(3) A Class II gaming system shall not automatically pay an award subject to mandatory tax reporting or withholding.

(4) Credit redemption by voucher or coupon shall conform to the following:

(i) A Class II gaming system may redeem credits by issuing a voucher or coupon when it communicates with a voucher system that validates the voucher or coupon.

(ii) A Class II gaming system that redeems credits by issuing vouchers and coupons shall either:

(A) Maintain an electronic record of all information required by paragraphs (b)(5)(ii) through (vi) of this section; or

(B) Generate two identical copies of each voucher or coupon issued, one to be provided to the player and the other to be retained within the machine for audit purposes.

(5) Valid vouchers and coupons shall contain the following:

(i) Gaming operation name and location;

(ii) The identification number of the Class II gaming system component or the player interface number, as applicable;

(iii) Date and time of issuance;

(iv) Alpha and numeric dollar amount;

(v) A sequence number;

(vi) A validation number that:

(A) Is produced by a means specifically designed to prevent repetition of validation numbers; and

(B) Has some form of checkcode or other form of information redundancy to prevent prediction of subsequent validation numbers without knowledge of the checkcode algorithm and parameters;

(vii) For machine-readable vouchers and coupons, a bar code or other form of machine readable representation of the validation number, which shall have enough redundancy and error checking to ensure that 99.9% of all misreads are flagged as errors;

(viii) Transaction type or other method of differentiating voucher and coupon types; and

(ix) Expiration period or date.

(6) Transfers from an account may not exceed the balance of that account.

(7) For Class II gaming systems not using dollars and cents accounting and not having odd cents accounting, the Class II gaming system shall reject any transfers from voucher payment systems or cashless systems that are not even multiples of the Class II gaming system denomination.

(8) Voucher redemption systems shall include the ability to report redemptions per redemption location or user.

§ 547.12 What are the minimum technical standards for downloading on a Class II gaming system?

This section provides standards for downloading on a Class II gaming system.

(a) *Downloads.* (1) Downloads are an acceptable means of transporting approved content, including but not limited to software, files, data, and prize schedules.

(2) Downloads of software, games, prize schedules, or other download packages shall be conducted only as authorized by the tribal gaming regulatory authority.

(3) Downloads shall use secure methodologies that will deliver the download data without alteration or modification, in accordance with § 547.15(a).

(4) Downloads conducted during operational periods shall be performed in a manner that will not affect game play.

(5) Downloads shall not affect the integrity of accounting data.

(6) The Class II gaming system or the tribal gaming regulatory authority shall log each download of any download package. Each log record shall contain as a minimum:

(i) The time and date of the initiation of the download;

(ii) The time and date of the completion of the download;

(iii) The Class II gaming system components to which software was downloaded;

(iv) The version(s) of download package and any software downloaded. Logging of the unique software signature will satisfy this requirement;

(v) The outcome of any software verification following the download (success or failure); and

(vi) The name and identification number, or other unique identifier, of any individual(s) conducting or scheduling a download.

(b) *Verifying downloads.* Following download of any game software, the Class II gaming system shall verify the downloaded software using a software signature verification method that meets the requirements of § 547.8(f). Using any method it deems appropriate, the tribal gaming regulatory authority shall confirm the verification.

§ 547.13 What are the minimum technical standards for program storage media?

This section provides minimum standards for removable, (re-)writable, and nonwritable storage media in Class II gaming systems.

(a) *Removable program storage media.* All removable program storage media shall maintain an internal checksum or signature of its contents. Verification of this checksum or signature is to be performed after every restart. If the verification fails, the affected Class II gaming system component(s) shall lock up and enter a fault state.

(b) *Nonrewritable program storage media.* (1) All EPROMs and Programmable Logic Devices (PLDs) that have erasure windows shall be fitted with covers over their erasure windows.

(2) All unused areas of EPROMs shall be written with the inverse of the erased state (*e.g.*, zero bits (00 hex) for most EPROMs), random data, or repeats of the program data.

(3) Flash memory storage components intended to have the same logical function as ROM, *i.e.* not to be dynamically written, shall be write-protected or otherwise protected from unauthorized modification.

(4) The write cycle shall be closed or finished for all CD–ROMs such that it is not possible to write any further data to the CD.

(5) Write protected hard disks are permitted if the hardware means of enabling the write protect is easily viewable and can be sealed in place Write protected hard disks are permitted using software write protection verifiable by a testing laboratory.

(c) *Writable and rewritable program storage media.* (1) Writable and rewritable program storage, such as hard disk drives, Flash memory, writable CD–ROMs, and writable DVDs, may be used provided that the software stored thereon may be verified using the mechanism provided pursuant to § 547.8(f).

(2) Program storage shall be structured so there is a verifiable separation of fixed data (*e.g.* program, fixed parameters, DLLs) and variable data.

(d) *Identification of program storage media.* All program storage media that is not rewritable in circuit, (*e.g.* EPROM, CD–ROM) shall be uniquely identified, displaying:

(1) Manufacturer;

(2) Program identifier;

(3) Program version number(s); and

(4) Location information, if critical (*e.g.* socket position 3 on the printed circuit board).

§ 547.14 What are the minimum technical standards for electronic random number generation?

This section provides minimum standards for electronic RNGs in Class II gaming systems.

(a) *Properties.* All RNGs shall produce output having the following properties:

(1) Statistical randomness;

(2) Unpredictability; and

(3) Non-repeatability.

(b) *Statistical Randomness.* (1) Numbers produced by an RNG shall be statistically random individually and in the permutations and combinations used in the application under the rules of the game. For example, if a bingo game with 75 objects with numbers or other designations has a progressive winning pattern of the five numbers or other designations on the bottom of the card and the winning of this prize is defined to be the five numbers or other designations are matched in the first five objects drawn, the likelihood of each of the $75C5$ combinations are to be verified to be statistically equal.

(2) Numbers produced by an RNG shall pass the statistical tests for randomness to a 99% confidence level, which may include:

(i) Chi-square test;

(ii) Equi-distribution (frequency) test;

(iii) Gap test;

(iv) Poker test;

(v) Coupon collector's test;

(vi) Permutation test;