DISSENTING OPINION OF ACOBA, J.

I would hold that pursuant to Hawai‘i Administrative Rules (HAR) § 11-114-23(a)(1), the prosecution must establish, prior to the introduction of a Blood Alcohol Content (BAC) test result, that the person withdrawing blood must be licensed according to Hawai‘i Revised Statutes (HRS) § 286-152 (1993 & Supp. 1999).[1] Because Plaintiff-Appellee State of Hawai‘i (the prosecution) failed to establish this and the defense expressly questioned compliance with the rule at trial, this case should be remanded for a new trial. However, as to the other points on appeal, the majority has apparently agreed with and adopted the position set forth infra in Parts VI., VII., and VIII. of this opinion.

In addition, I believe that in the public interest, this case should be published inasmuch as it clarifies a rule of law and involves legal issues of public importance. See State v. Uyesugi, No. 23805, 2002 WL 31875587, at *31 (Hawai‘i Dec. 26, 2002) (Appendix A) (Acoba, J., dissenting, joined by Ramil, J.); Torres v. Torres, No. 23089, 2002 WL 31819669, at *36 (Hawai‘i Dec. 17, 2002) (Appendix A) (Acoba, J., dissenting, joined by Ramil, J.).

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[1] HRS § 286-152 was repealed on January 1, 2002 and apparently replaced by HRS § 291E-12 (Supp. 2001). As the alleged act occurred before January 1, 2002, we apply HRS § 286-152.

I.

Defendant-Appellant Jill L. Nunokawa (Defendant) appeals from her conviction of driving under the influence of intoxicating liquor (DUI) in violation of HRS § 291-4(a)(2) (1993 & Supp. 1999),[2] rendered by the district court of the first circuit (the court). On appeal, Defendant argues that the court erred in admitting her BAC test result.

II.

On August 9, 2000, at around 10:25 p.m., Defendant was observed driving a vehicle in the center lane of the south-bound lanes of the Pali Highway. She was subsequently arrested for

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[2] HRS chapter 291, dealing with driving under the influence, was replaced on January 1, 2002. See, e.g., HRS § 291E-1 (Supp. 2001). Because this incident occurred prior to the repeal, HRS § 291-4 is still applicable. The 1999 version of HRS § 291-4 states:

> **Driving under the influence of intoxicating liquor.** (a) A person commits the offense of driving under the influence of intoxicating liquor if:
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> (1) The person operates or assumes actual physical control of the operation of any vehicle while under the influence of intoxicating liquor, meaning that the person concerned is under the influence of intoxicating liquor in an amount sufficient to impair the person's normal mental faculties or ability to care for oneself and guard against casualty;
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> (2) The person operates or assumes actual physical control of the operation of any vehicle with .08 or more grams of alcohol per one hundred milliliters or cubic centimeters of blood or .08 or more grams of alcohol per two hundred ten liters of breath.

HRS § 291E-61(4), the current statute governing DUIs, similarly prohibits driving "[w]ith .08 or more grams of alcohol per one hundred milliliters or cubic centimeters of blood."

speeding and DUI.[3] The officer took her to the Kalihi Police Station in order to determine her BAC.

Defendant elected to undergo a blood test. At approximately 12:17 a.m., Emily Chang, a medical technologist for the City and County Department of Health, drew a blood sample from Defendant. Chang testified to obtaining a Bachelor of Science degree in medical technology from the University of Hawai‘i and having twenty-six years of experience in performing BAC analyses with the City and County and, prior to that, having experience drawing blood at Kaiser Hospital. No other testimony was elicited relating to whether Chang was currently licensed to withdraw blood or the procedures followed in withdrawing Defendant's blood. Upon collecting two vials of Defendant's blood, the samples were placed in a locked container and stored for the night.

The following morning, Chang returned to the laboratory to analyze Defendant's blood. To test the samples, Chang used an Abott VPSS chemistry analyzer (VPSS or VPSS machine). Before performing the test, Chang ran a vial of pure water through the VPSS, then the blood samples, and then several reference samples certified by the manufacturer to have specific concentrations of alcohol used to calibrate the VPSS. Chang related that the two samples of blood could produce different results that could vary by as much as ten percent. Chang ultimately concluded that

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[3] Defendant does not appeal her conviction under HRS § 291C-102 (1993), "[n]oncompliance with speed limit prohibited." Accordingly, that conviction should be affirmed.

Defendant's BAC was 0.12 grams of alcohol per 100 cubic centimeters of blood.

The use of the VPSS, and the technique applied, had been approved by the State of Hawai'i Department of Health and used by Chang's laboratory since 1993. Although the manufacturer specifications suggested monthly maintenance of the machine, Chang recounted that she only performed maintenance on an "as needed basis." She did, however, report that she performed maintenance on the machine three days prior, on August 7, 2000.

Despite objections by Defendant's counsel, the court determined that the BAC test was properly conducted and admitted the result into evidence. On January 16, 2002, the court found Defendant guilty as charged, holding that Defendant was "under the influence of intoxicating liquor as evidenced by the reading of .12 . . . in evidence." The court granted a stay of the sentence pending the results of this appeal.

III.

On appeal, Defendant argues that foundation was not properly laid for the test results because the test was not conducted in compliance with HAR Title 11, Chapter 114 (1993). Specifically, Defendant argues that: 1) Chang was not licensed to draw blood from Defendant; 2) the VPSS machine's margin of error exceeded the allowable deviation; 3) Chang's laboratory failed to participate in a performance evaluation program; and 4)

the VPSS machine was not maintained in compliance with HAR Title 11.

IV.

A.

As to her first argument, Defendant contends that Chang never established that she was a "licensed medical technologist" and, accordingly, the test results did not comply with HAR § 11-114-23(a)(1). HAR § 11-114-23(a)(1) states that "blood shall be drawn only by a qualified person as specified in section 286-152, HRS[.]" In turn, HRS § 286-152 provides that "[n]o person, other than a . . . person licensed in a clinical laboratory occupation under section 321-13, may withdraw blood for the purpose of determining the alcohol concentration or drug content therein[.]" (Emphasis added.). Relatedly, HAR § 11-110-22 states that "[n]o person shall serve as a . . . medical technologist, clinical laboratory specialist, or medical laboratory technician without a current and valid clinical laboratory personnel license issued by the department."

Defendant relies on State v. Ibsen, 6 Haw. App. 550, 735 P.2d 957 (1987). In Ibsen, the Intermediate Court of Appeals (ICA) held that a blood test should be suppressed because there was no evidence on the record that the expert withdrawing blood for the BAC test was a licensed clinical laboratory technologist. See id. at 553, 735 P.2d at 958. The ICA observed that HRS

§ 286-152 (1976) required laboratory technicians to be licensed.[4] See id. Because there was no evidence that the expert was licensed, the ICA vacated the judgement and remanded the case for a retrial. See id.

B.

The burden rests upon the prosecution, prior to the introduction of a test result to establish a foundation "showing that the test result can be relied on as a substantive fact." State v. Souza, 6 Haw. App. 554, 558, 732 P.2d 253, 256 (1987) (citing 29 Am. Jur. 2d Evidence § 823 (1967)). To establish that the results of the BAC test were proper, it was necessary to prove that "(1) [the VPSS] was in proper working order[,] (2) its operator was qualified[,] and (3) the test was properly administered." Id. (citing People v. Adams, 59 Cal. App. 3d 559, 131 Cal. Rptr. 190 (1976); People v. Bowers, 716 P.2d 471 (Colo.

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[4] The ICA examined a previous rule, HAR § 11-111-5(d), which the ICA quoted as stating:

> Blood samples shall be collected form living individuals within three hours of an alleged offense *only by a person authorized by law,* namely a physician, registered nurse or clinical laboratory technologist.

Ibsen, 6 Haw. App. at 552, 735 P.2d at 958 (emphasis in original). Looking to the "authorized by law" language, the ICA referred to HRS § 286-152 (1976), which stated:

> Persons qualified to take blood specimen. No person other than a physician, licensed laboratory technician, or registered nurse may withdraw blood for the purpose of determining the alcoholic content therein. This limitation shall not apply to the taking of a breath specimen.

Id. The ICA, accordingly, held that HRS § 286-152 "clearly requires the laboratory technician to be *licensed*." Id. at 553, 735 P.2d at 958 (emphasis in original).

1986); 2 S. Gard, Jones on Evidence § 14.37 (6th ed. 1972)) (emphasis added).

The record indicates that Chang was licensed by the Department of Health as an "Alcohol Testing Supervisor" and as an "Alcohol Analyst" pursuant to HAR §§ 11-114-19 & 11-114-20. This, however, does not comply with the requirement to have a license to withdraw blood. The licensing requirement of HAR 11-114-23(1) serves at least two separate and distinct purposes from the licensing requirements of HAR §§ 11-114-19 & 11-114-20. First, the drawing of blood involves obvious health and safety matters, including the possibility of infection and/or transmission of blood-borne diseases. Thus the Department of Health has prudently restricted the authorization to do blood withdrawal to those who are licensed to do so. Secondly, and directly related to a proper foundation, is that drawing blood involves the application of medical techniques that could radically affect the analysis of an individual's BAC.

For instance, as raised by Defendant in reference to the court's inquiry for a more specific objection, blood coagulation will increase with contact to glass. See Erwin, Richard E., Defense of Drunk Driving Cases § 17.04[2][d] (Matthew Bender & Co., Inc., 2001) [hereinafter Defense]. Thus, it is necessary to use a specific type of vial with an anticoagulant lining to contain blood after withdrawal. See id. Otherwise, coagulation will interfere with the BAC analysis. Accordingly,

as noted by Defendant, the failure to prove that Chang was licensed to withdraw blood impairs the reliability of the test.

In addition, the use of common skin disinfectants, such as isopropyl alcohol (rubbing alcohol), could be drawn into the needle as it pierces the skin, altering the results of the BAC test. See id. § 17.09 ("The disinfectant solution may be fairly concentrated (e.g., 70% isopropyl alcohol) so that even a small quantity may significantly contaminate the blood specimen."). Thus, one who is familiar with the correct process of blood withdrawal will use a different skin cleaning agent to avoid interference with the subsequent analytical procedure.

Chang's alcohol analysis license differs from the license required under HAR § 11-114-23(1) in that the alcohol analysis license involves chemistry, and not medical techniques. Alcohol analysis techniques and the withdrawal of blood are not the same. Quite simply, these two different processes involve different skills and licensing requirements.

The evidence did not comply with the specific licensing requirements of HAR § 11-114-23(1) and HRS § 286-152. In such circumstances, the necessary knowledge, skill, and technique cannot be inferred and the proper foundation cannot be laid. Thus, evidence of Chang's licensure as required under the Department of Health's administrative rules was necessary in order to lay proper foundation for the BAC results.[5]

[5] The revised HRS chapter 291, enacted subsequent to the case at hand, codifies the requirements laid out in HAR § 11-114-23(a)(1). For (continued...)

V.

The majority holds that "defense counsel waived any challenge to Chang's qualifications to withdraw [Defendant's] blood when he explained to the court that his objection was based upon the maintenance of the VPSS chemistry analyzer and the integrity of the vials of anticoagulants used in the testing procedure[.]"[6] Majority opinion at 3. The majority's conclusion is incorrect, however, inasmuch as Defendant's counsel objected to the "accuracy of the testing procedures and the safeguards that are required" and expressly cited to HAR § 11-114-23(1).[7]

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[5](...continued)
example, HRS § 291E-21 (Supp. 2001) states:

> **Persons qualified to take blood specimen.** No person, other than a physician, registered nurse, phlebotomist deemed qualified by the director of a clinical laboratory that is licensed by the State, or person licensed in a clinical laboratory occupation under section 321-13, may withdraw blood for the purpose of determining the alcohol concentration or drug content therein. This limitation shall not apply to the taking of a breath or urine specimen.

(Boldfaced font in original.) (Emphasis added.)

[6] The majority cites to State v. Matias, 57 Haw. 96, 550 P.2d 900 (1976), for the proposition that an objection based on a specific ground constitutes waiver of all other objections. This case, however, has been distinguished by this court in State v. Reese, 61 Haw. 499, 605 P.2d 935 (1980). In Reese, this court noted that "unlike the case before us, the waiver in [Matias] resulted from a failure by the defendant to object at any time, either before or during trial, to the error sought to be raised on appeal." Here, Defendant clearly raised an objection to the introduction of the BAC test based on both general foundation grounds and by specifically noting the applicable HAR, thus making Matias inapplicable to the case at hand. Furthermore, Matias expressly notes that there is an exception for plain error, see 57 Haw. at 101, 505 P.2d at 904, a point that the majority now ignores.

[7] At trial, Defendant objected to State's exhibit 5, which was the ethanol level sheet that indicated the results of the BAC test:

> THE COURT: Well, there has been an offer?
> [DEFENSE COUNSEL]: Well, I maintain my objections. Specifically, I argue to the Court there hasn't been compliance with the provisions - - -

(continued...)

As mentioned, HAR § 11-114-23(1) mandates that the person withdrawing blood must be licensed pursuant to HRS § 286-152. Because Defendant explicitly referred to this regulation when objecting to the introduction of the BAC test results, it cannot be said that the court was not advised of the basis for this objection.

It is argued that defense counsel failed to articulate a specific basis for his objection to the introduction of the BAC results. Although counsel went into more detail about one objection, it does not mean that that was his only basis for objection. As mentioned above, Defendant plainly set forth the relevant administrative rule by expressly stating the exact section of the HAR. No confusion could occur over what part of the rule Defendant was raising, as this rule states nothing more than that person must be licensed in order to withdraw blood. In addition, in response to the court's questioning, Defendant's counsel plainly responded:

> The other thing is the procedure or requirements that I set forth earlier as to withdrawing by a [sic] blood

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[7](...continued)

> THE COURT: With what, what provision?
> [DEFENSE COUNSEL]: Title 11 -- Title 11, Chapter 114.
> THE COURT: What does it relate to, [defense counsel]?
> [DEFENSE COUNSEL]: It goes to the accuracy of the testing procedures and the safeguards that are required --
> THE COURT: Which one, I mean, you're talking in generalities. Are you saying that because they checked it, don't check it every month, ergo, it's not in strict compliance?
> [DEFENSE COUNSEL]: First of all, 11-114-23(1) --
> THE COURT: 11-14 what?
> [DEFENSE COUSNEL]: -23 subsection (1), subsection (7). 114-22 subsection (a).

(Emphasis added.)

> for certain qualified personnel with certain procedural safeguards. I don't feel I have to label exactly what's missing, but I alluded to the precise subsections that I'm contending have not been complied with strictly and all of these arguments go to the reliability and accuracy of the ultimate test results that are obtained.

(Emphases added.) Hence, it cannot be said that no objection was made in reference to the licensure requirements of HAR § 11-114-23(1), or that this objection was waived. See Matias, 57 Haw. at 101, 550 P.2d at 904 (an objection to the admission of evidence must be "made the subject of an objection noted at the time it was committed or brought to the attention of the court in another manner." (citations omitted)).

Moreover, assuming arguendo that Defendant failed to raise a sufficient objection, Hawai'i Rules of Penal Procedure (HRPP) Rule 52(b) (1994) provides that "[p]lain errors or defects affecting substantial rights may be noticed although they were not brought to the attention of the court." See State v. Schroeder, 76 Hawai'i 517, 532, 880 P.2d 192, 207 (1994) ("where plain error has been committed and substantial rights have been affected thereby, the error may be noticed even though it was not brought to the attention of the trial court"); Matias 57 Haw. at 101, 550 P.2d at 904 (noting that there is an exception for plain error to the rule that objection must be made at trial or otherwise be waived). Inasmuch as the burden rested upon the prosecution to establish that Chang was a licensed laboratory technician, the judgment herein must be vacated and the case remanded. I discuss Defendant's remaining contentions briefly infra.

VI.

Defendant argues that the testing procedure used by Chang violated HAR § 11-114-22 (1995) and the results should not have been admitted. HAR § 11-114-22(c)(2) (1995) provides that "the standard deviation of the [blood alcohol testing] procedure shall not exceed 0.005 grams alcohol/100 milliliters at any sample concentration." Defendant posits that this means no more then a five percent deviation. Chang testified, however, that the BAC test result from the VPSS machine could be in error by as much as plus or minus ten percent between the two samples of Defendant's blood. Accordingly, Defendant argues that the test results are in violation of HAR § 11-114-22(c)(2) because the results are more then a five percent standard deviation.

Defendant uses the terms "standard deviation" and "margin of error" interchangeably. However, these two terms are distinct; one refers to a measurement of accuracy, and the other indicates a calculation of precision. A standard deviation refers to the "measurement of the dispersion in a distribution[,]" People v. McLaurin, 598 N.Y.S.2d 911, 913 n.3 (1993), or the closeness of the results that have been obtained in exactly the same way. On the other hand, a margin of error is the closeness of a measurement to its true or accepted value. See David S. Moore, Statistics: Concepts and Controversies 15-21 (W.H. Freeman & Co. 1985) (1979) ("A margin of error . . . is a direct measure of precision"); American Statistical Association, What is a Margin of Error?, (1993) at http://www.amstat.org/sections/srms/ ("The 'margin of error' is a

common summary of sampling error . . . which quantifies uncertainty about a survey result."). Thus, one could have a high margin of error (the potential range of inaccuracy) that occurs very infrequently, thus causing a low standard deviation. Conversely, one could have a high standard deviation (the results are frequently inconsistent), but a low margin of error (the numbers produced are within a small zone of the correct answer).

In the present case, Chang testified that results could vary as much as .01 percent. This comment refers to a margin of error and not to a standard deviation. Thus, Chang's comment does not implicate HAR § 11-114-22(c)(2), inasmuch as the rule refers to a standard deviation.

Moreover, HAR § 11-114-22 does not create requirements for each sample taken, but instead pertains to Department of Health approval of the BAC testing procedures. The title of HAR § 11-114-22 is "Testing procedure approvals[,]" indicating standards for the approval of the overall methodology, whereas HAR §§ 11-114-23 ("[s]ample collection procedures") and 11-114-24 ("[t]esting of samples") apply to the procedure used in testing each individual sample. Neither of these two sections includes language referring to a margin of error or a standard deviation requirement.

VII.

Defendant maintains that Chang failed to testify about her compliance with the "performance evaluation program"

requirements of HAR § 11-114-21. However, there is no indication the prosecution is under any obligation to prove that each section of HAR Title 11 was individually complied with, nor does Defendant cite to any case law for this proposition. Chang's undisputed testimony indicated that the requirements of HAR Title 11 were met. Therefore, on this ground, the court did not err in admitting the BAC test.

VIII.

Defendant asserts that maintenance of the VPSS machine was not conducted on a month-to-month basis in strict compliance with Title 11. It is necessary to establish that the VPSS machine was "in proper working order[,]" Souza, 5 Haw. App. at 558, 732 P.2d at 257, in order to lay a proper foundation for admittance of the BAC results. As such, regular maintenance is relevant in any inquiry as to the reliability of the VPSS machine.

Nevertheless, the maintenance standards required by Title 11, and the maintenance requirements suggested by the manufacturer of the VPSS machine, are not the same. While Chang testified that the machine was not maintained every month as the specifications recommend, but instead on an "as needed basis[,]" there is no evidence that this practice violated Title 11 standards. The previous HAR title 11, chapter 111 included a section regarding blood testing equipment that stated that "[m]anufacturer's instructions for instrument calibration, maintenance, and repair shall be followed." HAR § 11-111-5(j)(4)

(1986). However, the 1993 version of HAR title 11, chapter 114 apparently omitted this section. There is no comparable section with references to "manufacturer's instructions" pertaining to testing procedures. Accordingly, Chang was under no obligation under HAR title 11, chapter 114 to incorporate manufacturer recommendations into her laboratory methodology.

As noted above, however, periodic maintenance may be germane to the reliability of a particular machine. Here, Chang testified that maintenance was conducted just three days prior to the date that Defendant's samples were run. According to Chang, the VPSS was calibrated prior to running Defendant's samples, indicating that the machine was operating accurately. Therefore, there was evidence that the VPSS machine was reliable.

IX.

For the foregoing reasons, the court's January 16, 2002 judgment and sentence as to the DUI offense should be vacated and the case remanded to the court for a retrial.