, unless otherwise noted.

Source

The provisions of this Chapter 810a added August 27, 2021, effective August 28, 2021, 51 Pa.B. 5389, unless noted otherwise.

Cross References

This chapter cited in 58 Pa. Code § 469a.4 (relating to responsibilities of a private testing and certification facility); 58 Pa. Code § 830a.7 (relating to multiuse computing device and gaming platform requirements); 58 Pa. Code § 1401a.1 (relating to scope); and 58 Pa. Code § 1407a.8 (relating to sports wagering interactive system requirements).

§ 810a.1. Scope.

To ensure players are not exposed to unnecessary security risks by choosing to participate in interactive gaming in this Commonwealth and to ensure the integrity and security of interactive gaming operations in this Commonwealth, this chapter applies to all games an interactive gaming certificate holder or interactive gaming operator seeks to offer to players in this Commonwealth.

§ 810a.2. Definitions.

The following words and terms, when used in this chapter, have the following meanings, unless the context clearly indicates otherwise:

Artwork or *art*—Graphical and auditory information that is sent to the player device for presentation to the player.

Game cycle—The finite set of all possible combinations.

Personal progressive—A progressive jackpot which only one player contributes to with qualifying progressive wagers and which only that player can win.

Player interface—The interface within the software in which the player interacts. The term is also referred to as the gaming window.

Progressive jackpot—

  (i)   An increasing prize based on a function of credits that are wagered.

  (ii)   A monetary prize that increases in value based on a function of credits wagered.

  (iii) The term includes prizes that are awarded based on criteria other than obtaining winning outcomes in the game, such as mystery progressives.

§ 810a.3. Minimum game standards.

All of the following requirements apply to the game information, artwork, paytables and help screens which include all written, graphical and auditory information provided to the player either directly from the game interface or from a page accessible to the player from the game interface through a hyperlink located in a conspicuous location.

  (1)   All statements and graphics within the gaming information, artwork, paytables and help screens must be accurate and not misleading.

  (2)   All game rules and paytable information must be available to the player directly on the player interface or accessible from the player interface through a hyperlink without the need for funds to be deposited or funds to be staked.

  (3)   All game rules and paytable information must be sufficient to explain all the applicable rules and how to participate in all stages of the game.

  (4)   Paytable information must include all possible winning outcomes, patterns, rankings and combinations, and their corresponding payouts with a designated denomination or currency. All displayed payouts must be theoretically possible.

  (5)   The rules of the game must inform the players of the imperfections of the communications medium for the game and how this affects them.

  (6)   There must be sufficient information regarding any award payout adjustments such as fees, rakes, commissions, and the like.

  (7)   If the artwork contains game instructions specifying a maximum win then it must be possible to win this amount from a single game (including features or other game options).

  (8)   For games that offer bonus bets that require a base game bet, the minimum percentage return to player of the bonus bet must take into account that a base game bet must be placed.

  (9)   If random/mystery prizes are offered, the maximum value obtainable from the random/mystery prize must be indicated. If the value of the random/mystery prize depends on credits wagered or any other factors, this must be stated.

  (10) The artwork should clearly state the rules for payments of prizes when multiple wins are possible.

   (i)   A description of what combinations will be paid when a pay line may be interpreted to have more than one individual winning combination (''only highest paid win per line'').

810a-2

(ii)   When the game supports multiple pay lines, the artwork should display a message indicating wins on different pay lines are added or equivalent.

(iii)   When the game supports scatters, artwork should display a message indicating that scattered wins are added to pay line wins, or equivalent, if this is the rule of the game.

(iv)   The artwork should clearly communicate the treatment of coinciding scattered wins with respect to other possible scattered wins. For example, the artwork should state whether combinations of scattered symbols pay all possible prizes or only the highest prize.

(v)   The artwork should clearly communicate the treatment of coinciding game outcome (that is, straight flush can be a flush and a straight, three red 7s can be any three 7s).

(11) If it is possible to bet on multiple lines and it is not clear which reel positions are part of each of the possible lines, then the additional lines must be clearly displayed on the artwork and appropriately labeled. The additional lines must either be shown on the displayed artwork, be available for display on a help screen or permanently displayed on all game-play screens in a location separate from the actual reels.

(12) When multiplier instructions are displayed on artwork, there must be no question as to whether the multiplier applies.

(13) All game symbols and objects must be clearly displayed to the player and not be misleading in any way. Game symbols and objects must retain their shape throughout all artwork, except while animation is in progress.

(14) The artwork must clearly state which symbols and objects may act as a substitute or wild and in which winning combinations the substitute/wild may be applied.

(15) The artwork must clearly state which symbols and objects may act as scatter and in which winning combinations the scatter may be applied.

(16) The game may not advertise upcoming wins unless the advertisement is accurate and mathematically demonstrable.

(17) All of the following requirements apply to games depicting cards being drawn from a deck:

(i)   A game which utilizes multiple decks of cards must clearly indicate the number of cards and card decks in play.

(ii)   Once removed from the deck, cards may not be returned to the deck except as provided by the rules of the game depicted.

(iii)   The deck may not be reshuffled except as provided by the rules of the game depicted.

(18) All of the following requirements apply to multiwager games:

(i)   Each individual wager to be played must be clearly indicated to inform the player as to which wagers have been made and the credits bet per wager.

810a-3

(ii)   Each winning prize obtained must be displayed to the player in a way that clearly associates the prices to the appropriate wager. When there are wins associated with multiple wagers, each winning wager must be indicated in turn.

§ 810a.4. Minimum display standards.

All of the following game information must be visible or easily accessible to the player at all times during a player session:

(1)   The name of the game being played.

(2)   Restrictions on play or betting such as any play duration limits, maximum win values, and the like.

(3)   The player's current session balance.

(4)   The current bet amount. This is only during the phase of the game when the player can add to or place additional bets for that phase.

(5)   Current placement of all bets.

(6)   The denomination of the bet.

(7)   The amount won for the last completed game (until the next game starts or betting options are modified).

(8)   The player options selected for the last completed game (until the next game starts or a new selection is made).

(9)   Initial player section options are to be described. Player selection options once the game has commenced should be clearly shown on the screen.

(10) The winning amount for each separate wager and total winning amount are to be displayed on the screen.

§ 810a.5. Random number generator standards.

(a)   The random number generator must be cryptographically strong at the time of submission for approval. When more than one instance of a random number generator is used in an interactive gaming system, each instance must be separately evaluated and certified. When each instance is identical but involves a different implementation within a game/application, each implementation shall also be separately evaluated and certified. Any outcomes from the random number generator used for game symbol selection/game outcome determination must be shown, by data analysis and a source code read, to:

(1)   Be statistically independent, unless the submission has been approved for a persistent-state outcome determination.

(2)   Be fairly distributed (within statistically expected bounds) over their range.

(3)   Pass various recognized statistical tests.

(4)   Be cryptographically strong.

(b)   Random number generators must adhere to standards in § 461a.7 (relating to slot machine minimum design standards).

810a-4

(c)　The gaming laboratory may employ the use of various recognized tests to determine whether or not the random values produced by the random number generator pass the desired confidence level of 95%. These tests include the following:

(1)　Chi-square test.

(2)　Equi-distribution (frequency) test.

(3)　Gap test.

(4)　Overlaps test.

(5)　Poker test.

(6)　Coupon collectors test.

(7)　Permutation test.

(8)　Kolmogorov-Smirnov test.

(9)　Adjacency criterion tests.

(10)　Order statistic test.

(11)　Runs tests (patterns of occurrences should not be recurrent).

(12)　Interplay correlation test.

(13)　Serial correlation test potency and degree of serial correlation (outcomes should be independent of the previous game, unless the submission has been approved for a persistent-state outcome determination).

(14)　Tests on subsequences.

(15)　Poisson distribution.

(d)　The scaling method may not compromise the cryptographic strength of the random number generator. The scaling method must preserve the distribution of the scaled values. For example, if a 32-bit random number generator with a range of the set of integers in the closed interval $(0, 2_{32}-1)$ were to be scaled to the range of the set of integers in the closed interval (1, 6) so that the scaled values can be used to simulate the roll of a standard six-sided die, then each integer in the scaled range should theoretically appear with equal frequency. In the example given, if the theoretical frequency for each value is not equal, then the scaling method is considered to have a bias. Thus, a compliant scaling method must have bias equal to zero.

(e)　If the interactive gaming system utilizes hard-based random number generators, there must be dynamic/active, real-time monitoring of the output with a sample size large enough to allow for reasonably high statistically powerful testing so that game play is disabled when an output testing failure is detected.

(f)　If the interactive gaming system utilizes a software-based random number generator, it must adhere to all of the following:

(1)　The period of the random number generator, in conjunction with the methods of implementing the random number generator outcomes, must be sufficiently large to ensure that all game independent outcome combinations/permutations are possible for the given game/application, unless the submission has been approved for a persistent-state outcome determination.

810a-5

(2)   The methods of seeding/reseeding must ensure that all seed values are determined in a manner that does not compromise the cryptographic security of the random number generator.

(3)   To ensure that random number generator outcomes cannot be predicted, adequate background cycling/activity must be implemented in between games. Whenever a game outcome is made up of multiple mapped random number generator values, background cycling/activity must be implemented during the game (that is, in between the selection of each mapped random number generator value) to ensure that the game outcome is not comprised of sequential mapped random number generator outcomes. The rate of background cycling/activity must be sufficiently random in and of itself to prevent prediction.

§ 810a.6. Software authentication.

The acquisition and development of new software must follow defined processes in accordance with the information security policy.

(1)   The production environment must be logically and physically separated from the development and test environments.

(2)   Development staff shall be precluded from having access to promote code changes into the production environment. If, due to staffing limitations, this requirement cannot be met by the entity, the internal controls submitted to the Board shall describe what measures will be implemented to ensure the integrity of interactive games in the production environment.

(3)   There must be a documented method to verify that test software is not deployed to the production environment.

(4)   To prevent leakage of personal identifiable information, there must be a documented method to ensure that raw production data is not used in testing.

(5)   All documentation relating to software and application development should be available and retained for the duration of its lifecycle.

§ 810a.7. Changes to game.

A change or modification to an interactive game shall be handled in accordance with the Change Management guidelines issued and distributed to interactive gaming certificate holders, interactive gaming operators and interactive gaming manufacturers.

§ 810a.8. Game rules.

(a)   Interactive gaming certificate holders and interactive gaming operators shall adopt and adhere to written, comprehensive house rules governing wagering transactions by and between authorized players that are available for review at all times by players through a conspicuously displayed link. House rules must include all of the following:

(1)   Clear and concise explanation of all fees.

(2)   The rules of play of a game.

(3)   Any monetary wagering limits.

(4)   Any time limits pertaining to the play of a game.

(b)   House rules must be approved by the Board.

(c)   House rules that deviate from Board regulations shall be submitted to the Board's Office of Gaming Laboratory Operations for review and approval prior to submission to the Board for approval prior to implementation.

§ 810a.9. Fairness.

(a)   All critical functions including the generation of the result of any game (and the return to the player) must be generated by the interactive gaming platform and be independent of the player device. All of the following also apply:

(1)   Game outcome may not be affected by the effective bandwidth, link utilization, bit error rate or other characteristic of the communications channel between the interactive gaming platform and the player device.

(2)   Determination of events of chance that result in a monetary award may not be influenced, affected or controlled by anything other than numerical values derived in an approved manner from the certified random number generator when applicable and in conjunction with the rules of the game.

(3)   Each possible permutation or combination of game elements that produces winning or losing game outcomes must be available for random selection at the initiation of each play, unless otherwise denoted by the game.

(4)   As game symbols are selected or game outcomes are determined, they must be immediately used as directed by the rules of the game.

(5)   When the game requires a sequence or mapping of symbols or outcomes to be set up in advance, the symbols or outcomes should not be resequenced or remapped, except as provided for in the rules of the game.

(6)   After selection of the game outcome, the game may not make a variable secondary decision which affects the result shown to the player.

(7)   Except as provided by the rules of the game, events of chance within games should be independent and not correlated with any other events within the game or events within the previous game, unless the submission has been approved for a persistent-state outcome determination.

(8)   For game types such as a spinning reel game, unless otherwise disclosed to the player, the mathematical probability of a symbol appearing in a position for any game outcome must be constant.

(b)   A game may not be designed to give the player a false expectation of better odds by misrepresenting any occurrence or event.

(1)   Games that are designed to give the player the perception that they have control over the game due to player skill when they actually do not must fully address this behavior in the game help screens.

(2)   The final outcome of each game must be displayed for a sufficient length of time that permits a player to verify the outcome of the game.

§ 810a.10. Prohibitions.

(a)   *Forced game play*.

   (1)   The player may not be forced to play a game just by selecting that game.

   (2)   It must not be possible to start a new game in the same player interface instance before all relevant meters have been updated on the interactive game system and all other relevant connections and player session balance or, if applicable, the player's total balance has been updated.

   (3)   If an auto play mode is incorporated, it must be possible to turn this mode off at any time during game play.

(b)   *Bots and computerized players*. Bots or computerized players are only permitted when employed by the interactive gaming system in free play or training mode, or if use of the bot or computerized player satisfies all of the following:

   (1)   The use of artificial intelligence software must be clearly explained in the help menus.

   (2)   All computerized players must be clearly marked at the tables so that players are aware of which players are not human.

(c)   *Incomplete games*. A game is incomplete when the game outcome remains unresolved or the outcome cannot be properly seen by the player.

   (1)   The interactive gaming certificate holder or interactive gaming operator may provide a mechanism for a player to complete an incomplete game.

   (2)   Incomplete games shall be resolved before a player is permitted to participate in another instance of the same game.

   (3)   Wagers associated with an incomplete game must be voided within 30 days and the wagers can be forfeited or returned to the player provided that:

      (i)   The terms and conditions or the game rules, or both, must clearly define how wagers will be handled when they remain undecided beyond the specified time period and the interactive gaming system must be capable of returning or forfeiting the wagers, as appropriate.

      (ii)   In the event that a game cannot be continued due to an interactive gaming system action, all wagers must be returned to the players of that game.

(d)   *Auto play prohibited*. Game play shall be initiated only after a registered player has affirmatively placed a wager and activated play. An auto play feature is not permitted in game software unless authorized by the Board, and if permitted shall not exceed 50 spins.

810a-8

§ 810a.11. Controls.

(a)   A replay last game feature either as a re-enactment or by description must be available to players. The replay must clearly indicate that it is a replay of the entire previous game cycle, and must provide, at a minimum, all of the following information:

(1)   The date and time the game started or ended, or both.

(2)   The display associated with the final outcome of the game, either graphically or by a clear text message.

(3)   Total player cash/credits at start or end of play, or both.

(4)   Total amount bet.

(5)   Total cash/credits won for the prize (including progressive jackpots).

(6)   The results of any player choices involved in the game outcome.

(7)   Results of any intermediate game phases, such as gambles or feature games.

(8)   Amount of any promotional awards received, if applicable.

(b)   For each individual game played, all of the following information must be recorded, maintained and easily demonstrable by the interactive gaming system:

(1)   Unique player ID.

(2)   Contributions to progressive jackpot pools, if applicable.

(3)   Game status (in progress, complete, and the like).

(4)   The table number, if applicable, at which the game was played.

(5)   The paytable used.

(6)   Game identifier and version.

(c)   An organized event that permits a player to either purchase or be awarded the opportunity to engage in competitive play against other players may be permitted providing all of the following rules are met:

(1)   While enabled for tournament play, a game may not accept real money from any source, nor pay out real money in any way, but must utilize tournament specific credits, points or chips which have no cash value.

(2)   Interactive gaming contest/tournament rules are available to a player on the web site where the interactive gaming contest/tournament is being conducted. The rules must include, at a minimum, all of the following:

(i)   All conditions players shall meet to qualify for entry into and advancement through the contest/tournament.

(ii)   Any conditions concerning late arrivals or complete tournament no-shows and how auto-blind posting or initial entry purchase, or both, is handled.

(iii)   Specific information pertaining to any single contest/tournament, including the amount of money placed in the prize pool.

(iv)   The distribution of funds based on specific outcomes.

(v)   The name of the organization or person that conducted the contest/tournament on behalf of, or in conjunction with, the operator, if applicable.

810a-9

(3)   The results of each contest/tournament shall be made available on the interactive gaming web site for the players to review. Subsequent to being posted on the web site, the results of each contest/tournament shall be available upon request. The recording must include all of the following:

    (i)   Name of the event.

    (ii)   Date of event.

    (iii)   Total number of entries.

    (iv)   Amount of entry fees.

    (v)   Total prize pool.

    (vi)   Amount paid for each winning category.

(d)   All of the following requirements apply to the disabling and re-enabling of gambling on the interactive gaming system:

(1)   The interactive gaming system must be able to disable or enable all gambling on command.

(2)   When any gambling is disabled or enabled on the interactive gaming system an entry must be made in an audit log that includes the reason for any disable or enable.

(e)   When a game or gaming activity is disabled:

(1)   The game is not to be accessible to a player once the player's game has fully concluded.

(2)   The player should be permitted to conclude the game in play (that is, bonus rounds, double up/gamble and other game features related to the initial game wager should be fully concluded).

(3)   If wagers have been placed on pending real-life events:

    (i)   The terms and conditions must clearly define what happens to the wagers if the gaming activity is to remain disabled and the corresponding real-life event is completed, and the interactive gaming system must be capable of returning all bets to the players or settling all bets, as appropriate.

    (ii)   The terms and conditions must clearly define what happens to the wagers if the gaming activity is to re-enable before the corresponding real-life event is completed, and the interactive gaming system must be capable of returning all bets to the players, or leaving all bets active, as appropriate.

(f)   When one or more feature/bonus prize may be paid to the player, the bonus game must be part of the overall paytable theoretical return to player.

(g)   All progressive jackpots must adhere to all of the following:

(1)   All players that play progressive jackpot games must be made aware of actions which would make them eligible to win the progressive jackpot.

(2)   When progressive jackpot contributions are part of the return to player calculation, the contributions may not be assimilated into revenue. If a cap is established on any progressive jackpot all additional contributions once that cap is reached are to be credited to a diversion pool.

(3)   The rules of the game must incorporate how the progressive jackpot is funded and determined.

(4)   If a minimum bet amount exists for a player to win a progressive jackpot, then the return to player (excluding the progressive jackpot) must meet the minimum player return in accordance with § 461a.7(a) (relating to slot machine minimum design standards). The calculation of the theoretical payout percentage may not include the amount of any progressive jackpot in excess of the initial reset amount.

(5)   The current progressive jackpot amount should be displayed on all player devices participating in the progressive jackpot. This display should be updated on all participating player devices at least every 30 seconds.

(6)   The rules of the game must inform the players of any maximum awards or time limits, or both, which may exist for each progressive jackpot.

(7)   For progressive jackpots offering multiple levels of awards, the player must always be paid the higher amount if a particular combination is won that should trigger the higher paying award. This may occur when a winning combination may be evaluated as more than one of the available paytable combinations (that is, a flush is a form of a straight flush and a straight flush is a form of a royal flush). There may be situations when the progressive jackpot levels must be swapped to ensure the player is being awarded the highest possible value based on all combinations the outcome may be defined as.

(8)   If multiple progressive jackpots occur at approximately the same time and there is no definitive way of knowing which jackpot occurred first, the operator shall adopt procedures, approved by the Board, for resolution. The rules of the game must include information which addresses the resolution of this possibility.

(9)   All progressive jackpots must adhere to standards in §§ 461a.12 and 461a.13 (relating to progressive slot machines; and wide area progressive systems), except for any physical requirements deemed inapplicable by the Board and subject to the following modifications:

(i)   Notice of intent to transfer a progressive jackpot must be conspicuously displayed on the interactive game icon and at all times during a gameplay by means of methodology approved by the Board for a period at least 10 days immediately preceding the transfer of the progressive jackpot.

(ii)   Within § 461a.12, the term ''gaming floor'' used regarding landbased progressives shall be analogous to the term ''interactive gaming platform'' used regarding interactive gaming progressives.

(10) If a progressive jackpot is offered as a personal progressive that only one player contributes to and only that player can win, the player's contributions to the progressive jackpot must be refunded to the player within 30 days if the player's interactive gaming account is closed for any reason.

§ 810a.12. Test accounts.

(a)   Interactive gaming certificate holders and interactive gaming operators may establish test accounts to be used to test the various components and opera-

tion of an interactive gaming system in accordance with internal controls, which, at a minimum, address all of the following:

    (1)   The procedures for the issuance of funds used for testing, including the identification of who is authorized to issue the funds and the maximum amount of funds that may be issued.

    (2)   The procedures for assigning each test account for use by only one person.

    (3)   The maintenance of a record for all test accounts to include when they are active, to whom they are issued and the employer of the person to whom they are issued.

    (4)   The procedures for the auditing of testing activity by the interactive gaming certificate holder or interactive gaming operator to ensure the accountability of funds used for testing and proper adjustments to gross interactive gaming revenue.

    (5)   The ability to withdraw funds from a test account without the Board's prior approval must be disabled by the interactive gaming system.

    (6)   For testing of peer-to-peer games:

      (i)   A person may utilize multiple test accounts.

      (ii)   Test account play shall be conducted without the participation of players.

 (b)   In addition to the required internal controls in subsection (a)(1)—(6), for any wagering on test accounts conducted outside the boundaries of this Commonwealth, the procedures for auditing of testing activity must include the method for ascertaining the location from which persons using test accounts access the interactive gaming system.

[Next page is 811-1.]

810a-12