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1 PART 547 – MINIMUM TECHNICAL STANDARDS FOR GAMING EQUIPMENT USED 2 WITH THE PLAY OF CLASS II GAMES 3 Sec. 4 547.1 What is the purpose of this part? 5 547.2 How do these rules affect state jurisdiction? What are the definitions for this part? 6 Who is responsible for implementing these standards? 547.3 7 547.4 What are the rules of general application for this part? 8 547.5 How does a tribal government, Tribal Gaming Regulatory Authority TGRA, or tribal 9 gaming operation comply with this part? 10 — What are the rules of interpretation and of general application for this part?547.6 are the minimum technical standards for enrolling and enabling Class II gaming system components? 11 12 547.7 What are the minimum technical hardware standards applicable to Class II gaming 13 systems? 14 547.8 What are the minimum technical software standards applicable to Class II gaming systems? 15 What are the minimum technical standards for Class II gaming system accounting 547.9 16 functions? 17 547.10 What are the minimum standards for Class II gaming system critical events? 18 547.11 What are the minimum technical standards for money and credit handling? 19 547.12 What are the minimum technical standards for downloading on a Class II gaming system? 20 547.13 What are the minimum technical standards for program storage media? 21 547.14 What are the minimum technical standards for electronic random number generation? 22 547.15 What are the minimum technical standards for electronic data communications between 23 system components? 24 547.16 What are the minimum standards for game artwork, glass, and rules? How does a tribal gaming regulatory authority apply for a variance from these standards?to 25 547.17 26 implement an alternate standard to those required by this part? 27 28 Authority: 25 U.S.C. 2706(b)._

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1 § 547.1 What is the purpose of this part? 2 The Indian Gaming Regulatory Act, 25 U.S.C. 2703(7)(A)(i), permits the use of electronic, 3 computer, or other technologic aids in connection with the play of Class II games. This part 4 establishes the minimum technical standards governing the use of such aids. 5 § 547.2 How do these regulations affect state jurisdiction? 6 7 Nothing in this part shall be construed to grant to a state jurisdiction over Class II gaming or to 8 extend a state's jurisdiction over Class III gaming. 9 § 547.3 What are the definitions for this part? 10 11 For the purposes of this part, the following definitions apply: 12 Account access component. A component within a Class II gaming system that reads or 13 recognizes account access media and gives a patron the ability to interact with his or her an account. 14 Account access medium. A magnetic stripe card or any other medium inserted into, or otherwise 15 made to interact with, an account access component in order to give a patron the ability to interact 16 with an account. 17 Audit mode. The mode where it is possible to view Class II gaming system accounting functions, 18 statistics, etc. and perform non-player non-player-related functions. 19 Agent. An employee or other A person authorized by the gaming operation, as approved by the 20 tribal gaming regulatory authority, designated for certain TGRA, to make decisions, or perform tasks 21 and or actions in on the behalf of the gaming operation.

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1	Cancel credit. An action initiated by the Class II gaming system where some or all of a
2	player's player's credits are removed by an attendant and paid to the player.
3	Cashless system. A proprietary system that performs cashless transactions and maintains records
4	of those cashless transactions.
5	Cashless transaction. A movement of funds electronically from one component to another, often
6	to or from a patron deposit account.
7	
8	CD. CD-ROM. Compact Disc——Read Only Memory.
9	
10	Chairman Chair. The Chairman Chair of the National Indian Gaming Commission.
11	Class II game. The same as "classgaming. Class II gaming must have the same meaning as
12	defined in 25 U.S.C. 2703(7)(A).
13	Class II gaming system. All components, whether or not technologic aids in electronic, computer,
14	mechanical, or other technologic form, that function together to aid the play of one or more Class II
15	games, including accounting functions mandated by these regulations
16	Commission. The National Indian Gaming Commission established by the Indian Gaming
17	Regulatory Act, <u>25 U.S.C. 270125 U.S.C. 2701</u> et seq
18	Coupon. A financial instrument of fixed wagering value, usually paper, that can only be used to
19	acquire nonnon-cashable credits through interaction with a voucher system. This does not include
20	instruments such as printed advertising material that cannot be validated directly by a voucher
21	system

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l	Critical memory. Memory locations storing data essential to the functionality of the Class II
2	gaming system
3	DLL. A Dynamic Dynamic Link Library file
4	Download package. Approved data sent to a component of a Class II gaming system for such
5	purposes as changing the component software
6	DVD. Digital Video Disk or Digital Versatile Disk
7	EPROM. Erasable Programmable Read Only Memory – a non-volatile storage chip or device that
8	may be filled with data and information, that once written is not modifiable, and that is retained even
9	if there is no power applied to the machine.
10	Electromagnetic interference. The physical characteristic of an electronic component to emit
11	electronic noise either into free air, onto the power lines, or onto communication cables.
12	Electrostatic discharge. A single-event, rapid transfer of electrostatic charge between two objects,
13	usually resulting when two objects at different potentials come into direct contact with each other.
14	
15	EPROM. Erasable Programmable Read Only Memory—a storage area that may be filled with data
16	and information, that once written is not modifiable, and that is retained even if there is no power-
17	applied to the machine.
18	
19	Fault. An event that when detected by a Class II gaming system causes a discontinuance of game
20	play or other component functions

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1	Financial instrument. Any tangible item of value tendered in Class II game play, including, but
2	not limited to, bills, coins, vouchers and coupons
3	Financial instrument acceptor. Any component that accepts financial instruments, such as a bill
4	<u>validator.</u>
5	Financial instrument dispenser. Any component that dispenses financial instruments, such as a ticket
6	<u>printer.</u>
7	Financial instrument storage component. Any component that stores financial instruments, such
8	as a drop box.
9	Flash memory. Non-volatile memory that retains its data when the power is turned off and
10	that can be electronically erased and reprogrammed without being removed from the circuit board.
11	Game software. The operational program or programs that govern the play, display of results,
12	and/or awarding of prizes or credits for Class II games
13	Gaming equipment. All electronic, electroelectro-mechanical, mechanical, or other physical
14	components utilized in the play of Class II games.
15	Hardware. Gaming equipment
16	Interruption. Any form of mismis-operation, component failure, or interference to the Class II
17	gaming equipment.
18	Modification. A revision to any hardware or software used in a Class II gaming system

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1	Non-cashable credit. Credits given by an operator to a patron; placed on an Class II gaming
2	system through a coupon, cashless transaction or other approved means; and capable of activating
3	play but not being converted to cash
4	Patron. A person who is a customer or guest of the gaming operation and may interact with a
5	Class II game. Also may be referred to as a "player".
6	Patron deposit account. An account maintained on behalf of a patron, for the purpose of
7	depositing and withdrawing cashable funds for the primary purpose of interacting with a gaming
8	activity
9	Player interface. Any component or components of a Class II gaming system, including an
10	electronic or technologic aid (not limited to terminals, player stations, handhelds, fixed units, etc.),
11	that directly enables player interaction in a Class II game.
12	Prize schedule. The set of prizes available to players for achieving prepre-designated patterns in
13	the Class II game.
14	Program storage media. An electronic data storage component, such as a CDCD-ROM, EPROM,
15	hard disk, or flash memory on which software is stored and from which software is read.
16	Progressive prize. A prize that increases by a selectable or predefined amount based on play of a
17	Class II game.
18	Proprietary Class II System Component. A system component that is only interoperable with a
19	single manufacturer's Class II system. Examples include vouchering systems, accounting systems,
20	and cashless systems.

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1	Random number generator (RNG). A software module, hardware component or combination of
2	these designed to produce outputs that are effectively random.
3	Reflexive software. Any software that has the ability to manipulate and/or replace a randomly
4	generated outcome for the purpose of changing the results of a Class II game.
5	Removable/rewritable storage media. Program or data storage components that can be removed
6	from gaming equipment and be written to, or rewritten by, the gaming equipment or by other
7	equipment designed for that purpose.
8	Server. A computer that controls one or more applications or environments within a Class II
9	gaming system.
10	Test/diagnostics mode. A mode on a component that allows various tests to be performed on the
11	Class II gaming system hardware and software.
12	Testing laboratory. An organization recognized by a tribal gaming regulatory authority TGRA
13	pursuant to § 547.4 <u>5</u> (f)
14	TGRA. Tribal gaming regulatory authority. The, which is the entity authorized by tribal law to
15	regulate gaming conducted pursuant to the Indian Gaming Regulatory Act.
16	Voucher. A financial instrument of fixed wagering value, usually paper, that can only be used to
17	acquire an equivalent value of cashable credits or cash through interaction with a voucher system.
18	Voucher system. A_proprietary component of the Class II gaming-system or an external system
19	that securely maintains records of vouchers and coupons; validates payment of vouchers; records

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2 and coupons. 3 § 547.3 Who is responsible for implementing these standards? 4 (a) Minimum Standards. These are minimum standards and, recognizing that TGRAs also 5 regulate Class II gaming, a TGRA may establish and implement additional technical standards that 6 do not conflict with the standards set out in this Part. 7 (b) No Limitation of Technology. This part should not be interpreted to limit the use of technology 8 or to preclude the use of technology not specifically referenced. 9 (c) Only applicable standards apply. Gaming equipment and software used with Class II gaming 10 systems must meet all applicable requirements of this part. For example, if a Class II gaming system 11 lacks the ability to print or accept vouchers, then any standards that govern vouchers do not apply. 12 (d) State Jurisdiction. Nothing in this part shall be construed to grant to a state jurisdiction over 13 Class II gaming or to extend a state's jurisdiction over Class III gaming. 14 § 547.4 What are the rules of general application for this part? 15 (a) Fairness. No Class II gaming system may cheat or mislead users. All prizes advertised must 16 be available to win during the game. Test laboratory must calculate and/or verify the mathematical 17 expectations of game play, where applicable, in accordance with the manufacturer stated submission. 18 The results must be included in the test laboratory's report to the TGRA. At the request of the TGRA,

successful or failed payments of vouchers and coupons; and controls the purging of expired vouchers

the manufacturer must also submit the mathematical expectations of the game play to the TGRA.

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(b) Approved equipment and software only. All gaming equipment and software used with Class
II gaming systems must be identical in all respects to a prototype reviewed and tested by a testing
laboratory and approved for use by the TGRA pursuant to § 547.5(a) through (c). Unapproved
software must not be loaded onto or stored on any program storage medium used in a Class II
gaming system, except as provided in § 547.5(e).
(c) Proper functioning. All gaming equipment and software used with Class II gaming systems
must perform according to the manufacturer's design and operating specifications.
§ 547.5 How does a tribal government, tribal gaming regulatory authority TGRA, or tribal
gaming operation comply with this part?
(a) Grandfathered Gaming systems: For all Class II gaming systems available for use at any
tribal gaming facility that were manufactured or placed in a tribal facility on or before November 10,
2008, the TGRA must:
(1) RequireHave required that all Class II gaming system software that affects the play of the
Class II game beand was in operation prior to November 10, 2008 was submitted, together with the
signature verification required by § 547.8(f), to a testing laboratory recognized pursuant to paragraph
(f) of this section within 120 days after November 10, 2008.
(2) RequireHave required that the testing laboratory testtested the submission to the standards
established by § 547.4(a), § 547.8(b), § 547.8(f), § 547.14, the minimum probability standards of §
547.5(e), and to any additional technical standards adopted by the TGRA;

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1	(5) Require nave required that the testing favoratory provide the tribar gaining regulatory
2	authority TGRA with a formal written report setting forth and certifying to the findings and
3	conclusions of the test;_
4	(4) Make Have made a finding, in the form of a certificate provided to the supplier or
5	manufacturer of the Class II gaming system, that the Class II gaming system qualifies for grandfather
6	status under the provisions of this section, but only upon receipt of a testing laboratory's laboratory's
7	report that the Class II gaming system is compliant with § 547.4(a), § 547.8(b), § 547.8(f), the
8	minimum probability standards of § 547.5(e), § 547.14, and any other technical standards adopted by
9	the tribal gaming regulatory authority. TGRA. If the tribal gaming regulatory authority does TGRA
10	did not issue the certificate, or if the testing laboratory finds found that the Class II gaming system is
11	not compliant with _§ 547.4(a), § 547.8(b), § 547.8(f), the minimum probability standards of §
12	547.5(e), § 547.14, or any other technical standards adopted by the tribal gaming regulatory
13	authority TGRA, then the gaming system shallmust immediately be removed from play and not be
14	utilized;
15	(5) Retain a copy of any testing laboratory's report so long as the Class II gaming system that is
16	the subject of the report remains available to the public for play; and any certificate of grandfather
17	status so long as the Class II gaming system that is the subject of the eertificate report remains
18	available to the public for play; and
19	
20	(7) Require (6) Have required the supplier of any player interface to designate with a permanently
21	affixed label each player interface with an identifying number and the date of manufacture or a
22	statement that the date of manufacture was on or before the effective date of this part. The tribal

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1	gaming regulatory authority shall also require the supplier to provide a written declaration or
2	affidavit affirming that the date of manufacture was on or before November 10, 2008. plate
3	consistent with § 547.7(d) and any other information required by the TGRA.
4	(b) Grandfather provisions. All Class II gaming systems manufactured or placed in a tribal facility on
5	or before the effective date of this part November 10, 2008 and that have been certified pursuant to
6	paragraph (a) of this section are grandfathered Class II gaming systems for which the following
7	provisions apply:_
8	(1) Grandfathered Class II gaming systems may continue in operation for a period of five years
9	from November 10, 2008.
10	(2) Grandfathered Class II gaming system shallsystems may only be available for useused at anya
11	tribal gaming facility subject to approval approved by the tribal gaming regulatory authority, which
12	shall TGRA. The TGRA must transmit its notice of that approval, identifying the grandfathered Class
13	II gaming system and its components, to the Commission.
14	(3) Remote communications must only be allowed if authorized by the TGRA. Grandfathered
15	systems must have the ability to enable or disable remote access, and the default state must be set to
16	disabled.
17	(4) As permitted by the TGRA, individual hardware or software components of a grandfathered
18	Class II gaming system may be repaired or replaced to ensure proper functioning, security, or
19	integrity of the grandfathered Class II gaming system.
20	(4
21	(5) All modifications that affect the play of a grandfathered Class II gaming system must be
22	approved pursuant to paragraph (c) of this section, except for the following:

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1	(i) Any software modifications that the tribal gaming regulatory authority TGRA finds will
2	maintain or advance the system's overall compliance with this part or any applicable provisions of
3	parts 542 and part 543 of this chapter, after receiving a new testing laboratory report that the
4	modifications are compliant with the standards established by § 547.8(b), the minimum probability
5	requirements of 4(a), § 547.5(e8(b)), § 547.14, and any other standards adopted by the tribal gaming
6	regulatory authority; TGRA;
7	(ii) Any hardware modifications that the tribal gaming regulatory authority TGRA finds will
8	maintain or advance the system's overall compliance with this part or any applicable
9	provisions of parts 542 and part 543 of this chapter; and_
10	(iii) Any other modification to the software of a grandfathered Class II gaming system that the
11	tribal gaming regulatory authority TGRA finds will not detract from, compromise or prejudice:
12	(A) The proper functioning, security, or integrity of the Class II gaming system, and_
13	(B) The gaming system's overall compliance with the requirements of this part or any
14	applicable provisions of parts 542 and part 543 of this chapter.
15	(iv) No such modification may be implemented without the approval of the tribal gaming
16	regulatory authority. TGRA. The tribal gaming regulatory authority shall TGRA must maintain a
17	record of the modification so long as the Class II gaming system that is the subject of the
18	modification remains available to the public for play and shallmust make the record available to the
19	Commission upon request. The Commission will only make available for public review records or
20	portions of records subject to release under the Freedom of Information Act, <u>5 U.S.C. 552</u> ; the
21	Privacy Act of 1974, 5 U.S.C. 552a; or the Indian Gaming Regulatory Act, 25 U.S.C. 2716(a).(c)

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1	Submission, testing, and approval—generally. Except as provided in paragraphs (b) and (d) of this
2	section, no tribal gaming regulatory authority shall permit in a tribal gaming operation 5 U.S.C. 552;
3	the Privacy Act of 1974, 5 U.S.C. 552a; or the Indian Gaming Regulatory Act, 25 U.S.C. 2716(a).
4	(c) Submission, testing, and approval – generally. Except as provided in paragraphs (b) and (d) of
5	this section, a TGRA must not permit the use of any Class II gaming system, or any associated
6	cashless system or voucher system or any modification thereto, in a tribal gaming operation unless:
7	(1) The Class II gaming system, cashless system, voucher payment system, or modification
8	thereto has been submitted to a testing laboratory;
9	(2) The testing laboratory tests is required by the TGRA to test the submission to the standards
10	established by:
11	(i) This part;
12	(ii) Any applicable provisions of parts 542 and part 543 of this chapter that are testable by the
13	testing laboratory; and_
14	(iii) The tribal gaming regulatory authority; TGRA;
15	(3) The testing laboratory provides a formal written report to the party making the submission,
16	setting forth and certifying to its findings and conclusions; and noting compliance with any
17	applicable federal laws or regulations;
18	(4)(i) The testing laboratory's written report certifies that the operation of each player interface
19	must not be compromised or affected by electrostatic discharge, liquid spills, electromagnetic
20	interference, radio frequency interference, or any other risk identified by the TGRA;

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1	(5) Following receipt of the testing laboratory's report, the tribal gaming regulatory authority_
2	TGRA makes a finding that the Class II gaming system, cashless system, or voucher system
3	conforms to the standards established by:
4	(A) This part;
5	(B) Any applicable provisions of parts 542 and part 543 of this chapter that are testable by the
6	testing laboratory; and_
7	(C) The tribal gaming regulatory authority.(ii TGRA.
8	(d) The tribal gaming regulatory authority shall TGRA must retain a copy of the testing
9	laboratory's report required by paragraph (c) of this section so long as the Class II gaming system,
10	cashless system, voucher system, or modification thereto that is the subject of the report remains
11	available to the public for play in its gaming operation.
12	(d _
13	(e) Emergency hardware and software modifications.
14	(1) A tribal gaming regulatory authority TGRA, in its discretion, may permit modified hardware
15	or software to be made available for play without prior laboratory testing or review if the modified
16	hardware or software is:_
17	(i) Necessary to correct a problem affecting the fairness, security, or integrity of a game or
18	accounting system or any cashless system, or voucher system; or_
19	(ii) Unrelated to game play, an accounting system, a cashless system, or a voucher system

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1	(2) If a tribal gaming regulatory authority TGRA authorizes new or modified software or
2	hardware to be made available for play or use without prior testing laboratory review, the tribal
3	gaming regulatory authority shall TGRA must thereafter require the hardware or software
4	manufacturer to:_
5	(i) Immediately advise other users of the same hardware or software of the importance and
6	availability of the update;_
7	(ii) Immediately submit the new or modified hardware or software to a testing laboratory for
8	testing and verification of compliance with this part and any applicable provisions of parts 542
9	andpart 543 of this chapter that are testable by the testing laboratory; and_
10	(iii) Immediately provide the tribal gaming regulatory authority TGRA with a software signature
11	verification tool meeting the requirements of § 547.8(f) for any new or modified software
12	(3) If a tribal gaming regulatory authority TGRA authorizes a software or hardware modification
13	under this paragraph, it shallmust maintain a record of the modification and a copy of the testing
14	laboratory report so long as the Class II gaming system that is the subject of the modification remains
15	available to the public for play and shallmust make the record available to the Commission upon
16	request. The Commission will only make available for public review records or portions of records
17	subject to release under the Freedom of Information Act, <u>5 U.S.C. 552;</u> the Privacy Act
18	of 1974, <u>5 U.S.C. 552a;</u> or the Indian Gaming Regulatory Act, <u>25 U.S.C. 2716(a)</u> . <u>25</u>
19	<u>U.S.C. 2716(a).</u>
20	(e) Compliance by charitable gaming operations. This part shalldoes not apply to charitable
21	gaming operations, provided that:

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1	(1) The tribal government determines that the organization sponsoring the gaming operation is a
2	charitable organization;_
3	(2) All proceeds of the charitable gaming operation are for the benefit of the charitable
4	organization;_
5	(3) The tribal gaming regulatory authority TGRA permits the charitable organization to be exempt
6	from this part;_
7	(4) The charitable gaming operation is operated wholly by the charitable
8	organization's employees or volunteers; and_
9	(5) The annual gross gaming revenue of the charitable gaming operation does not exceed
10	\$1,000,000.
11	(f) Testing laboratories.
12	(1) A testing laboratory may provide the examination, testing, evaluating and reporting functions
13	required by this section provided that:
14	(i) It demonstrates its integrity, independence and financial stability to the <u>TGRA.</u>
15	(ii) It demonstrates its technical skill and capability to the tribal gaming regulatory authority
16	TGRA.
17	(iii) Half the testing laboratory is not owned or operated by, or affiliated with, the same tribe or
18	tribal gaming regulatory authority, it must be independent from the manufacturer and gaming
19	operator for whom it is providing the testing, evaluating, and reporting functions required by this
20	section(iv) The tribal gaming regulatory authority:TGRA:

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1	(A) Makes a suitability determination of the testing laboratory based upon standards no less
2	stringent than those set out in §§ 533.6(b)(1)(ii) through (v) of this chapter and based upon no less
3	information than that required by § 537.1 of this chapter, or_
4	(B) Accepts, in its discretion, a determination of suitability for the testing laboratory made by any
5	other gaming regulatory authority in the United States
6	(v)_ After reviewing the suitability determination and the information provided by the testing
7	laboratory, the tribal gaming regulatory authority TGRA determines that the testing laboratory is
8	qualified to test and evaluate Class II gaming systems
9	(2) The tribal gaming regulatory authority shall: TGRA must:
10	(i) Maintain a record of all determinations made pursuant to paragraphs (f)(1)(iviii) and
11	$(f)(1)(\frac{\mathbf{viv}}{\mathbf{viv}})$ of this section for a minimum of three years and $\frac{\mathbf{shall}\mathbf{must}}{\mathbf{viv}}$ make the records available to
12	the Commission upon request. The Commission will only make available for public review records
13	or portions of records subject to release under the Freedom of Information Act, <u>5 U.S.C. 552;5</u>
14	<u>U.S.C. 552;</u> the Privacy Act of 1974, <u>5 U.S.C. 552a;</u> or the Indian Gaming Regulatory
15	Act, <u>25 U.S.C. 2716(a).25 U.S.C. 2716(a).</u>
16	(ii) Place the testing laboratory under a continuing obligation to notify it of any adverse
17	regulatory action in any jurisdiction where the testing laboratory conducts business
18	(iii) Require the testing laboratory to provide notice of any material changes to the information
19	provided to the tribal gaming regulatory authority. TGRA.
20 21	§ 547.5 What are the rules of interpretation and of general application for this part?

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1	— (a) Minimum standards. A tribal gaming regulatory authority may establish and implement
2	additional technical standards that are as stringent as, or more stringent than, those set out in this part.
3	
4	(b) Only applicable standards apply. Gaming equipment and software used with Class II gaming-
5	systems shall meet all applicable requirements of this part. For example, if a Class II gaming system
6	lacks the ability to print or accept vouchers, then any standards that govern vouchers do not apply.
7	
8	(c) Fairness. No Class II gaming system shall cheat or mislead users. All prizes advertised shall be-
9	available to win. No progressive prize shall have a probability of winning less than 1 in 100,000,000.
10 11	No other prize shall have a probability of winning less than 1 in 50,000,000.
12	(d) Approved equipment and software only. All gaming equipment and software used with Class II
13	gaming systems shall be identical in all respects to a prototype reviewed and tested by a testing
14	laboratory and approved for use by the tribal gaming regulatory authority pursuant to § 547.4(a)
15	through (c). Unapproved software shall not be loaded onto or stored on any program storage medium
16	used in a Class II gaming system, except as provided in § 547.4(d).
17	
18	(e) Proper functioning. All gaming equipment and software used with Class II gaming systems shall
19	perform according to the manufacturer's design and operating specifications.
20	
21	(f) No Limitation of Technology. This part should not be interpreted to limit the use of technology or
22	to preclude the use of technology not specifically referenced.
23	
24	(g) Severability. If any provision of this part is declared invalid by a court of competent jurisdiction,
25	such decision shall not affect the remainder of this part.
26	§ 547.6_What are the minimum technical standards for enrolling and enabling Class II
27	gaming system components?-
28	
29	(a) General requirements. Class II gaming systems shall provide a method to:
30	(1) Enroll and unenroll system components;
31	(2) Enable and disable specific system components.
32	(b) Specific requirements. Class II gaming systems shall:
33	(1) Ensure that only enrolled and enabled system components participate in gaming; and
34	(2) Ensure that the default condition for components shall be unenrolled and disabled.

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1	(a) General requirements. Class II gaming systems must provide a method to:
2	(1) Enroll and unenroll system components;
3	(2) Enable and disable specific system components.
4	(b) Specific requirements. Class II gaming systems must:
5	(1) Ensure that only enrolled and enabled system components participate in gaming; and
6	(2) Ensure that the default condition for components must be unenrolled and disabled.
7	§ 547.7_What are the minimum technical hardware standards applicable to Class II gaming
8	systems?
9	(a) General requirements. (1) The Class II gaming system shall operate in compliance with
10	applicable regulations of the Federal Communications Commission.
11	(2) Prior to approval by the tribal gaming regulatory authority pursuant to § 547.4(c), the Class II
12	gaming system shall have obtained from Underwriters' Laboratories, or its equivalent, relevant
13	certification(s) required for equipment of its type, including but not limited to certifications for liquid
14	spills, electromagnetic interference, etc.
15	(b)
16	(a)Printed circuit boards.
17	(1) Printed circuit boards that have the potential to affect the outcome or integrity of the game,
18	and are specially manufactured or proprietary and not offoff-the-shelf, shallshelf, must display a
19	unique identifier such as a part number and/or revision number, which shallmust be updated to reflect
20	new revisions or modifications of the board.

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1	(2) Switches or jumpers on all circuit boards that have the potential to affect the outcome or
2	integrity of any game, progressive award, financial instrument, cashless transaction, voucher
3	transaction, or accounting records shallmust be capable of being sealed.
4	(e (b) Electrostatic discharge. Class II gaming system components accessible to the public
5	shallmust be constructed so that they exhibit immunity to human body electrostatic discharges on
6	areas exposed to contact. Static discharges of +/-±15 kV for air discharges and +/-±7.5 kV for contact
7	discharges maymust not cause damage, or inhibit operation or integrity of the Class II gaming
8	system.
9	(d_(c) Physical enclosures. Physical enclosures shallmust be of a robust construction designed to
10	resist determined illegal entry. All protuberances and attachments such as buttons, identification
11	plates, and labels shallmust be sufficiently robust to avoid unauthorized removal.
12	(e _(d) <i>Player interface</i> . The player interface shallmust display the serial number and date of
13	manufacture and include a method or means to:
14	(1) Display information to a player; and
15	(2) Allow the player to interact with the Class II gaming system.
16	(f (e) Account access components. A Class II gaming system component that reads account access
17	media shallmust be located within a secure, locked or tamper-evidentevident area or in a cabinet or
18	housing that is of a robust construction designed to resist determined illegal entry and to protect
19	internal components. In addition, the account access component:
20	(1) ShallMust be constructed so that physical tampering leaves evidence of such tampering; and_
21	(2) ShallMust provide a method to enable the Class II gaming system to interpret and act upon
22	valid or invalid input or error condition.

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1	(g (f) Financial instrument storage components. Any Class II gaming system components that store
2	financial instruments and that are not operated under the direct control of a gaming operation
3	employee or agent shallmust be located within a secure and locked area or in a locked cabinet or
4	housing that is of a robust construction designed to resist determined illegal entry and to protect
5	internal components.
6	(h (g) Financial instrument acceptors.
7 8	(1) Any Class II gaming system components that handle financial instruments and that are not operated under the direct control of an agent shall:must:
9	(i) Be located within a secure, locked and tamper-evidentevident area or in a locked cabinet or
10	housing that is of a robust construction designed to resist determined illegal entry and to protect
11	internal components;_
12	(ii) Be able to detect the entry of valid or invalid financial instruments and to provide a method to
13	enable the Class II gaming system to interpret and act upon valid or invalid input or error condition;
14	and_
15	(iii) Be constructed to permit communication with the Class II gaming system of the accounting
16	information required by § 547.9(a) and by applicable provisions of any Commission and tribal
17	gaming regulatory regulations governing minimum internal control standards.
18	(2) Prior to completion of a valid financial instrument transaction by the Class II gaming system,
19	no monetary amount related to that instrument shallmust be available for play. For example, credits
20	shallmust not be available for play until currency or coupon inserted into an acceptor is secured in the
21	storage component

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1	(3) The monetary amount related to all valid financial instrument transactions by the Class II
2	gaming system shallmust be recorded as required by § 547.9(a) and the applicable provisions of any
3	Commission and tribal gaming regulatory authority TGRA regulations governing minimum internal
4	control standards.
5	(i (h) Financial instrument dispensers.
6	(1) Any Class II gaming system components that dispense financial instruments and that are not
7	operated under the direct control of a gaming operation employee or agent shall:must:
8	(i) Be located within a secure, locked and tamper-evident area or in a locked cabinet or
9	housing that is of a robust construction designed to resist determined illegal entry and to protect
0	internal components;_
1	(ii) Provide a method to enable the Class II gaming system to interpret and act upon valid or
12	invalid input or error condition; and_
13	(iii) Be constructed to permit communication with the Class II gaming system of the accounting
4	information required by § 547.9(a) and by applicable provisions of any Commission and tribal
15	gaming regulatory regulations governing minimum internal control standards.
16	(2) The monetary amount related to all valid financial instrument transactions by the Class II
17	gaming system shallmust be recorded as required by § 547.9(a), the applicable provisions of parts
18	542 and part 543 of this chapter, and any tribal gaming regulatory authority TGRA regulations
9	governing minimum internal control standards.
20	(i) Game Outcome Determination Components. Any Class II gaming system logic components
21	that affect the game outcome and that are not operated under the direct control of a gaming operation

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1	employee or agent shallmust be located within a secure, locked and tamper-evident area or in a
2	locked cabinet or housing that is of a robust construction designed to resist determined illegal entry
3	and to protect internal components. DIP switches or jumpers that can affect the integrity of the Class
4	II gaming system must be capable of being sealed by the tribal gaming regulatory authority.(kTGRA.
5	——(i) Door access detection. All components of the Class II gaming system that are locked in order
6	to meet the requirements of this part shallmust include a sensor or other methods to monitor an open
7	door. A door open sensor, and its components or cables, shallmust be secure against attempts to
8	disable them or interfere with their normal mode of operation;
9	(1. (k) Separation of functions-o/no limitations on technology. Nothing herein shallmust prohibit the
10	account access component, financial instrument storage component, financial instrument acceptor,
11	and financial instrument dispenser from being included within the same component, or being
12	separated into individual components
13	§ 547.8_What are the minimum technical software standards applicable to Class II gaming
14	systems?
15	This section provides general software standards for Class II gaming systems for the play of
16	Class II games
17	(a) Player interface displays.
18	(1) If not otherwise provided to the player, the player interface shallmust display the following:
19	(i) The purchase or wager amount;
20	(ii) Game results; and

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1	(iii) Any player credit balance.
2	(2) Between plays of any game and until the start of the next play, or until the player selects a
3	new game option such as purchase or wager amount or card selection, whichever is earlier, if not
4	otherwise provided to the player, the player interface shallmust display:
5	(i) The total purchase or wager amount and all prizes and total credits won for the last game
6	played;
7	(ii) The final results for the last game played, including entertaining displays of results, if any; and
9	(iii) Any default purchase or wager amount for the next play.
10	(b) Game initiation and play.
11	(1) Each game played on the Class II gaming system shallmust follow and not deviate from a
12	constant set of rules for each game provided to players pursuant to § 547.16. Any change in rules
13	constitutes a different game. There shallmust be no automatic or undisclosed changes of rules.
14	(2) For bingo games and games similar to bingo, the The Class II gaming system shall must not
15	alter or allow to be altered the card permutations or game rules used for play of a Class II game
16	unless specifically chosen by the player prior to commitment to participate in the game. No duplicate
17	cards shallmust be sold for any common draw
18	(3) No game play shallmay commence and, no financial instrument or credit shallmay be
19	accepted on the affected player interface, in the presence of any fault condition that affects the
20	outcome of the game, open door, or while in test, audit, or locklock-up mode.

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1	(4) The player must choose to participate in the play of a game.
2	(c) Audit Mode.
3	(1) If an audit mode is provided, the Class II gaming system shallmust provide, for those
4	components actively involved in the audit:_
5	(i) All accounting functions required by § 547.9, by applicable provisions of any Commission
6	regulations governing minimum internal control standards, and by any internal controls adopted by
7	the tribe or tribal gaming regulatory authority; TGRA;
8	(ii) Display player interface identification; and
9	(iii) Display software version or game identification;
10	(2) Audit mode shallmust be accessible by a secure method such as an employeeagent PIN and,
11	key, or other auditable access control.
12	(3) Accounting function data shallmust be accessible by an authorized personagent at any time,
13	except during a payout, during a handpay, or during play
14	(4) The Class II gaming system shallmust disable financial instrument acceptance on the affected
15	player interface while in audit mode, except during financial instrument acceptance testing.
16	(d) Last game recall. The last game recall function shall:must:
17	(1) Be retrievable at all times, other than when the recall component is involved in the play of a
18	game, upon the operation of an external key-switch entry of an audit card, or a similar
19	method;_

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1	(2) Display the results of recalled games as originally displayed or in text representation,
2	including entertaining display results implemented in video, rather than electro-mechanical, form, if
3	any, so as to enable the tribal gaming regulatory authority TGRA or operator to clearly identify the
4	game sequences and results that occurred;
5	(3) Allow the Class II gaming system component providing game recall, upon return to normal
6	game play mode, to restore any affected display to the positions, forms and values displayed before
7	access to the game recall information; and_
8	(4) Provide the following information for the current and previous four games played and
9	shallmust display:_
10	(i) GamePlay start time, end time, and date;_
11	(ii) The total number of credits at the start of play, less the purchase or wager amount;
12	(iii) The purchase or wager amount;_
13	(iv) The total number of credits at the end of play; and
14	(v) The total number of credits won as a result of the game recalled, and the value in dollars and
15	cents for progressive prizes, if different:
16	(vi) For bingo games and games similar to bingo only, also display:
17	(A) The card(s) used by the player;
18	(B) The identifier of the bingo game played;
19	(C) The numbers or other designations drawn, in the order that they were drawn;
20	(D) The numbers or other designations and prize patterns covered on each card;

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1	(E) All prizes won by the player, including winning patterns and entertaining displays
2	implemented in video, rather than electro-mechanical form, if any; and
3	(F) The unique identifier of the card on which prizes were won;
4	(vii) For pull-tab games only, also display:
5	(A) The result(s) of each pull-tab, displayed in the same pattern as on the tangible pull-tab;
6	(B) All prizes won by the player;
7	(C) The unique identifier of each pull tab; and
8	(D) Any other information necessary to fully reconstruct the current and four previous plays.
9	(e) Voucher and credit transfer recall. Notwithstanding the requirements of any other section in
10	this part, a Class II gaming system shallmust have the capacity to:
11	(1) Display the information specified in § 547.11(b)(5)(ii) through (vi) for the last five vouchers
12	or coupons printed and the last five vouchers or coupons accepted; and
13	(2) Display a complete transaction history for the last five cashless transactions made and the last
14	five cashless transactions accepted.
15	(f) Software signature verification. The manufacturer or developer of the Class II gaming system
16	must provide to the testing laboratory and to the tribal gaming regulatory authority TGRA an
17	industry-standardstandard methodology, acceptable to the tribal gaming regulatory authority TGRA,
18	for verifying the Class II gaming system game software. By way of illustration, for game software

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1	stored on rewritable media, such methodologies include signature algorithms and hashing formulas	
2	such as SHASHA-1.	
3	(g) Test, diagnostic, and demonstration modes. If test, diagnostic, and/or demonstration modes	
4	are provided, the Class II gaming system shallmust, for those components actively involved in the	
5	test, diagnostic, or demonstration mode:	
6	(1) Clearly indicate when that component is in the test, diagnostic, or demonstration mode;	
7	(2) Not alter financial data on that component other than temporary data;	
8	(3) Only be available after entering a specific mode;	
9	(4) Disable credit acceptance and payment unless credit acceptance or payment is being tested;	
10	and	
11	(5) Terminate all mode-specific functions upon exiting a mode.	
12	(h) Multi-gameMultigame. If multiple games are offered for player selection at the player	
13	interface, the player interface shall:must:	
14	(1) Provide a display of available games;	
15	(2) Provide the means of selecting among them;	
16	(3) Display the full amount of the player'splayer's credit balance;	
17	(4) Identify the game selected or being played; and	
18	(5) Not force the play of a game after its selection.	

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1	(1) Program interruption and resumption. The Class II gaming system software shallmust be	
2	designed so that upon resumption following any interruption, the system:	
3	(1) Is able to return to a known state;	
4	(2) Shall Must check for any fault condition upon resumption;	
5	(3) ShallMust verify the integrity of data stored in critical memory;_	
6	(4) ShallMust return the purchase or wager amount to the player in accordance with the rules of	
7	the game; and_	
8	(5) ShallMust detect any change or corruption in the Class II gaming system software	
9	(j) Class II gaming system components acting as progressive controllers. This paragraph applies	
10	to progressive controllers and components acting as progressive controllers in Class II gaming	
11	systems	
12	(1) Modification of progressive parameters shallmust be conducted in a secure manner approved	
13	by the tribal gaming regulatory authority TGRA. Such parameters may include:	
14	(i) Increment value;	
15	(ii) Secondary pool increment(s);	
16	(iii) Reset amount(s);	
17	(iv) Maximum value(s); and	
18	(v) Identity of participating player interfaces.	

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1	(2) The Class II gaming system component or other progressive controller shallmust provide a	
2	means of creating a progressive balancing report for each progressive link it controls. At a minimum	
3	that report shallmust provide balancing of the changes of the progressive amount, including	
4	progressive prizes won, for all participating player interfaces versus current progressive amount(s),	
5	plus progressive prizes. In addition, the report shallmust account for, and not be made inaccurate by	
6	unusual events such as:	
7	7 (i) Class II gaming system critical memory clears;	
8	(ii) Modification, alteration, or deletion of progressive prizes;	
9	9 (iii) Offline equipment; or	
10	(iv) Multiple site progressive prizes.	
11	(k) Critical memory.	
12	(1) Critical memory may be located anywhere within the Class II gaming system. Critical	
13	memory is any memory that maintains any of the following data:	
14	(i) Accounting data;	
15	(ii) Current credits;	
16	6 (iii) Configuration data;	
17	(iv) Last game <u>play</u> recall information required by § 547.8(d);_	
18	(v) Game <u>play</u> recall information for the current game <u>play</u> , if incomplete;_	
19	(vi) Software state (the last normal state software was in before interruption);	

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1	(vii) RNG seed(s), if necessary for maintaining integrity;	
2	(viii) Encryption keys, if necessary for maintaining integrity;	
3	(ix) Progressive prize parameters and current values;	
4	(x) The five most recent financial instruments accepted by type, excluding coins and tokens;	
5	(xi) The five most recent financial instruments dispensed by type, excluding coins and tokens; and	
7		
9	(2) Critical memory shallmust be maintained using a methodology that enables errors to be	
10	identified and acted upon. All accounting and recall functions shallmust be verified as necessary to	
11	ensure their ongoing integrity.	
12	(3) The validity of affected data stored in critical memory shallmust be checked after each of the	
13	following events:	
14	(i) Every restart;	
15	(ii) Each attendant paid win;	
16	(iii) Each attendant paid progressive win;	
17	(iv) Each sensored door closure; and	
18	(v) Every reconfiguration, download, or change of prize schedule or denomination requiring	
19	operator intervention or action.	

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- 1 ____(l) Secured access. Class II gaming systems that use a logon or other means of secured access
- 2 | shallmust include a user account lockout after a predetermined number of consecutive failed attempts
- 3 to access system.
- 4 § 547.9 What are the minimum technical standards for Class II gaming system accounting
- 5 functions?
- This section provides standards for accounting functions used in Class II gaming systems.
- 7 (a) Required accounting data. The following minimum accounting data, however named,
- 8 shallmust be maintained by the Class II gaming system.

Title	Description
(1) Amount In	The total value of all financial
	instruments and cashless transactions
	accepted by the Class II gaming
	system. Each type of financial
	instrument accepted by the Class II
	gaming system shall be tracked
	independently per financial instrument
	acceptor, and as required by
	applicable requirements of any
	Commission and tribal gaming
	regulatory authority regulations

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	governing minimum internal control	
	standards.	
(2) Amount Out	The total value of all financial	
	instruments and cashless transactions	
	paid by the Class II gaming system,	
	plus the total value of attendant pay.	
	Each type of financial instrument paid	
	by the Class II Gaming System shall be	
	tracked independently per financial	
	instrument dispenser, and as required	
by applicable requirements of any		
Commission and tribal gaming		
regulatory authority regulations		
governing minimum internal control		
	standards.	
(1) Amount In: The total value of all financial instruments and cashless transactions accepted by the		
Class II gaming system. Each type of financial instrument accepted by the Class II gaming system		
must be tracked independently per financial instrument acceptor, and as required by applicable		
requirements of Commission and TGRA regulations governing minimum internal control standards.		
(2) Amount Out: The	e total value of all financial instruments and cashless transactions paid by	
the Class II gaming system,	plus the total value of attendant pay. Each type of financial instrument	

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1	paid by the Class II Gaming System must be tracked independently per financial instrument	
2	dispenser, and as required by applicable requirements of Commission and TGRA regulations	
3	governing minimum internal control standards.	
4	(b) Accounting data storage. If the Class II gaming system electronically maintains accounting	
5	data:_	
6	(1) Accounting data shallmust be stored with at least eight decimal digits	
7	(2) Credit balances shallmust have sufficient digits to accommodate the design of the game	
8	(3) Accounting data displayed to the player may be incremented or decremented using visual	
9	effects, but the internal storage of this data shallmust be immediately updated in full.	
10	(4) Accounting data shallmust be updated upon the occurrence of the relevant accounting event	
11	(5) Modifications to accounting data shallmust be recorded, including the identity of the	
12	person(s) making the modifications, and be reportable by the Class II gaming system	
13	(c) <i>Rollover.</i> Accounting data that rolls over to zero shallmust not corrupt data	
14	(d) Credit balance display and function.	
15	(1) Any credit balance maintained at the player interface shallmust be prominently displayed at	
16	all times except:_	
17	(i) In audit, configuration, recall and test modes; or	
18	(ii) Temporarily, during entertaining displays of game results.	
19	(2) Progressive prizes may be added to the player'splayer's credit balance provided:	

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	Events Definition and action to be taken	
15		
14	(1) The following events are to be treated as described below:	
13	(a) Fault events.	
12	(a) Fault events. (1) The following events are to be treated as described below:	
11	or other changes of states, and lockup within the Class II gaming system.	
10	This section provides standards for events such as system critical faults, deactivation, door open	
9	§ 547.10 What are the minimum standards for Class II gaming system critical events?	
8	balance drops below one credit.	
7	credits, the Class II gaming system shallmust display the fractional credit when the player credit	
6	(3) If the player credit balance displays in credits, but the actual balance includes fractional	
5	imbalances	
4	player's player's credit balance in a manner that does not mislead the player or cause accounting	
3	(iii) The prize in dollars and cents is converted to player credits or transferred to the	
2	(ii) The progressive accounting data is incremented in number of credits; or	
1	(i) The player credit balance is maintained in dollars and cents;	

Events	Definition and action to be taken
(i) Component fault	Reported when a fault on a component is detected. When possible, this event message should indicate what the nature of the fault is.
is detected. When possible, this event	

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message should indicate what the	
nature of the fault is.	
(ii) Financial storage component full	Reported when a financial instrument acceptor or dispenser includes storage, and it becomes full. This event message should indicate what financial storage component is full.
acceptor or dispenser includes	
storage, and it becomes full. This	
event message should indicate what	
financial storage component is full.	
(iii) Financial output component empty	Reported when a financial instrument <u>dispenser</u> is empty. The event message should indicate which financial output component is affected, and whether it is empty.
dispenser is empty. The event message	
should indicate which financial output	
component is affected, and whether it	
is empty.	
(iv) Financial component fault	Reported when an occurrence on a financial component results in a known fault state.
financial component results in a known	<u> </u>
fault state.	
(v) Critical memory error	Some critical memory error has Some critical memory error has occurred. When a non-correctable critical memory error has occurred, the data on the Class II gaming system component can no longer be considered reliable. Accordingly, any game play on the affected component must cease immediately, and an

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	appropriate message must be displayed, if possible.
occurred. When a non-correctable	
critical memory error has occurred,	
the data on the Class II gaming system	
component can no longer be considered	
reliable. Accordingly, any game play	
on the affected component shall cease	
immediately, and an appropriate	
message shall be displayed, if	
possible.	
(vi) Progressive communication fault	If applicable; when communications with a progressive controller component is in a known fault state.
with a progressive controller	
component is in a known fault state.	
(vii) Program storage medium fault	The software has failed its ownAny game play on the affected component must cease immediately, and an appropriate message must be displayed, if possible.
internal security check or the medium	
itself has some fault.	
Any game play on the affected	
component shall cease immediately, and	
an appropriate message shall be	

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	displayed, if possible.
1	
2	(2) The occurrence of any event identified in paragraph (a)(1) of this section shallmust be
3	recorded
4	(3) Upon clearing any event identified in paragraph (a)(1) of this section, the Class II gaming
5	system shall; <u>must:</u>
6	(i) Record that the fault condition has been cleared;_
7	(ii) Ensure the integrity of all related accounting data; and_
8	(iii) In the case of a malfunction, return a player'splayer's purchase or wager according to the
9	rules of the game
10	(b) Door open/close events.
11	(1) In addition to the requirements of paragraph (a)(1) of this section, the Class II gaming system
12	shallmust perform the following for any component affected by any sensored door open event:
13	(i) Indicate that the state of a sensored door changes from closed to open or opened to closed;
14	(ii) Disable all financial instrument acceptance, unless a test mode is entered;_
15	(iii) Disable game play on the affected player interface;
16	(iv) Disable player inputs on the affected player interface, unless test mode is entered; and
17	(v) Disable all financial instrument disbursement, unless a test mode is entered.

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1	(2) The Class II gaming system may return th	e component to a ready to play state when all
2	sensored doors are closed.	
3	(c) Non-fault events. (1) The following non-fault	events are to be treated as described below, if
4	applicable:	
5	(c) Non-fault events. (1) The following non-fault events.	ault events are to be treated as described below, if
	Event	Definition and action to be taken Taken
	(i) Player interface power off during play	This condition is reported by the <u>affected</u> component(s) to indicate it has been turned on.
	play affected component(s) to indicate	
	power has been lost during game play.	
	(ii) Player interface power on	This condition is reported by the <u>affected</u> component(s) to indicate it has been turned on
	ŧ	affected component(s) to indicate it
	1	nas been turned on.
	(iii) Financial instrument storage	This condition is reported when a
	(iii) Financial instrument storage component container/stacker removed	This condition is reported when a financial instrument storage container has been removed. The event message should indicated which storage container was removed
	has been removed. The event message	

should indicate which storage

container was removed.

7

§ 547.11_What are the minimum technical standards for money and credit handling?

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1	This section provides standards for money and credit handling by a Class II gaming system
2	(a) Credit acceptance, generally.
3	(1) Upon any credit acceptance, the Class II gaming system shallmust register the correct number
4	of credits on the player's player's credit balance.
5	(2) The Class II gaming system shallmust reject financial instruments deemed invalid
6	(b) Credit redemption, generally.
7	(1) For cashable credits on a player interface, players shallmust be allowed to cash out and/or
8	redeem those credits at the player interface except when that player interface is:
9	(i) Involved in the play of a game;
10	(ii) In audit mode, recall mode or any test mode;
11	(iii) Detecting any sensored door open condition;
12	(iv) Updating the player credit balance or total win accounting data; or
13	(v) Displaying a fault condition that would prevent eashcash-out or credit redemption. In this
14	case a fault indication shallmust be displayed.
15	(2) For cashable credits not on a player interface, the player shallmust be allowed to cash out
16	and/or redeem those credits at any time
17	(3) A Class II gaming system shallmust not automatically pay an award subject to mandatory tax
18	reporting or withholding.

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1	(4) Credit redemption by voucher or coupon shallmust conform to the following:_
2	(i) A Class II gaming system may redeem credits by issuing a voucher or coupon when it
3	communicates with a voucher system that validates the voucher or coupon
4	(ii) A Class II gaming system that redeems credits by issuing vouchers and coupons shallmust
5	either:_
6	(A) Maintain an electronic record of all information required by paragraphs (b)(5)(ii) through (vi)
7	of this section; or_
8	(B) Generate two identical copies of each voucher or coupon issued, one to be provided to the
9	player and the other to be retained within the machine for audit purposes
10	(5) Valid vouchers and coupons shall from a voucher system must contain the following:
11	(i) Gaming operation name and location;
12	(ii) The identification number of the Class II gaming system component or the player interface
13	number, as applicable;
14	(iii) Date and time of issuance;
15	(iv) Alpha and numeric dollar amount;
16	(v) A sequence number;
17	(vi) A validation number that:
18	(A) Is produced by a means specifically designed to prevent repetition of validation numbers; and

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1	(B) Has some form of checkcode or other form of information redundancy to prevent prediction
2	of subsequent validation numbers without knowledge of the checkcode algorithm and parameters;
3	(vii) For machinemachine readable vouchers and coupons, a bar code or other form of machine
4	readable representation of the validation number, which shallmust have enough redundancy and error
5	checking to ensure that 99.9% of all misreads are flagged as errors;
6	(viii) Transaction type or other method of differentiating voucher and coupon types; and
7	(ix) Expiration period or date.
8	(6) Transfers from an account may not exceed the balance of that account.
9	(7) For Class II gaming systems not using dollars and cents accounting and not having odd cents
10	accounting, the Class II gaming system shallmust reject any transfers from voucher payment systems
11	or cashless systems that are not even multiples of the Class II gaming system denomination.
12	(8) Voucher redemption systems shall include the ability to report redemptions per redemption
13	location or user
14	(8) Voucher redemption systems must include the ability to report redemptions per redemption
15	location or user.
16	§ 547.12 What are the minimum technical standards for downloading on a Class II gaming
17	system?
18	This section provides standards for downloading on a Class II gaming system.
19	(a) Downloads.
20	(1) Downloads are an acceptable means of transporting approved content, including but not

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1	limited to software, files, data, and prize schedules.
2	(2) Downloads of software, games, prize schedules, or other download packages shall be conducted
3	only as authorized by the tribal gaming regulatory authority.
4	(3) Downloads shall_
5	(2) <u>Downloads must</u> use secure methodologies that will deliver the download data without
6	alteration or modification, in accordance with § 547.15(a).
7	(4 _
8	(3) Downloads conducted during operational periods shallmust be performed in a manner that
9	will not affect game play.
10	(5 _
11	(4) Downloads shallmust not affect the integrity of accounting data.
12	(6 _
13	(5) The Class II gaming system or the tribal gaming regulatory authority shall log each
14	downloadmust be capable of any download package. Each log record shall contain as a
15	minimum:providing:
16	(i) The time and date of the initiation of the download;
17	(ii) The time and date of the completion of the download;
18	(iii) The Class II gaming system components to which software was downloaded;
19	(iv) The version(s) of download package and any software downloaded. Logging of the unique
20	software signature will satisfy this requirement;
21	(v) The outcome of any software verification following the download (success or failure); and
22	(vi) The name and identification number, or other unique identifier, of any individual(s)
23	conducting or scheduling a download.
24	(b) Verifying downloads. Following download of any game software, the Class II gaming-
25	system shall verify the downloaded software using a software signature verification method

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1	that meets the requirements of § 547.8(f). Using any method it deems appropriate, the tribal
2	gaming regulatory authority shall confirm the verification.
3	(b) Verifying downloads. Downloaded software on a Class II gaming system must be capable of
4	being verified by the Class II gaming system using a software signature verification method that
5	meets the requirements of § 547.8(f).
6 7	§ 547.13 What are the minimum technical standards for program storage media?
8	This section provides minimum standards for removable, (rere-)writable, and nonwritablenon-
9	rewritable storage media in Class II gaming systems
10	(a) Removable program storage media. All removable program storage media shallmust maintain
11	an internal checksum or signature of its contents. Verification of this checksum or signature is to be
12	performed after every restart. If the verification fails, the affected Class II gaming system
13	component(s) shallmust lock up and enter a fault state.
14	(b) Nonrewritable Nonrewritable program storage media.
15	(1) All EPROMs and Programmable Logic Devices (PLDs) that have erasure windows shallmust
16	be fitted with covers over their erasure windows
17	(2) All unused areas of EPROMs shallmust be written with the inverse of the erased state (e.g.,
18	zero bits (00 hex) for most EPROMs), random data, or repeats of the program data
19	(3) Flash memory storage components intended to have the same logical function as ROM, i.e.
20	not tomust be dynamically written, shall be writewrite-protected or otherwise protected from
21	unauthorized modification.

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1	(4) The write cycle shallmust be closed or finished for all CDCD-ROMs such that it is not
2	possible to write any further data to the CD
3	(5) Write protected hard disks are permitted if the hardware means of enabling the write protect is
4	easily viewable and can be sealed in place Write protected hard disks are permitted using software
5	write protection verifiable by a testing laboratory.
6	(c) Writable and rewritable program storage media.
7	(1) Writable and rewritable program storage, such as hard disk drives, Flash memory, writable
8	CD-ROMsROMs, and writable DVDs, may be used provided that the software stored thereon may be
9	verified using the mechanism provided pursuant to § 547.8(f).
10	(2) Program storage shall be structured so there is a verifiable separation of fixed data (e.g. program,
11	fixed parameters, DLLs) and variable data.
12	(d) Identification of program storage media. All program storage media that is not rewritable in
13	circuit, (e.g. EPROM, CD-ROM) shall be uniquely identified, displaying:
14	(1) Manufacturer;
15	(2) Program identifier;
16	(3) Program version number(s); and
17	(4) Location information, if critical (e.g. socket position 3 on the printed circuit board).
18	(2) Program storage must be structured so there is a verifiable separation of fixed data (such as
19	program, fixed parameters, DLLs) and variable data.
20	(d) Identification of program storage media. All program storage media that is not rewritable in
21	circuit, (EPROM, CD-ROM) must be uniquely identified, displaying:

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1	(1) Manufacturer;
2	(2) Program identifier;
3	(3) Program version number(s); and
4	(4) Location information, if critical (socket position 3 on the printed circuit board).
5	§ 547.14_What are the minimum technical standards for electronic random number
6	generation?
7	This section provides minimum standards for electronic RNGs in Class II gaming systems.
8	(a) <i>Properties</i> . All RNGs shallmust produce output having the following properties:_
9	(1) Statistical randomness;
10	(2) Unpredictability; and
11	(3) Non- <u>repeatability.</u>
12	(b) Statistical Randomness.
13	(1) Numbers or other designations produced by an RNG shallmust be statistically random
14	individually and in the permutations and combinations used in the application under the rules of the
15	game. For example, if a bingo game with 75 objects with numbers or other designations has a
16	progressive winning pattern of the five numbers or other designations on the bottom of the card, and
17	the winning of this prize is defined to be the five numbers or other designations that are matched in
18	the first five objects drawn, the likelihood of each of the 75C5 combinations are to be verified to be
19	statistically equal.

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1	(2) Numbers or other designations produced by an RNG shallmust pass the statistical tests for
2	randomness to a 99% confidence level, which may include:
3	(i) ChiMandatory statistical tests for randomness include:
4	(A) Chi-square test;
5	(ii) Equi-distribution (frequency) test;
6	(iii) Gap test;
7	(iv) Poker test;
8	(v) Coupon collector's test;
9	(vi) Permutation test;
10	(vii) Run_
11	(B) Runs test (patterns of occurrences shallmust not be recurrent);
12	(viii) Spectral test;
13	(ix and
14	(C) Serial correlation test potency and degree of serial correlation (outcomes shallmust be
15	independent from the previous game); and
16	(<u>x).</u>
17	(ii) Where applicable statistical tests for randomness may include:
18	(A) Equi-distribution (frequency) test;
19	(B) Gap test;
20	(C) Poker test;

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1	(D) Coupon collector's test;
2	(E) Permutation test;
3	(F) Spectral test; or
4	(G) Test on subsequences.
5	(c) Unpredictability.
6	(1) It shallmust not be feasiblepossible to predict future outputs of an RNG, even if the algorithm
7	and the past sequence of outputs are known.
8	(2) Unpredictability shallmust be ensured by reseeding reseeding or by continuously cycling the
9	RNG, and by providing a sufficient number of RNG states for the applications supported.
10	(3) ReRe-seeding may be used where the rere-seeding input is at least as statistically random as,
11	and independent of, the output of the RNG being rere-seeded.
12	(d) NonNon-repeatability. The RNG shallmust not be initialized to reproduce the same output
13	stream that it has produced before, nor shallmust any two instances of an RNG produce the same
14	stream as each other. This property shallmust be ensured by initial seeding that comes from:
15	(1) A source of ""true"" randomness, such as a hardware random noise generator; or
16	(2) A combination of timestamps, parameters unique to a Class II gaming system, previous RNG
17	outputs, or other, similar method.
18	(e) General requirements.

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1	(1) Software that calls an RNG to derive game outcome events shallmust immediately use the
2	output returned in accordance with the game rules
3	(2) The use of multiple RNGs is permitted as long as they operate in accordance with this
4	section
5	(3) RNG outputs shallmust not be arbitrarily discarded or selected
6	(4) Where a sequence of outputs is required, the whole of the sequence in the order generated
7	shallmust be used in accordance with the game rules
8	(5) The Class II gaming system shallmust neither adjust the RNG process or game outcomes
9	based on the history of prizes obtained in previous games nor makeuse any reflexive software or
10	secondary decision that affects the results shown to the player or game outcome. Nothing in this
11	paragraph shall prohibit the use of entertaining displays.
12	(f) Scaling algorithms and scaled numbers. An RNG that provides output scaled to given ranges
13	shall:must:
14	(1) Be independent and uniform over the range;_
15	(2) Provide numbers scaled to the ranges required by game rules, and notwithstanding the
16	requirements of paragraph (e)(3) of this section, may discard numbers that do not map uniformly
17	onto the required range but shallmust use the first number in sequence that does map correctly to the
18	range;
19	(3) Be capable of producing every possible outcome of a game according to its rules; and
20	(4) Use an unbiased algorithm. A scaling algorithm is considered to be unbiased if the measured bias
21	is no greater than 1 in 100 million.

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1	(3) Be capable of producing every possible outcome of a game according to its rules; and
2	(4) Use an unbiased algorithm and any bias must be reported to the TGRA.
3	§ 547.15_What are the minimum technical standards for electronic data communications
4	between system components?
5	This section provides minimum standards for electronic data communications with gaming
6	equipment or components used with Class II gaming systems.
7	(a) Sensitive data. Communication of sensitive data shallmust be secure from eavesdropping,
8	access, tampering, intrusion or alteration unauthorized by the tribal gaming regulatory
9	authorityTGRA. Sensitive data shall include includes, but is not be-limited to:
10	(1) RNG seeds and outcomes;
11	(2) Encryption keys, where the implementation chosen requires transmission of keys;
12	(3) PINs;
13	(4) Passwords;
14	(5) Financial instrument transactions;
15	(6) Transfers of funds;
16	(7) Player tracking information;
17	(8) Download Packages; and
18	(9) Any information that affects game outcome.

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1	(b) Wireless communications.
2	(1) Wireless access points shallmust not be accessible to the general public.
3	(2) Open or unsecured wireless communications are prohibited.
4	(3) Wireless communications shallmust be secured using a methodology that makes
5	eavesdropping, access, tampering, intrusion or alteration impractical. By way of illustration, such
6	methodologies include encryption, frequency hopping, and code division multiplex access (as in cell
7	phone technology).
8	(c) Methodologies shallmust be used that will ensure the reliable transfer of data and provide a
9	reasonable ability to detect and act upon any corruption of the data.
10	
11	(d) Class II gaming systems shall record detectable, unauthorized access or intrusion attempts.
12	(e) Remote communications shall only be allowed if authorized by the tribal gaming regulatory
13	authority. Class II gaming systems shall have the ability to enable or disable remote access, and the
14	default state shall be set to disabled.
15	(f) Failure of data communications shall not affect the integrity of critical memory.
16	(g) The Class II gaming system shall log the establishment, loss, and re-establishment of data-
17	communications between sensitive Class II gaming system components.
18	(d) Class II gaming systems must record detectable, unauthorized access or intrusion attempts.
19	(e) Remote communications must only be allowed if authorized by the TGRA. Class II gaming
20	systems must have the ability to enable or disable remote access, and the default state must be set to
21	<u>disabled.</u>

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1	(f) Failure of data communications must not affect the integrity of critical memory.
2	(g) The Class II gaming system must log the establishment, loss, and re-establishment of data
3	communications between sensitive Class II gaming system components.
4	§ 547.16 What are the minimum standards for game artwork, glass, and rules?
5	This section provides standards for the display of game artwork, the displays on belly or top
6	glass, and the display and disclosure of game rules, whether in physical or electronic form.
7	(a) Rules, instructions, and prize schedules, generally. The following shallmust at all times be
8	displayed or made readily available to the player upon request:
9	(1) Game name, rules, and options such as the purchase or wager amount stated clearly and
10	unambiguously;
11	(2) Denomination;
12	(3) Instructions for play on, and use of, the player interface, including the functions of all buttons;
13	and
14	(4) A prize schedule or other explanation, sufficient to allow a player to determine the correctness
15	of all prizes awarded, including;
16	(i) The range and values obtainable for any variable prize;
10	(i) The range and values obtainable for any variable prize,
17	(ii) Whether the value of a prize depends on the purchase or wager amount; and
18	(iii) The means of division of any paripari-mutuel prizes; but_

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1	(iv) For bingo and games similar to bingo Class II Gaming Systems, the prize schedule or other
2	explanation need not state that subsets of winning patterns are not awarded as additional prizes
3	(e.g.for example, five in a row does not also pay three in a row or four in a row), unless there are
4	exceptions, which shallmust be clearly stated.
5	(b) Disclaimers. The Class II gaming system shallPlayer Interface must continually display:_
6	(1) "-"Malfunctions void all prizes and plays": or equivalent; and_
7	(2) ""Actual Prizes Determined by Bingo [or other applicable Class II game] Play. Other
8	Displays for Entertainment Only:"" or equivalent.
9	(c) Odds notification. If the odds of hitting any advertised top prize exceeds 100 million to one,
10	the Player Interface must continually display "Odds of winning the advertised top prize exceeds 100
11	million to one" or equivalent.
12	§ 547.17How does a tribal gaming regulatory authority apply for to implement an alternate
13	standard to those required by this part?
14	(a variance from these standards?
15	(a) Tribal Gaming Regulatory Authority) TGRA approval.
16	(1) A tribal gaming regulatory authority TGRA may approve a variance an alternate standard from
17	the requirements ofthose required by this part if it has determined that the variance alternate standard
18	will achieve a level of security and integrity sufficient to accomplish the purpose of the standard it is
19	to replace

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Updated version to correct redline

1	(2)For each enumerated standard for which the tribal gaming regulatory authority approves a-
2	variancean alternate standard, it shallmust submit to the ChairmanChair within 30 days, a detailed
3	report, which shallmust include the following:
4	(i)An explanation of how the variance alternate standard achieves a level of security and
5	integrity sufficient to accomplish the purpose of the standard it is to replace; and
6	(ii)-The variance alternate standard as granted and the record on which it is based.
7	(3)_In the event that the tribal gaming regulatory authority TGRA or the tribe's tribe's government
8	chooses to submit a variance an alternate standard request directly to the Chairman Chair for joint
9	government to government review, the tribal gaming regulatory authority TGRA or tribal government
0	may do so without the approval requirement set forth in paragraph (a) (1) of this section.
1	(b) Chairman Chair Review.
12	(1) The ChairmanChair may approve or object to a variance an alternate standard granted by a
13	tribal gaming regulatory authority
14	(2)_Any objection by the Chairman shallChair must be in written form with an explanation why
15	the variance alternate standard as approved by the tribal gaming regulatory authority TGRA does not
16	provide a level of security or integrity sufficient to accomplish the purpose of the standard it is to
17	replace
18	(3)-If the ChairmanChair fails to approve or object in writing within 60 days after the date of
9	receipt of a complete submission, the variance shall be alternate standard is considered approved by
20	the Chairman Chair. The Chairman and the tribal gaming regulatory authority Chair may, by
21	agreementupon notification to the TGRA, extend this deadline an additional 60 days.

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1	(4)_No variance alternate standard may be implemented until it has been approved by the tribal
2	gaming regulatory authority TGRA pursuant to paragraph (a)(1) of this section or the Chairman Chair
3	has approved pursuant to paragraph (b)(1) of this section.
4	(c) Commission Review. Should the tribal gaming regulatory authority elect to maintain its approval
5	after written objection by the Chairman, the tribal gaming regulatory authority shall be entitled to an
6	appeal to the full Commission in accordance with the following process:
7	(1) Within 60 days of receiving an objection, the tribal gaming regulatory authority shall file a
8	written notice
0	(a) Annual of agreed with the Commission that many include a negreet for an analysmin and t
9	(c) Appeal of appeal with the Commission that may include a request for an oral hearing or it
0	may request that the matter be decided upon written submissions.
1	(2) Within 10 days after filing a notice of appeal the tribal gaming regulatory authority shall file a
12	supplemental statement specifying the reasons why the tribal gaming regulatory authority believes-
13	the Chairman's objection should be reviewed, and shall include supporting documentation, if any.
14	(3) Failure to file an appeal or submit the supplemental statement within the time provided by this
15	section shall result in a waiver of the opportunity for an appeal.
16	(4) If an oral hearing is requested it shall take place within 30 days of the notice of appeal and a
17	record shall be made.
18	(5) If the tribal gaming regulatory authority requests that the appeal be decided on the basis of written
9	submission, the Commission shall issue a written Chair decision within 30 days of receiving the
20	supplemental statement.
21	(6) The Commission shall uphold the objection of the Chairman, only if, upon de novo review of the
22	record upon which the Chairman's. A Chair's decision is based, the Commission determines that the
23	variance approved by the tribal gaming regulatory authority does not achieve a level of security and

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1	integrity sufficient to accomplish the purpose of the standard it is may be appealed pursuant to
2	replace.
3	(7) The Commission shall issue a decision within 30 days of the oral hearing unless the tribal gaming
4	regulatory authority elects to provide the Commission additional time, not to exceed an additional 30
5	days, to issue a decision. In the absence of a decision by the Commission within the time provided,
6	the decision of the tribal gaming regulatory authority shall be deemed affirmed.
7	(8) The Commission's decision shall constitute final agency action. 25 CFR subchapter H.
8	